Pima Community College Catalog 75/76

Pima County Community College District

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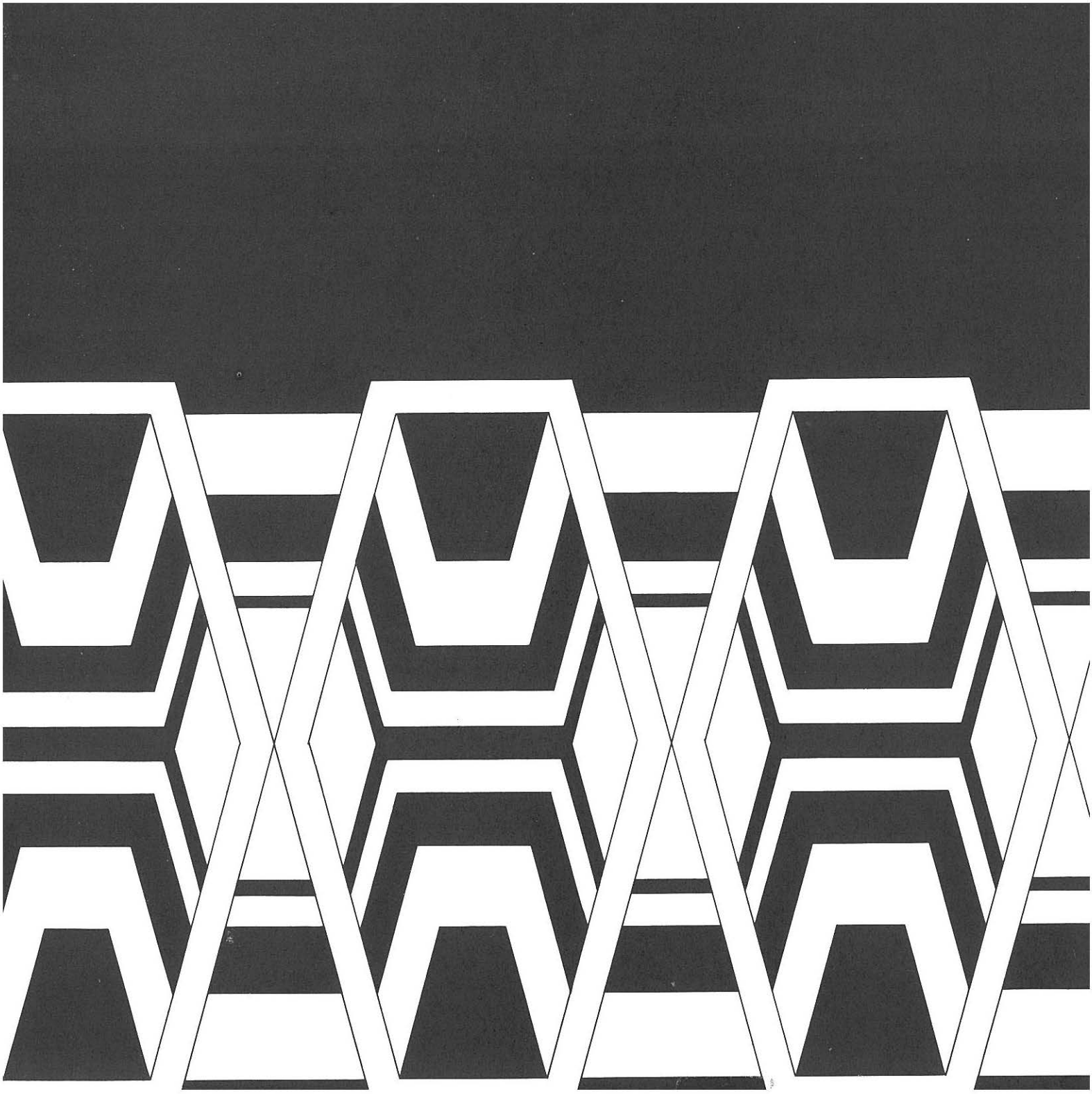
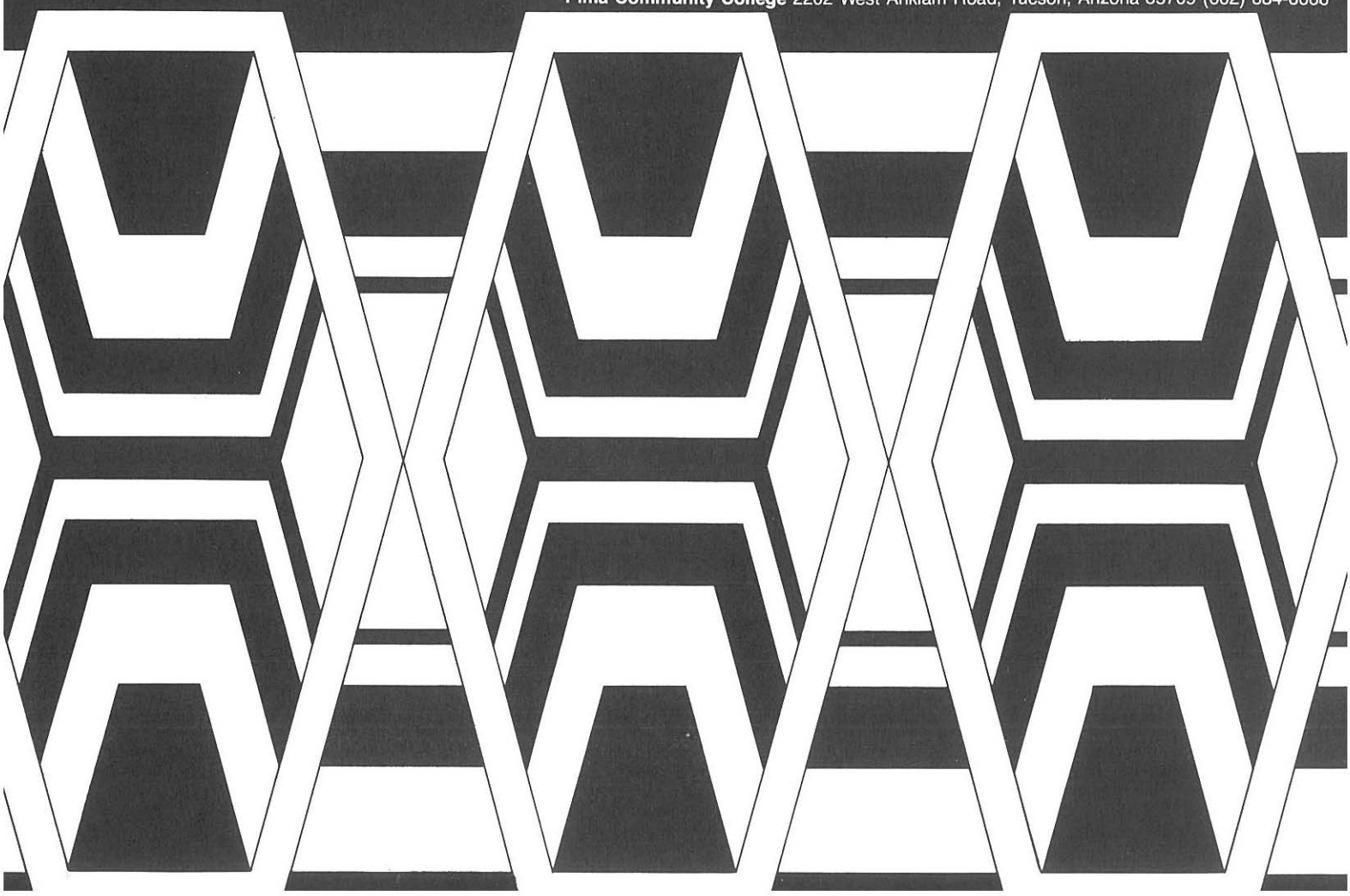
Catalog information on courses and regulations may be changed following a determination by the district's Governing Board.



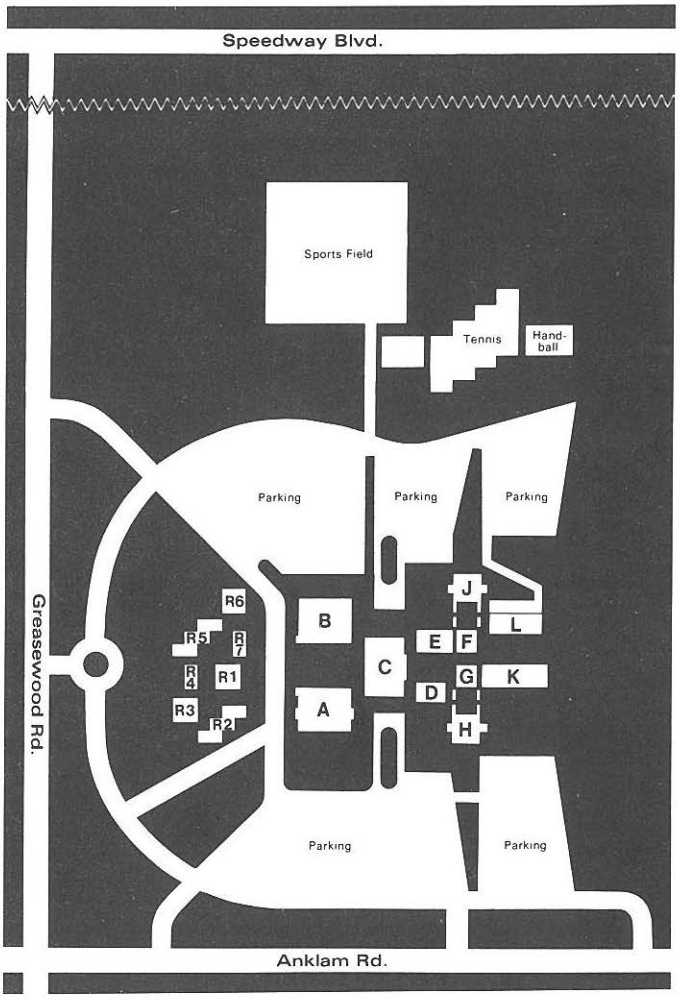
to serve the community

Pima Community College 2202 West Anklam Road, Tucson, Arizona 85709 (602) 884-6666



Pima Community College District

The college district serves the 9,240 square miles of Pima County which include the rapidly growing Tucson community of 430,000 residents. Two campuses currently make up the district. The west campus is located on the west side of Tucson and a satellite campus opened in the downtown Tucson area in the fall of 1974. In addition, classes are offered, principally during evening hours, at over fifty centers throughout Tucson and Pima County.



West Campus

The west campus is located in the foothills of the Tucson Mountains, three miles west of Tucson's central business district. The 273-acre site is bounded by Anklam Road on the south, Speedway Boulevard on the north, Greasewood Road on the west and La Cholla Boulevard on the east.

No dormitories are included in present plans, but assistance is offered students requiring housing in Tucson.

Facilities include 11 permanent buildings and 7 relocatable or portable buildings (designated as Area R) which were added during the summer of 1972 to take care of increasing enrollments.

A — College Center
- Admissions and Registrar
- Financial Aid
- Placement Service
- Organizations
- Information and Activities
- Health Office
- Veterans Office
- Art Exhibition Area
- Cafeteria
- Bookstore

B — Gymnasium

C — Learning Resource Center/Administration
- Administrative Services
- Business Services
- Library and Library Support
- Continuing Education
- Cooperative Education

D — Music

E — Math/Science/Electronics

F — Alternative Learning Center — North

G — Alternative Learning Center — South

H — Classroom Building — South

J — Classroom Building — North

K — Physical Science/Health Sciences Laboratory Building

L — Drama/Speech/Art/Crafts

Area R Relocatable Buildings

R1 — Business Classrooms
R2 — Business Classrooms
- Business Faculty Offices
- Human Resources Faculty Offices

R3 — Human Resources Classrooms
R4 — Human Resources Classrooms
R5 — Human Resources Classrooms
R6 — Human Resources Classrooms
- Human Resources Faculty Offices

R7 — Business Classrooms

Bus Service — West Campus

Pima Community College's main Anklam Road campus is served by the Old Pueblo Transit Co. and the Tucson City Transit Co. The Old Pueblo bus run is between Congress Street, in the downtown Tucson area, and the campus. Also available is a city shuttle bus service, provided on a half-hour basis, between the west and downtown campus sites.

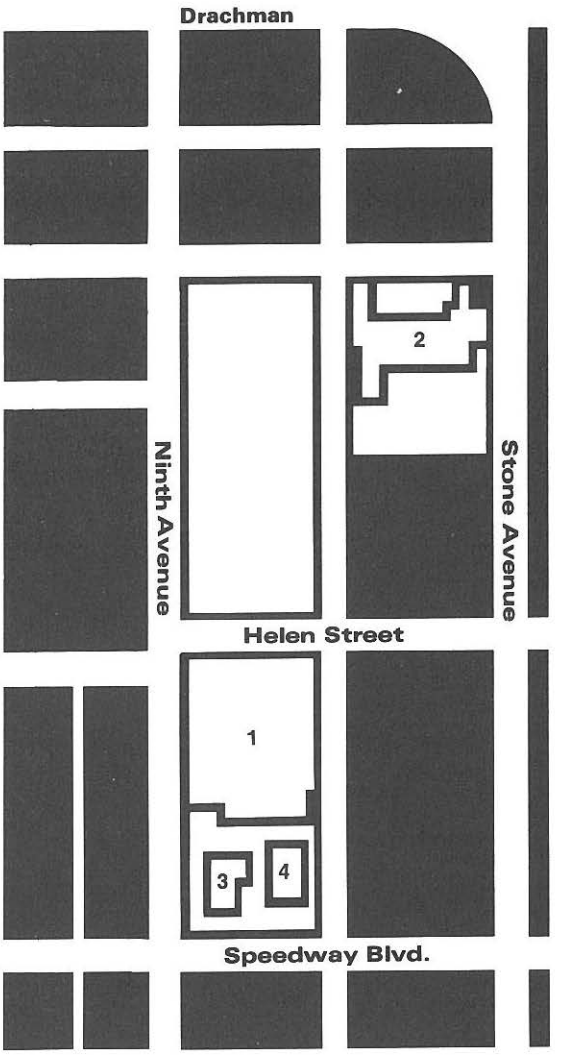
Downtown Campus

The newest facility of the Pima Community College District is the Downtown Campus, which opened in the Fall of 1974, and is located in the vicinity of Stone Avenue and Speedway Boulevard. This facility currently consists of four buildings, housing both classrooms and laboratories designed to serve the needs of its students.

A comprehensive study program including general education, college transfer and occupational education is offered. General education and college transfer courses and programs cover everything from mathematics, English, reading, writing, sociology, through history and psychology. Occupational programs include secretarial studies, automotive technology, air conditioning, sheet metal, machine tool technology, welding, keypunch, and health careers.

In most instances, students will be able to complete their entire program of study at the Downtown Campus or students may elect to take only a portion of their program at the Downtown Campus and the remainder at the West Campus or at an off-campus location. The city of Tucson currently provides a shuttle service between the Downtown Campus and the West Campus for the convenience of students.

The Downtown Campus was developed to assist the citizens of Pima County by offering quality educational opportunities at a campus which could be reached easily by both public and private transportation.



Downtown Campus

50 W. Speedway Blvd.
Tucson, Arizona 85705
Phone: (602) 884-6666

1 — Classrooms, Laboratories, Air Conditioning, Sheet Metal, Machine Tool Technology, Faculty Offices, Advising and Counseling area, Library and Administrative Offices

2 — Automotive Technology

3 — Annex Building

4 — Welding Technology

Bus Service — Downtown Campus

The City of Tucson provides seven bus routes to the Downtown Campus arriving every 10 to 20 minutes.

University Route #1
East 6th Route #3
East Speedway Route #4
Pima Street Route #5
North Stone Route #6
Miracle Mile Route #10
Pima College Route #13

Bus service between the Downtown Campus and the West Campus is provided by taking Route #13. Route #13 runs between the two campuses between the hours of 7:05 a.m. and 6:15 p.m., making a trip every half hour.

Student Academic Calendar 1975–76

Fall Semester

First Advising and Registration Period	June 30–Aug. 1
Advising/Registration	Aug. 19–22
Classes Begin	Aug. 25
Late Registration/Drop-Add	Aug. 25–29
Labor Day Holiday	Sept. 1
Veteran's Day Holiday	Nov. 11
Graduation Application Deadline	Nov. 13
Thanksgiving Day Holiday	Nov. 27–29
Evaluation/Assessment/Exam Week	Dec. 15–18
Fall Semester Ends	Dec. 19

Spring Semester

Advising/Registration	Jan. 12–14
Classes Begin	Jan. 15
Late Registration/Drop-Add	Jan. 15–21
Rodeo Days Holiday	Feb. 19–21
Spring Vacation	Mar. 22–28
Graduation Application Deadline	Apr. 1
Evaluation/Assessment/Exam Week	May 10–13
Graduation	May 13
Spring Semester Ends	May 14

Summer Session (1976)

First Five-Week Term

Registration	June 2–3
Classes Begin	June 7
Classes End	July 9

Second Five-Week Term

Registration	July 7–8
Classes Begin	July 12
Classes End	Aug. 13

Eight-Week Term

Registration	June 2–3
Classes Begin	June 7
Classes End	July 30

1975

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August

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History

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

The college opened to 3,543 students in September, 1970, with most facilities housed in temporary quarters and a portion located at a partially completed campus.
All college programs were moved to a 273-acre campus site on West Anklam Road in January, 1971.

In order to meet rapidly growing enrollments, a downtown Tucson campus was oponed in September, 1974, and a study is being made for an additional expansion of facilities.

College enrollments, by the fall of 1974, reached 15,266 students, and it is anticipated the number will grow to nearly 20,000 in the fall of 1975 with 11,000 on the west campus, 4,000 at the downtown satellite campus and the remainder in off-campus classes.

Pima Community College Philosophy

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

All individuals in the college community are encouraged to take pride in their own heritage and, at the same time, to develop 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 technical or vocational nature and courses beyond the basic education courses for adults."

Bringing its philosophical approach to bear on the State of Arizona's definition of its mission, Pima Community College has declared its functions to include:
General education designed to increase the individual's awareness of knowledge and his/her capacity for intelligent and responsible participation in society.

Educational programs of varying lengths to prepare students for 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.

Statement of Institutional Goals

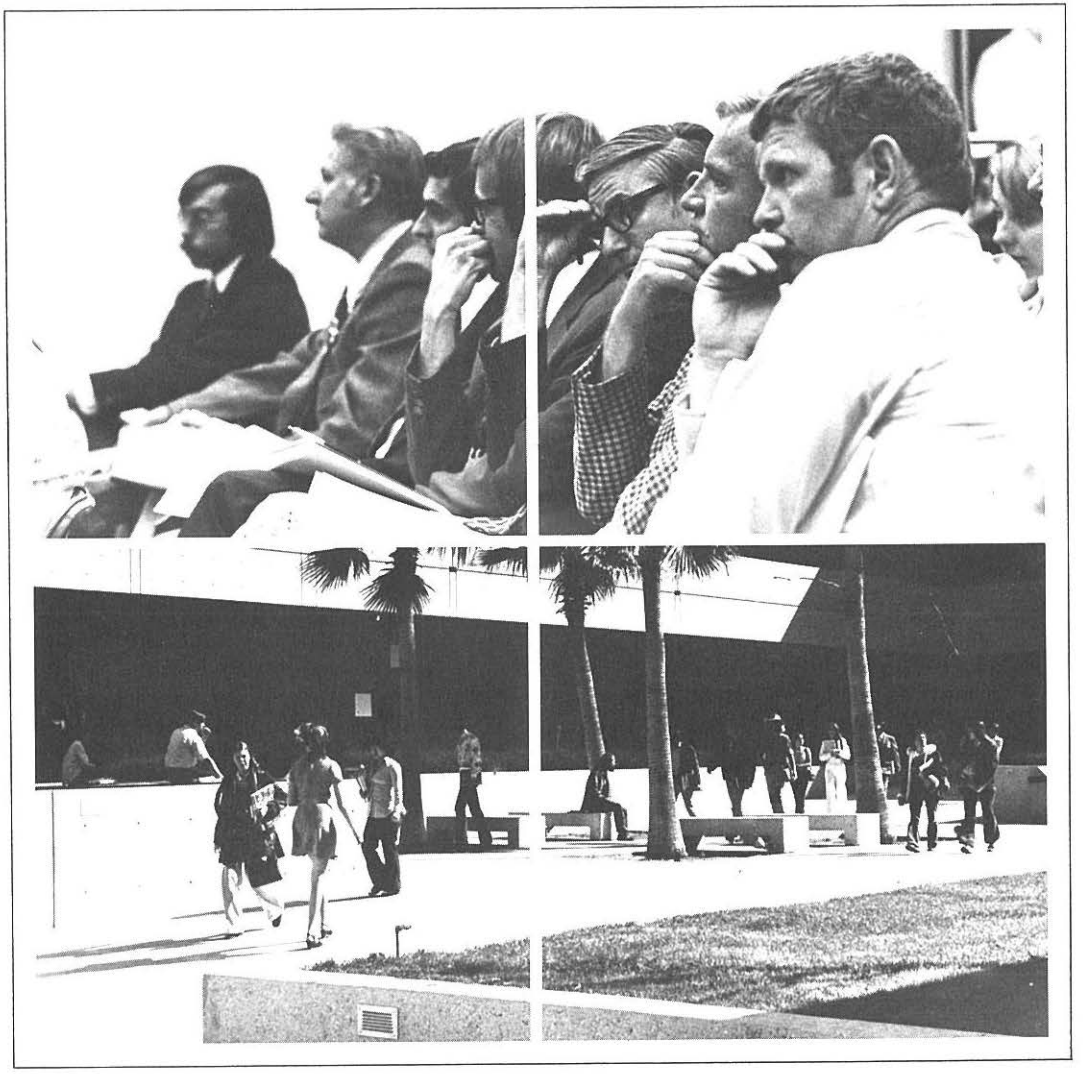
- To provide educational opportunities that facilitate human and personal development;
- Provide an environment that promotes independent thinking and effective communication;
- Prepare students for entry into and appreciation of actual careers;
- Develop an instructional program that accommodates individual 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, received full accreditation from North Central Association of Colleges and Secondary Schools during the spring of 1975.

This means the college, its programs, faculty and facilities are fully recognized by an accrediting agency. Transfer credits also are accepted by four-year institutions out-of-state as well as those within the state. Courses designed for transfer had previously been accepted by the three state universities.

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



WEST CAMPUS ORGANIZATION DIVISIONS

Business
Accounting
Business
Computer Science
Management
Marketing

General Studies
Exploratory
Journalism
Languages
Literature
Writing

Fine and Applied Arts
Art
Drafting
Drama
Humanities
Music
Philosophy
Religions, Comparative
Speech

Health Sciences
Dental Assisting
Emergency Medical Technology
Health Care
Nursing
Operating Room Technology
Ophthalmic Dispensing
Radiologic Technology
Respiratory Therapy

Human Resources
Administration of Justice
Anthropology
Economics
Fire Science
Health
History
Home Economics
Military Science
Physical Education
Political Science
Psychology
Recreation
Sociology

Math, Science, Electronics
Astronomy
Chemistry
Earth Science
Electronics
Engineering
Life Science
Mathematics
Physics

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 materia, y amplio en sus métodos.

Los programas educativos que se imparten en Pima Community College en general no tendrán una duración mayor de 2 años. El currículo incluye cursos en las diversas materias que se imparten tanto en español como en inglés, presentando materias en ambos idiomas. Pima Community College proporciona a la comunidad 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 educativas 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 cabo esta definición, Pima Community College se compromete a prestar los siguientes servicios a la comunidad:

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

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

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

Admission

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

A—A graduate from an accredited high school, or

B—Has a G.E.D. Certificate of high school equivalency, or

C—Transferring from an accredited college, or

D—A non-high school graduate who is 18 years of age or older, or

E—A non-high school graduate between the ages of 16 and 18 who has not been enrolled in a high school during the previous regular semester. Students in this category must provide a written acknowledgment of withdrawal from the principal of the last school attended along with a letter of approval from their parents or legal guardians and are subject to review by the Admissions Committee. Or

F—An able and ambitious student currently attending an area high school may enroll on a concurrent basis by presenting written approval from his or her principal and from his or her parents or legal guardians.

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

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

The Admissions Office is open all year at both the West Campus and the Downtown Campus to receive applications of admission and to provide information on class schedules and registration procedures.

Transfer of Credits

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

Students enrolled concurrently at the University of Arizona should insure that courses taken at Pima are applicable to their degree program.

Registration and Advising

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

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 Affairs 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.

The college's veterans program provides pre-counseling in the areas of job placement, financial assistance and information on referrals to other agencies for further assistance.

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

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 will be required to determine such adequacy. All new foreign students *must* report to the Foreign Student Advisor one week before registration to schedule an examination date. If this arrival time is impossible, the student must contact the Foreign Student Advisor.

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 this application and other information to the Foreign Student Admissions Office no later than one week prior to the beginning of registration.

FOREIGN STUDENT ADVISOR: The Foreign Student Advisor 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. All foreign students must contact the Foreign Student Advisor in the Student Development Office upon arrival.

Fee Schedule — 1975–76

Registration Fee (All students)	
Full-Time Student (12 + hours)	*$ 60*
Part-Time Student (7 to 11 hours)	*40*
Part-Time Student (1 to 6 hours)	*20*
Tuition	
County Resident (No tuition, see fees)	*None*
Out-of-County, in-state Resident (See fees)	
(12 + hours)	*$450*
Per credit hour (7 to 11)	*38*
Out-of-State Resident (See fees)	
(12 + hours)	*600*
Per credit hour (7 to 11)	*50*
Laboratory Fees	
Nominal non-refundable lab fees may be assessed for lab courses.	
Special Fees	
Out-of-State Application (non-refundable)	*10*
Official Transcript (First copy is free)	*1*
Late Registration	*5*
Music Lessons (Private)	
Non-Music Majors	
(1 hour/week)	*128*
(½ hours/week)	*64*
G.E.D. Test	*10*
G.E.D. Test (repeat)	*2*
R.O.T.C. Deposit	*25*
Business Machine Deposit	*25*
Excessive Loss or Breakage due to Carelessness	*(up to actual replacement cost)*

Summer Session Fee Schedule — 1976

Per Semester Hour	*12*
Registration Fee Per Session (non-refundable)	*2*

*Arizona students residing in counties which do not have State Supported Community colleges may be eligible to have tuition paid by the county of their residence. The out-of-county forms are available in the Registrar's Office.

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 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 at any time 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 Registrar's Office. All requests for refunds must be made through the Business Office after appropriate action has been taken in the Registrar's Office.

NON-CREDIT COURSE FEE REFUND: No fees will be refunded after the first course meeting.

Grading Policies

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

A—Superior (4 grade points per credit hour).

B—Good (3 grade points per credit hour).

C—Average (2 grade points per credit hour).

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

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

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

W—Withdrawal (This grade may be requested by the student 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 or 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.

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 subject areas. Certain occupational programs, in addition, offer students a choice of an Associate of Science or Associate of Applied Science degree. The degree is specified in the program curriculum.

These degrees generally are granted upon the successful completion of a program, usually two years in length, which has been outlined by the college faculty and approved by the Arizona Community College Board. Details of programs offered are listed.

While a minimum of 60 credit hours is required to earn an Associate degree at Pima, it should be noted that the completion of some programs extends beyond the 60-credit hour minimum.

At least 12 semester hours of the total required to qualify for an Associate degree must be earned at Pima Community College.

Certificates

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

Summer Session

A three-term summer program is being offered for the summer of 1976 and course offerings will be determined by student demand. The summer session consists of two five-week day terms, and one eight-week day and evening term.

A tuition fee of $12 per credit hour plus a registration charge is applicable during the summer session.
(See Fee Schedule.)

Continuing and Community Education Programs

In an effort to provide all residents of the community with appropriate educational service, the college sees continuing education as an essential way of serving those who fall outside the usual college-attending group. By marshalling its entire resources, the District seeks to meet the special needs of those students who, for one reason or another, elect to continue their education on a part-time basis, generally during evening hours.

Continuing education is seen as "continuing" in a number of ways:

- Stretching the college experience of students past the conventional collegiate years;
- Extending the hours that classes are offered into the evening and week-end hours;
- Widening the geographic area in which education is provided by holding classes in centers scattered throughout the county;
- Extending the scope of conventional curriculum by including courses of special interest to adult students, or needed by them.

The programs planned to meet these objectives include a large range of regular credit courses, with some given during the day-time but most in the evening, (offered under the various degree and certificate programs); courses in the arts and sciences and general education; courses to gain or increase skills in the professions, business and industry; courses in the creative and homemaking arts.

These courses are offered at both the West and Downtown Campuses, and at over fifty centers through the cooperation of various agencies including the public school systems in Tucson, the surrounding communities, and in Ajo, Marana, Nogales and Sells. The District also offers 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 also is prepared to design new or special programs to meet the needs of community groups and individuals, drawing upon its own and community resources.

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.

The exploratory program offers an individualized approach to education for the student who has yet to define 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.

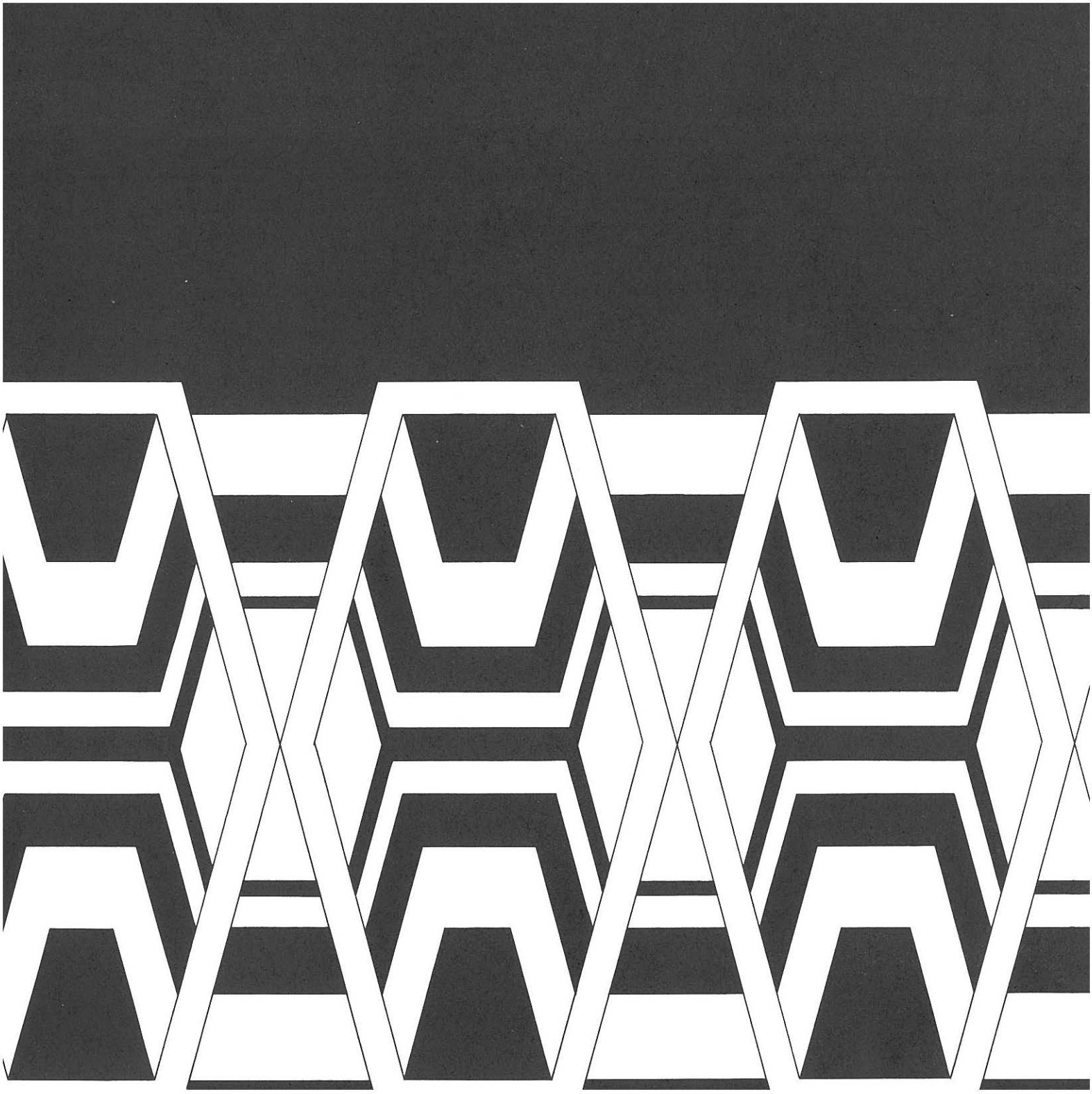
Pima Community College will award the appropriate Associate degree or certificate to a SOC student who has completed the requirements for graduation whether the student is in attendance at the time of completion of requirements or not. Complete details about the program can be obtained from the Continuing Education Office on campus or from the Davis-Monthan Air Force Base Education Office.

Pre-Discharge Education Program (PREP)

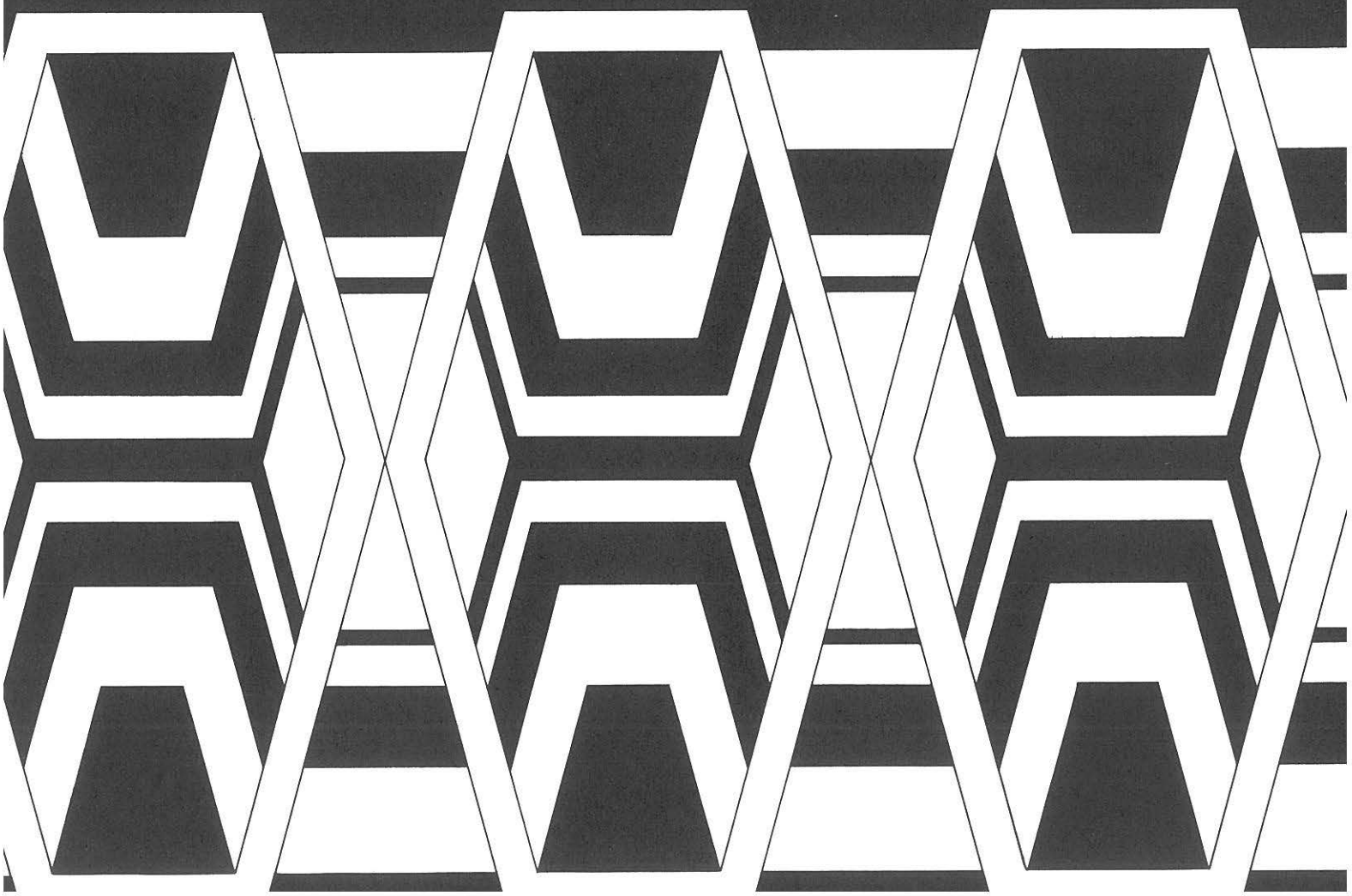
PREP is a Veterans Administration financed on-duty program designed for military service personnel who require refresher studies to better prepare themselves for college entry, vocational training and Air Force career advancement.

Davis-Monthan Air Force Base personnel participating in the program spend 10 or more weeks in classes on base. 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



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 West Campus College Center and in the Main Building of the Downtown Campus.

Student Development

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

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

CAREER PLANNING: Laboratories and/or psychological tests and counseling are available for students seeking assistance in clarifying career and personal goals.

ACADEMIC ADVISING: Students will find faculty advisors on hand ready to help them plan study programs according to their career choice. Those who have not yet decided on an academic, vocational or personal goal can get assistance from counselors on exploring program options. If the student later decides to change his or her program of study, he or she will be introduced to an advisor familiar with the requirements of that particular program by a division counselor.

PERSONAL PROGRAM DEVELOPMENT: This program provides a variety of group experiences and individual conferences for students seeking alternative approaches to personal growth.

The groups meet once a week and focus on such areas as self-awareness, career exploration, new modes of problem solving, and improving interpersonal skills. Students are encouraged to sign up early in the semester for these ongoing sessions.

Special programs are provided to assist Indian students, ex-offenders, and veterans. These programs include helping qualified students obtain financial benefits, counseling and tutoring.

No appointment is needed during regular college hours.

Alternative Learning Center

The Alternative Learning Center provides individualized instruction in various subject areas. Designed to supply alternative methods of learning, the center uses individualized, modular, multi-media and personal methods to aid learning. The center can be used to obtain tutoring and supplemental help for classes or may provide complete course work in some areas. Students are allowed to work at their own pace.

The center, located on the first floors of Buildings F and G, offers instruction in writing, math, reading, English as a second language, and study skills. Counseling services also are provided.

Student Activities

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

Cultural events include visiting artists, films, visiting speakers, lecturers, 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 personel, in addition, will help students reserve a meeting room for college activities or post a notice. A student handbook and student bulletin are made available through this office.

Special Services

Special Services assists students who are disadvantaged economically, culturally, socially or physically. A major program of Special Services is helping physically handicapped students such as wheeling them to classes and having student aides take class notes for those unable to use their hands. Tutoring in study skills is designed 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 professional and para-professional personnel as well as student aides, assists in counseling and program development during registration periods; counsels students who are tutored; and helps direct students to agencies where they can get proper assistance.

Student Leadership

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

Several students are elected annually to the student network, the College Council and the Governing Board.

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

Students are requested to volunteer for college task forces and committees. Those interested in participating should check with Student Activities for available positions. Students, in addition to serving on the college groups, provide information on activities of the various groups to the student body government.

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 each campus' 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. Awards range from $20 to $500 and often can be renewed for a second year.*
The available scholarships are:

- Grace K. Abodeely Scholarship
Source: Grace K. Abodeely.
Eligibility: Male student in Early Childhood Education.
Value: $120, one award per year.

- Grace K. Abodeely Scholarship Fund
Source: Grace K. Abodeely.
Eligibility: Deserving student on rifle team, in trap shooting.
Value: $120, one award per year.

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

- Arizona Bank Scholarship
Source: Arizona Bank.
Eligibility: Promising students in the business field.
Value: $150, two awards per year.

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

- Continental Airlines Foundation Scholarship
Source: Continental Airlines Foundation.
Eligibility: Promising students in any field.
Value: $120, one award per year.

- Riginette Enz Scholarship
Source: Mrs. Riginette Enz.
Eligibility: Students enrolled in the Dental Assisting Program.
Value: $60, one award per year.

- First National Bank Scholarship
Source: First National Bank of Arizona.
Eligibility: Students in the business field.
Value: $125, three awards per year.

• Andrew P. Martin Scholarship Fund
Source: Estate of the late Andrew P. Martin
Eligibility: Graduate of a Tucson High School, enrolled in a one or two year building, electronics or mechanical trade course of study.
Value: $300, number of awards varies, renewable.

• Frederick B. Ginsburg Memorial Scholarship
Source: The Family and Friends.
Eligibilty: Deserving students in any field of study.
Value: $300 per year, 1 award each year.

• Georgia Lee Jenkins Scholarship
Source: Christopher Payne and Melissa Lee Jenkins.
Eligibility: Promising and needy students.
Value: $120, one award per year, renewable.

• John W. Kenney Scholarship
Source: Southern Arizona Bank.
Eligibility: Students in the occupational and industrial program.
Value: $300, one award per year.

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

• Marshall Foundation Fund — Allied Health Scholarship
Source: Marshall Foundation.
Eligibility: Female students enrolled in nursing program.
Value: Amount varies, number of awards varies.

• J. G. (Jack) Moore Memorial Scholarship
Source: Mrs. Margery Moore.
Eligibility: Promising students interested in becoming teachers.
Value: $250, two awards per year.

• National Academy of Opticianry
Source: The Educational Foundation in Ophthalmic Optics.
Eligibility: Second year student in Ophthalmic Dispensing.
Value: $500, one award per year.

• Old Pueblo Optical Scholarship
Source: Old Pueblo Optical.
Eligibility: Promising second year student in Ophthalmic Dispensing.
Value: $120, one award per year.

• Optimist Club of Tucson Scholarship
Source: Optimist Club of Tucson.
Eligibility: Deserving students in any field.
Value: Amount varies, number of awards varies.

• Phoenix, McCleod Optical Scholarship
Source: Phoenix McCleod Optical Inc.
Eligibility: Promising deserving students in ophthalmic dispensing.
Value: $300, one award per year.

• Pima Community College Faculty/Staff Scholarship Fund
Source: Donations from faculty and staff.
Eligibility: Deserving students in any field.
Value: $120, number of awards varies.

• Pima Community College General Scholarship Fund
Source: General donations to the fund.
Eligibility: Promising students in any field.
Value: Amount varies, number of awards varies.

• Pima Community College Booster Club Scholarship Fund
Source: Donations from Booster Club.
Eligibility: Outstanding students in athletics and other fields.
Value: $120, number of awards varies.

• Pima Community College General Hospital Auxiliary Scholarship
Source: Pima County General Hospital Auxiliary.
Eligibility: Promising students interested in a health career.
Value: $120, two awards per year.

• Recognition Award
Source: Pima Community College Student Association.
Eligibility: Participation in extra-curricular college activities and departmental recommendation.
Value: Up to $120, number of awards varies.

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

• Southern Arizona Chapter of A.C.U.L.
Source: Southern Arizona Credit Unions.
Eligibility: Credit Union Members pursuing the Credit Union Degree Program.
Value: $120, per year, 2 awards each year, renewable.

• Southern Arizona Dental Society Scholarship
Source: Southern Arizona Dental Society.
Eligibility: Students enrolled in dental assisting program.
Value: $120, one award per year.

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

• Tucson Advertising Club Scholarship
Source: Tucson Advertising Club.
Eligibility: Advertising majors.
Value: $60, ten awards per year.

• Tucson Dental Assisting Scholarship
Source: Tucson Dental Assisting Association.
Eligibility: Promising students in dental assisting program.
Value: $60, one award per year.

• Tucson Gas and Electric Scholarship
Source: Tucson Gas and Electric Company.
Eligibility: Children of Tucson Gas and Electric Company employees.
Value: $220, two awards per year, renewable.

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

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

BASIC EDUCATIONAL OPPORTUNITY GRANTS *are available to eligible students who have not attended post-secondary institutions prior to April 1, 1973. Special applications are available in the college's Financial Aid Office or from high school counselors.*

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

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

Student Employment

The college Placement Office operates a complete student employment service to assist persons 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 provide advice on getting and adjusting to a full-time job after graduation.

Cooperative Education

The Cooperative Education Program attempts to give students work experience related to their studies and career goals. Part-time students who desire to upgrade themselves in their present jobs also are encouraged to enroll. Students successfully completing the program are awarded college credits each semester.

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

Each student is assigned to an education coordinator who works individually with him and offers assistance in job placement, job upgrading, career information and program planning.

Employers hiring students through the Cooperative Education Program are requested to evaluate their performance once per semester.

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

Employers are aware that their employees are attempting to upgrade their knowledge and are willing to plan a work experience program. This could lead to faster promotions and higher pay.

The employer, in addition, has the advantage of using college facilities for training employees on new equipment or for newly created jobs. The college, meantime, assesses his training needs while providing an education for his employees.

Intercollegiate Athletics and Intramural Sports

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

INTERCOLLEGIATE: Pima is a member of the Arizona Community College Athletic Association, the National Junior College Athletic Association, Arizona Women's Intercollegiate Sports Council, the Intermountain Sports Region, and the Division of Girls' and Women's Sports. Intercollegiate activities are governed by a board of students, staff and faculty with policies administered under the President by the Director of Athletics. Eligibility requirements are set by the sports organizations which govern our participation. The basic stipulations are that the student/athlete be enrolled full time, making satisfactory academic progress, and that he or she has not previously completed two seasons of the respective sport.

Competition includes cross country, basketball, women's basketball, baseball, women's volleyball, wrestling, golf, tennis, women's tennis, track, and women's softball.

INTRAMURAL: Intramural activities are open to any member of the college — students, faculty and staff — with sports geared to individual and team competition. More than 20 activities are available, and others are developed when enough interest is shown. Activities include basketball, baseball, badminton, flag football, golf, billiards, handball, ping pong, seven-mile bicycle race, softball, swimming, tennis and volleyball.

Publications

Student publications include a newspaper, "Campus News," 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 General Studies Division or the Student Activities Office.

Students interested in helping publish the magazine should register for Writing 62. Articles also can be contributed and these should be submitted on the West Campus to either the magazine office in room 135 of Building J or the General Studies Division, located on the third floor of Building J, or to the Downtown Campus Student Services Coordinator.

Learning Resources Center (Library)
The College library, located on the third floor of Building C, on the West Campus, is open to students, college personnel and residents of Pima County.
Facilities currently house more than 50,000 volumes and more than 20,000 non-print materials. Also available are more than 900 serial publications, back issues of periodicals and specialized research materials such as E.R.I.C. documents and technical reports. Other materials include tapes, films, filmstrips, maps, charts, and records. Most equipment necessary to view or hear the audio-visual items is available for student use in the reading room of the library.

Collection areas of particular strength and interest are: American minorities, criminology and law enforcement, English and American literature, art, utopian communities, and science fiction. The library also holds many Spanish language materials — in both book and magazine form — on all subject areas.

The library, in addition, is frequently used to house art exhibits brought onto campus as well as those by students and faculty.

The center contains tables, study carrels and lounge chairs for more than 500 students. A public service staff is 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.

Reference library facilities also are available to students at the downtown campus. Students registered at the downtown campus, in addition, are encouraged and eligible to use the west campus library.

Pima Community College students with specific research needs also may acquire either special borrowing privileges at the University of Arizona main library or on-site services at the University of Arizona medical library. This is a restricted privilege and granted only to current students who:

- Are pursuing research directly related to their course of study at Pima Community College;
- Assume full responsibility for returning all materials acquired through use of the services;
- Agree to pay for all University of Arizona library materials which they lose or damage;
- Agree to pay all fines that may be owed for overdue materials;
- Agree to present identification in order to obtain privileges;
- Have research requirements unlikely to be satisfied by other community resources.

Signed letters granting on-site services at the Arizona Medical Library are good for only one visit. Pima Community College students do not have the privilege of borrowing materials from the Arizona Medical Library.

Assistance and authorization for using the University of Arizona library facilities can be obtained at the circulation desk of the Pima Community College library.

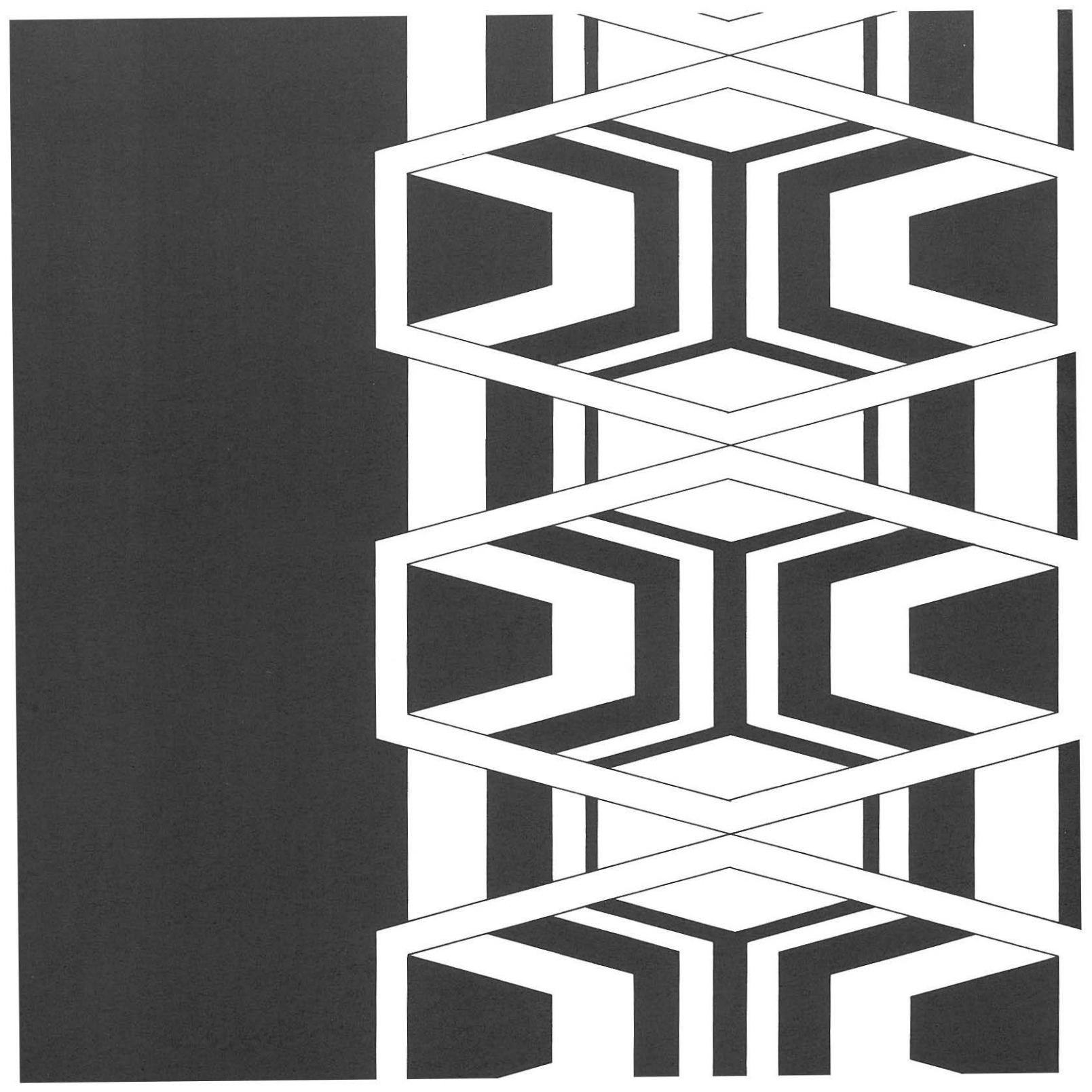
The Downtown Campus Library has a small collection of print and non-print materials for reference and for curriculum support. A browsing collection of current magazines and newspapers is also maintained for informational and leisure reading. None of these materials circulate. Research assistance, guidance, and referral to other community library resources is available from the libraries professional staff. Students registered at the Downtown Campus, in addition, are eligible and encouraged to use the West Campus library, whether independently or through the reference services offered by the Downtown Campus library staff.

Career Information Center

A new career center has been established at the Downtown Campus which provides district students with a varied approach to the career decision making process. All areas of the educational process will be utilized in assisting the student. This will include both printed and media resources, counseling, and instruction.

The principle effort of the Career Center is to provide an organized and systematic approach to a most important area of student life — career development. Many specific services will be developed at the center. Among these will be vocational aptitude testing, career films and slides, career briefs, career exploration classes, field trips, and the services of a computer terminal.

This comprehensive effort will attempt to provide a career profile for each student, with emphasis on the total individual and his needs. Students are most welcome to utilize the Career Center on either an appointment or drop-in basis.




programs

Programs

Accounting
Administration of Justice
- Corrections
- Criminal Justice

Air Conditioning
Allied Health
Applied Art and Design
Arts and Crafts
Automotive
- Automotive Mechanics
- Automotive Technology

Aviation Mechanics
Bilingual-Bilingue
Biology
Business Administration Transfer
Chemistry
Computer Science
- Control Technician
- Computer Operator
- Computer Programmer/Analyst
- Key Punch Operator
- Systems Programmer

Dental Assisting Technology
Dental Laboratory Technology
Drafting Technology
- Architectural Drafting
- Electro-Mechanical Drafting
- Mechanical Drafting

Drama
- Applied Drama
- Drama Education
- Drama Production
- Drama Theory

Early Childhood Education
- Child Development/Family Relations
- Early Childhood Education
- Teacher Aide/Assistant
- Teacher-Director

Education
- Elementary or Special
- Secondary

Electronics
- Communications
- Consumer
- Digital
- Industrial

Emergency Medical Technology
Engineering
English as a Second Language
Exploratory
Finance
- Banking
- Credit Union
- Savings and Loan

Fine Arts
Fire Science
Geology
Home Economics
- Alteration Specialist
- Consumer Service in Food
- Fashion Design
- Food, Nutrition, Dietetics
- Food Service Management
- General Home Economics
- Home Economics Education
- Home Economics Extension
- Home Economics and Journalism
- Interior Design
- Merchandising and Fashion Promotion

Journalism
Liberal Arts and Sciences
Library Technician
Machine Tool Technology
Management
Marketing
Mathematics
Media Technician
Military Science
Music
Nursing
- Nursing Assistant
- Nursing (A. D.)
- Nursing, Transfer
- Practical Nurse

Office Education
- Administrative Assistant
- Clerk-Typist
- Receptionist
- Secretary, Bilingual
- Secretary, Executive
- Secretary, General
- Secretary, Legal
- Secretary, Medical

Operating Room Technology
Ophthalmic Dispensing Technology
Optical Laboratory Technology
Physical Education
Physics
Pre-Dental
Pre-Environmental
Pre-Law
Pre-Medical
Pre-Medical Technology
Pre-Pharmacy
Pre-Veterinary
Radiologic (X-ray) Technology
Real Estate
Recreation
- Natural Resource
- Park/Forest Service
- Recreation Leader

Respiratory Therapy
Skills for Allied Health Services
Sheet Metal
Social Services
Speech
Welding

Certificate and Degree Programs

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

Basic Certificate

Air Conditioning
Airframe and Powerplant Mechanics
Allied Health Services
Alteration Specialist
Automotive Engine Repair and Rebuilding
Automotive Power Transmission
Automotive Suspension and Brakes
Automotive Tune-Up and Air Conditioning
Commercial Art
Commercial Photography
Drafting, Architectural
Electronics, Consumer
Electronics, General
Functional Design
Interior Design
Key Punch Operator
Machine Shop Fundamentals
Management
Marketing
Media Technician
Nursing Assistant
Optical Laboratory Technology
Power Transmission
Real Estate
Savings and Loan
Sheet Metal
Social Services
Suspension and Brakes
Teacher Aide/Assistant
Television Repair
Welding

Certificate

Emergency Medical Technology
Respiratory Therapy

Advanced Certificate

Accounting
Clerk-Typist
Commercial Art
Commercial Photography
Dental Assisting
Dental Laboratory
Functional Design
Interior Design
Library Technician
Management
Marketing
Operating Room Technology
Practical Nurse
Pre-Dental
Pre-Medical
Real Estate
Receptionist
Secretary, Bilingual
Social Services (Drug Counseling Subspecialty)
Systems Programmer

Technical Certificate

Air Conditioning, Heating and Ventilation
Automotive Mechanics
Computer Operator
Control Technician
Drafting, Architectural
Electronics Technology — Communications
Electronics Technology — Consumer
Electronics Technology — Digital
Electronics Technology — Industrial
Key Punch Operator
Machinist's Standard
Welding

Associate of Arts Degree

Administration of Justice
Applied Art and Design
Arts and Crafts
Child Development/Family Relations
Consumer Service in Food
Corrections
Criminal Justice
Drama Education
Drama Production
Drama Theory
Early Childhood Education
Fashion Design
Fine Arts
Food, Nutrition, Dietetics
Food Service Management
Home Economics Education
Home Economics Extension
Home Economics, General
Home Economics and Journalism
Interior Design
Journalism
Liberal Arts
Mathematics
Music
Physical Education
Pre-Environmental Design
Social Services
Social Services (Drug Counseling Subspecialty)
Speech
Teacher-Director

Associate of Applied Science Degree

Accounting
Administrative Assistant
Air Conditioning and Sheet Metal Technology
Automotive Technology
Banking
Computer Programmer/Analyst
Credit Union
Drafting, Architectural
Drafting, Electro-Mechanical
Drafting, Mechanical
Electronics Technology — Communications
Electronics Technology — Consumer
Electronics Technology — Digital
Electronics Technology Industrial
Fire Science
Library Technician
Machine Tool Technology
Management
Marketing
Media Technician
Natural Resource Recreation
Park/Forest Service
Real Estate
Recreation Leader
Savings and Loan
Seamstress, Professional
Secretary, Bilingual
Secretary, Executive
Secretary, General
Secretary, Legal
Secretary, Medical
Welding

Associate of Science Degree

Automotive Technology
Biology
Business Administration
Chemistry
Electronics Technology — Communications
Electronics Technology — Consumer
Electronics Technology — Digital
Electronics Technology — Industrial
Engineering
Geology
Nursing
Ophthalmic Dispensing
Physics
Radiologic Technology
Respiratory Therapy

Accounting

The curriculum within the Accounting Degree program provides training and experience in systems, theory, and central problems of business accounting. The program provides the background necessary for related yet diverse entry-level careers in private accounting, public accounting, and governmental accounting.

Students planning to become Certified Public Accountants should follow the curriculum of the Business Administration Transfer Program.

Advanced Certificate
For Direct Employment

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

Associate of Applied Science Degree
For Direct Employment

Required Courses (60–65)	First Semester	Cr. Hrs.
Principles of Accounting I	ACC 101	3
Introduction to Business	BUS 100	3
Mathematics of Business	BUS 51	3
Human Relations	MAN 110	3
Business English	OED 154	3
		15
	Second Semester	
Principles of Accounting II	ACC 102	3
Introduction to Computers	CSC 100	3
Tax Accounting	ACC 204	3
General Education Elective*		3–4
Public Speaking	SPE 110	3
		15–16
	Third Semester	
Cost Accounting	ACC 203	3
Business Law I	BUS 200	3
Intermediate Accounting I	ACC 201	3
Introduction to Microeconomics	ECO 100	3
General Education Elective*		3–4
		15–16
	Fourth Semester	
Business Organ. and Mgmt.	MAN 280	3
General Education Elective*		3–4
General Education Elective*		3–4
COBOL Programming	CSC 160	3
Intermediate Accounting II	ACC 202	1–3
		15–18

General Education Requirements*

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

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

Criminal Justice
Associate of Arts Degree
For Direct Employment

Required Courses (62–64)	First Semester	Cr. Hrs.
Intro. Admin. of Justice	AJS 101	3
Criminal Law I-II	AJS 172, 272	6
Criminal Justice Proced.	AJS 216	3
Police Comm./Human Relations	AJS 210	3
General Education Requirements		
Writing I	WRT 101	3
Technical Communications	WRT 154	3
Am. National Government	POL 110	3
Am. State/Local Govt.	POL 111	3
Intro. to Sociology	SOC 100	3
Intro. to Psychology I-II	PSY 100–101	6
Business Math	BUS 51	3
Intro. to Microeconomics	ECO 100	3
Bus. & Prof. Communication	SPE 120	3
Electives*		17–19
		47–49

Suggested Electives*		
Intro. to Public Admin.	PAD 105	(3)
Defensive Tactics	AJS 12	(2)
Firearms	AJS 214	(2)
Patrol Procedures	AJS 71	(3)
Crime Scene Tech. I	AJS 72	(3)
Crime Scene Tech. II	AJS 273	(3)
Basic Criminalistics	AJS 76	(3)
Adv. Criminalistics	AJS 277	(3)
Juvenile Justice Proced.	AJS 212	(3)
Cooperative Training	AJS 299	(3)
Police Administration	AJS 208	(3)
Typing I	OED 111	(1–3)
Drugs, Politics, Law	SSE 127	(3)
Drugs in Am. Society	SSE 115	(3)
Traffic Safety Functions	AJS 106	(3)
Organized Crime Investigation	AJS 220	(3)
Crisis Intervention	SSE 236	(3)
Fund. of Crime & Delinquency	AJS 260	(3)

Criminal Justice
Associate of Arts Degree
For Transfer

Required Courses (65–67)	First Semester	Cr. Hrs.
Writing I	WRT 101	3
Philosophy or Science*		3–4
College Algebra	MTH 150	3
Am. National Government	POL 110	3
Intro. to Admin. of Justice	AJS 101	3
Criminal Law	AJS 172	3
		18–19
	Second Semester	
Writing II	WRT 102	3
Philosophy or Science*		3–4
Finite Math	MTH 170	3
Am. State/Local Govt.	POL 111	3
Criminal Law II	AJS 272	3
Defensive Tactics or	AJS 12	
Firearms	AJS 214	2
		17–18
	Third Semester	
Intro. to Microeconomics	ECO 100	3
Bus. & Prof. Communication	SPE 120	3
Stat. Methods in Eco. & Bus.	BUS 205	3
Intro. to Public Admin.	PAD 105	3
Social Science Elective**		3
		15
	Fourth Semester	
Intro. to Microeconomics	ECO 101	3
Intro. to Computers	CSC 100	3
Criminal Justice Proced.	AJS 216	3
Police Comm./Human Relations	AJS 210	3
Social Science Elective**		3
		15

*Fulfilled by Introduction to Philosophy I (PHI 101) or Introduction to Logic (PHI 120) or PHI 120 and one semester of laboratory science; or by two semesters of laboratory science (astronomy, biology, botany, chemistry, geology, microbiology, physics, zoology).

**Students, by the end of the second year, should have completed a minimum of six credit hours in one of the following fields:

Anthropology 110, 220, 210; Psychology 100, 101, 102, 103; Sociology 100, 201.

Note: Transfer students should follow the requirements of the four-year institution to which they plan to transfer.

Administration of Justice

The Administration of Justice curriculum offers two options — criminal justice and corrections. Courses are designed to serve three types of students: pre-service, transfer and in-service. Students may acquire skills necessary to up-grade their present positions, find a job, or transfer to a four-year institution.

Job entry programs provide students with the maximum number of job entry skills possible. Students in these programs should concentrate their efforts on the specific major courses, taking only the minimum general education requirements.

Students planning to transfer should follow the requirements of the four-year institution they wish to attend, taking only the core courses in their major area. A transfer program also is available at Pima.

Students entering the program must be advised by one of the instructors in this area.

Corrections
Associate of Arts Degree
For Direct Employment

Required Courses (62–64)	First Semester	Cr. Hrs.
Intro. Administration of Justice	AJS 101	3
Criminal Law I	AJS 172	3
Fund. Crime & Delinquency	AJS 260	3
Crim. Justice Procedures	AJS 216	3
Juvenile Justice Proced.	AJS 212	3
		15
General Education Requirements		
Writing I	WRT 101	3
Technical Communications	WRT 154	3
Am. National Government	POL 110	3
Am. State/Local Govt.	POL 111	3
Intro. Psychology I-II	PSY 100–101	6
Intro. Sociology	SOC 100	3
Business Math	BUS 51	3
Intro. Microeconomics	ECO 100	3
Bus. & Prof. Communication	SPE 120	3
Electives*		17–19
		47–49

Suggested Electives*

Police Comm. and Human Relations	AJS 210	(3)
Interviewing & Counseling**	AJS	(3)
Inst. & Field Correct. Services**	AJS	(3)
Intro. Social Welfare	SSE 133	(3)
Group Work	SSE 235	(3)
Studies Deviant Behavior**	PSY	(3)
Eval./Support of Drug User	SSE 217	(3)
Defensive Tactics	AJS 12	(2)
Survival	REC 118	(2)
Treatment Drug Abuser	SSE 218	(3)
Child Development	ECE 117	(3)
Custody Procedures**	AJS	(3)
Criminal Law II	AJS 272	(3)
Organized Crime Investigation	AJS 220	(3)
Crisis Intervention-Theory/Tech.	SSE 236	(3)

**These courses being developed.

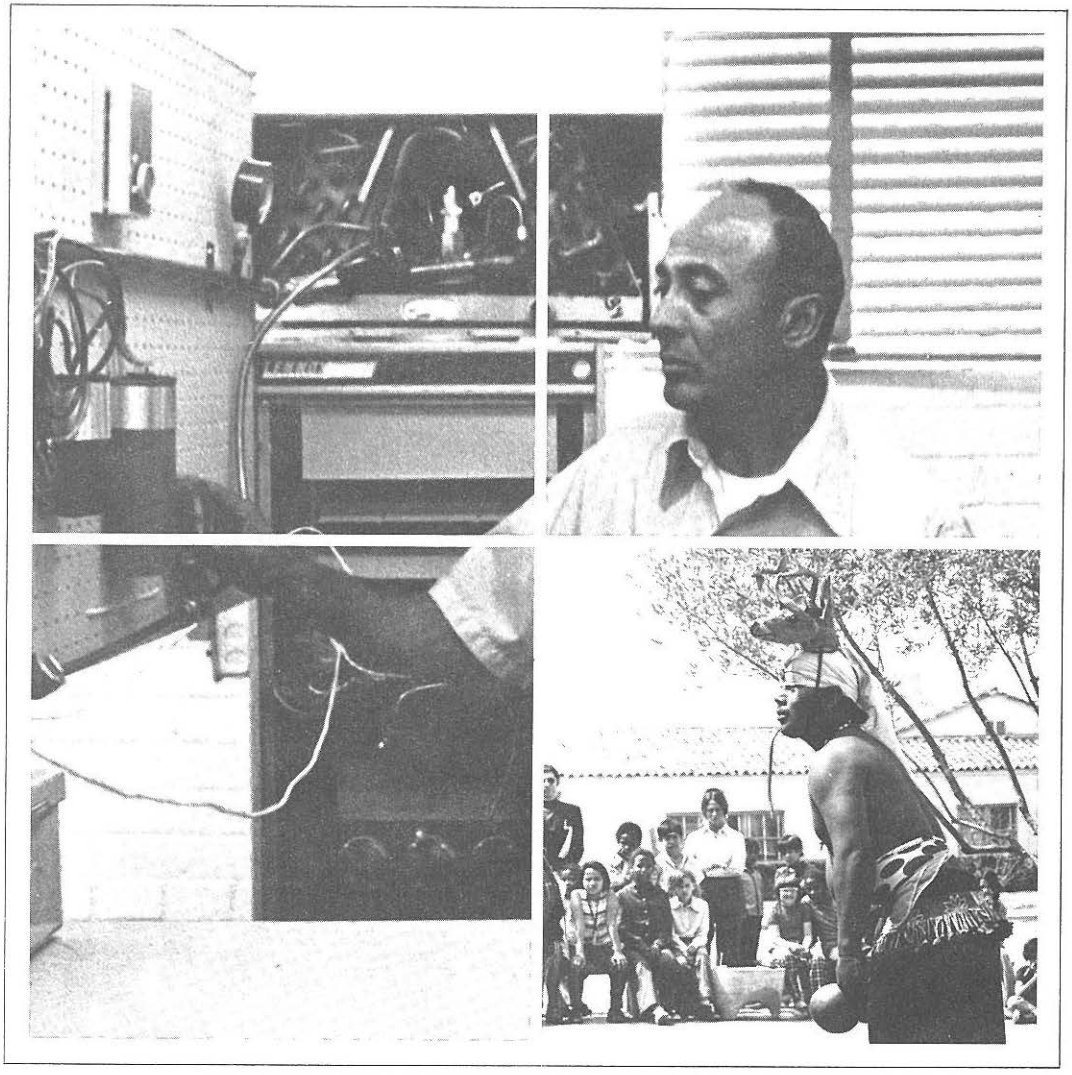
Corrections
Associate of Arts Degree
For Transfer

Required Courses (68–70)	First Semester	Cr. Hrs.
Writing I	WRT 101	3
Philosophy or Science*		3–4
College Algebra	MTH 150	3
Am. National Government	POL 110	3
Intro. Admin. of Justice	ASJ 101	3
Criminal Law I	AJS 172	3
		18–19
	Second Semester	
Writing II	WRT 102	3
Philosophy or Science*		3–4
Finite Math	MTH 170	3
Am. State/Local Govt.	POL 111	3
Fund. Crime & Delinquency	AJS 260	3
Criminal Law II	AJS 272	3
		18–19
	Third Semester	
Intro. to Microeconomics	ECO 100	3
Bus. & Prof. Communications	SPE 120	3
Stat. Methods in Eco. & Bus.	BUS 205	3
Intro. Public Admin.	PAD 105	3
Juvenile Justice Proced.	AJS 212	3
		18
	Fourth Semester	
Intro. to Macroeconomics	ECO 101	3
Intro. to Computers	CSC 100	3
Criminal Justice Proced.	AJS 216	3
Defensive Tactics or Survival	AJS 12 / REC 118	2
Social Science Elective**		3
		14

*Fulfilled by Introduction to Philosophy I (PHI 101) or Introduction to Logic (PHI 120) or PHI 120 and one semester of laboratory science; or by two semesters of laboratory science (astronomy, biology, botany, chemistry, geology, microbiology, physics, zoology).

**Students, by the end of the second year, should have completed a minimum of six credit hours in one of the following fields: Anthropology 110, 220, 210; Psychology 100, 101, 102, 103; Sociology 100, 201.

Note: Transfer students should follow the requirements of the four-year institution to which they plan to transfer.



Air Conditioning

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

Air Conditioning
Basic Certificate
For Direct Employment

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

Air Conditioning, Heating, Ventilation
Technical Certificate
For Direct Employment

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

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

Required (75)	First Semester	Cr. Hrs.
Air Conditioning Fundamentals	ACD 101	3
Air Conditioning Phase I	ACD 120	4
Technical Math I	MTH 110	3
Sheet Metal I	SML 110	4
Technical Drafting I	DFT 150	3
		17
	Second Semester	
Sheet Metal Pattern Layout I	SML 130	3
Air Conditioning Phase II	ACD 125	4
Technical Math II	MTH 120	3
Sheet Metal II	SML 120	4
Practical Communications	WRT 150	3
Combination Welding	WLD 110	3
		20
	Third Semester	
Air Conditioning Phase III	ACD 210	4
Human Relations	MAN 110	3
Technical Physics I	PHY 101	3
Sheet Metal Pattern Layout II	SML 135	3
Technical Communications	WRT 154	3
Estimating I	ACD 250	3
		19
	Fourth Semester	
Air Conditioning Phase IV	ACD 220	4
Sheet Metal Pattern Layout III	SML 210	3
Architectural Sheet Metal	SML 220	3
Estimating II	ACD 260	3
Technical Physics II	PHY 102	3
Elective in Humanities, Psychol., Sociology or Philosophy		3
		19

Allied Health

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

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

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

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

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

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

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

Admission Policies:

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

Admission Procedure:

1. Application packets may be obtained from the registrar's office at each campus in the district for the following allied health programs:

Downtown Campus

Allied Health Service Programs — Beginning Level
- Nursing Assistants/Patient-Care Attendants
- Homemaker/Home Health Aides
- Unit Clerks
- R. N. Refresher

Nursing Assistant
Practical Nursing

West Campus

Dental Programs
- Dental Assisting
- Dental Laboratory Technology (proposed)

Emergency Medical Technology
Associate Degree Nursing
Operating Room Technology
Ophthalmic Technology
- Optical Laboratory Technician
- Ophthalmic Dispensing

Radiologic (X-ray) Technology
Respirant Therapy

2. Completed applications (including high school and college transcripts) must be received by the District Office of Allied Health by the application deadline for the next entering class. Applications received later than the application deadline date will not be evaluated.
3. All applicants will be notified by mail of pre-entrance testing and interviews, when appropriate (refer to the program section of the catalog for specific requirements).
4. By the "Selections Date" in each application period, the selections committee will notify each applicant of:
   - Acceptance to the program,
   - Placement as an alternate, OR
   - Rejection.
5. An accepted applicant is required to submit within two-weeks of the acceptance notice, a letter of intent to enroll in the program. No deposit is required. Alternates will be placed as vacancies occur up to, and including, the entering date.

Health Core Curriculum:

A core curriculum operates in the Health Sciences Division providing a foundation of study and supportive-elective study to students pursuing a career in the health care industry. Two courses are offered in the core: Introduction to Health Care (HCA 54) and Independent Studies in Health Sciences (HCA 99). Course descriptions may be found under Health Sciences.

Applied Art and Design

This program provides an academic opportunity for development in various career areas including commercial art, commercial photography, functional and interior design. There is considerable opportunity for students to select courses related to particular career interests.

Applied Art and Design
Core Curriculum
For All Applied Art and Design Options

Suggested Course Sequence

Required Courses (15)		Cr. Hrs.
Basic Design	ART 100	3
Color and Design	ART 115	3
Drawing I or Photography I	ART 110 or 140*	3
Writing I or Practical Communications	WRT 101 or 150*	3
Human Relations in Bus. & Ind.	MAN 110	3
		15

Additional courses required for completion of advanced certificate or degree options in Applied Art and Design are listed on succeeding pages.

*Commercial Photography Option – Commercial Photography I
All others take Drawing I.

**Interior Design Associate of Arts Degree take WRT 101.

Commercial Art
Basic Certificate

Required Courses (15)		Cr. Hrs.
Basic Design	ART 100	3
Drawing I	ART 110	3
Commercial Graphics	DES 211	3
Communigraphics I	MET 50	3
Practical Communications	WRT 150	3
		15

Commercial Art Option
Advanced Certificate

Required Courses (30)		Cr. Hrs.
Core Curriculum – Applied Art & Design		15
Commercial Graphics	DES 211	3
Communigraphics I	MET 50	3
Advertising Layout and Design	MKT 127	3
Industrial Graphics or Drawing II	DES 111 or ART 210	3
Photography I or Printmaking or Offset Printing	ART 140 or 212 or GRC 70	3
		30

Commercial Photography
Basic Certificate

Required Courses (15)		Cr. Hrs.
Basic Design	ART 100	3
Photography I	ART 140	3
Photography II	ART 141	3
Commercial Photography	ART 143	3
Practical Communications	WRT 150	3
		15

Commercial Photography
Advanced Certificate

Required Courses (30)		Cr. Hrs.
Core Curriculum – Applied Art & Design		15
Photography II	ART 141	3
Commercial Photography	ART 143	3
Offset Printing or Advertising Layout and Design	GRC 70 or MKT 127	3
Communigraphics I	MET 50	3
Cinematography I	MET 53	3
		30

Functional Design
Basic Certificate

Required Courses (15)		Cr. Hrs.
Basic Design	ART 100	3
Industrial Graphics	DES 111	3
Functional Design I	DES 150	3
Functional Design II	DES 250	3
Practical Communications	WRT 150	3
		15

Functional Design
Advanced Certificate

Required Courses (30)		Cr. Hrs.
Core Curriculum – Applied Art & Design		15
Industrial Graphics	DES 111	3
Functional Design I	DES 150	3
Functional Design II	DES 250	3
Technical Drafting I or Construction Drafting I	DFT 150 or 110	3
Communigraphics I or Interior Design I or Light Structures	MET 50 or DES 156 or DES 151	3
		30

Interior Design
Basic Certificate

Required Courses (15)		Cr. Hrs.
Home Furnishings	DES 155	3
Interior Design I	DES 156	3
Interior Design II	DES 255	3
Interior Design III	DES 256	3
Practical Communications	WRT 150	3
		15

Interior Design
Advanced Certificate

Required Courses (30)		Cr. Hrs.
Core Curriculum – Applied Art & Design		15
Home Furnishings	DES 155	3
Interior Design I	DES 156	3
Interior Design II	DES 255	3
Interior Design III	DES 256	3
Construction Drafting I	DFT 110	3
		30

Interior Design
Associate of Arts Degree

Required Courses (60–62)		Cr. Hrs.
Advanced Certificate Curriculum		30
Drawing I or		
Photography I	ART 110 or 140	3
Functional Design I	DES 150	3
Small Business Management	MAN 124	3
Landscape Gardening	GTC 90	3
Industrial Graphics or		
Functional Design II	DES 111 or 250	3
Intro. to Oral Communication	SPE 102	3
Writing II	WRT 102	3
Humanities Electives		6–8
Social Science Elective		3
		60–62

Humanities Electives

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

Apprenticeship/Industrial

Pima Community College in conjunction with apprentice and industrial groups offers trade courses which are generally designed and structured specifically for apprenticeship students who are employed in a trade and enrolled for lecture courses related to the trade.

Arts and Crafts

Students are provided an opportunity to develop proficiency in at least one medium and a background in several media. Art electives and supportive courses should be selected according to the major emphasis of the program. The 100 level courses should be taken as early as possible in the program.

Associate of Arts Degree

Required Courses (62)		Cr. Hrs.
Basic Design	ART 100	3
Drawing I	ART 110	3
Photography I	ART 140	3
Art and Culture I or II	ART 130 or 131	3
Functional Design I	DES 150	3
Ceramics I or	ART 160	
Metal Work or	ART 170	
Weaving or	ART 180	
Leatherwork	ART 190	3
Art Electives	ART	12
		30

General Education Requirements:		
Writing I-II	WRT 101–102	6
Social Science Elective		3
Humanities I or II	HUM 110 or 111	4
Science Elective	ESC or LSC	4
Business or Technology Elective		3
Electives in program of interest		12
		32

Automotive Technology

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

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

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

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

Automotive Engine Repair and Rebuilding
Basic Certificate
For Direct Employment

Required Courses		Cr. Hrs.
Internal Combustion Engines	AUT 120	4
Auto Engine Service Repair	AUT 122	4
Engine Tune-up	AUT 125	4
Human Relations	MAN 110	3
		15

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

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

Power Transmission
Basic Certificate
For Direct Employment

Required Courses		Cr. Hrs.
Automatic Transmissions I-II	AUT 132–133	8
Drive Line	AUT 136	4
Human Relations	MAN 110	3
		15

Suspension and Brakes
Basic Certificate
For Direct Employment

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

Automotive Mechanics
Technical Certificate
For Direct Employment

Required Courses (53)	First Semester	Cr. Hrs.
Internal Combustion Engines	AUT 120	4
Automotive Electricity I	AUT 128	3
Automatic Transmissions I	AUT 132	4
Technical Math I*	MTH 110	3
		14
	Second Semester	
Auto Engine Service Repair	AUT 122	4
Automotive Electricity II	AUT 129	3
Automatic Transmissions II	AUT 133	4
Technical Physics I	PHY 101	3
		14
	Third Semester	
Engine Tune-up	AUT 125	4
Automotive Chassis	AUT 138	4
Practical Communications	WRT 150	3
Human Relations	MAN 110	3
		14
	Fourth Semester	
Drive Line	AUT 136	4
Automotive Brakes	AUT 140	4
Automotive Air Conditioning	AUT 142	3
		11

*This course requires prerequisites or a placement test.

Automotive Technology
Associate in Applied Science Degree
For Direct Employment

Required Courses (65)	First Semester	Cr. Hrs.
Internal Combustion Engines	AUT 120	4
Automotive Electricity I	AUT 128	3
Automatic Transmission I	AUT 132	4
Technical Math I*	MTH 110	3
Technical Physics I	PHY 101	3
		17
	Second Semester	
Auto Engine Service Repair or Engine Tune-up	AUT 122 AUT 125	4
Automotive Electricity II	AUT 119	3
Automatic Transmission II	AUT 133	4
Technical Math II	MTH 120	3
Technical Physics II	PHY 102	3
		17
	Third Semester	
Auto Engine Service Repair or Engine Tune-up	AUT 122 AUT 125	4
Automotive Chassis	AUT 138	4
Human Relations	MAN 110	3
Practical Communications	WRT 150	3
Intro. to Psychology I	PSY 100	3
		17
	Fourth Semester	
Automotive Brakes	AUT 140	4
Automotive Air Conditioning	AUT 142	3
Drive Line	AUT 136	4
Technical Communications	WRT 154	3
		14

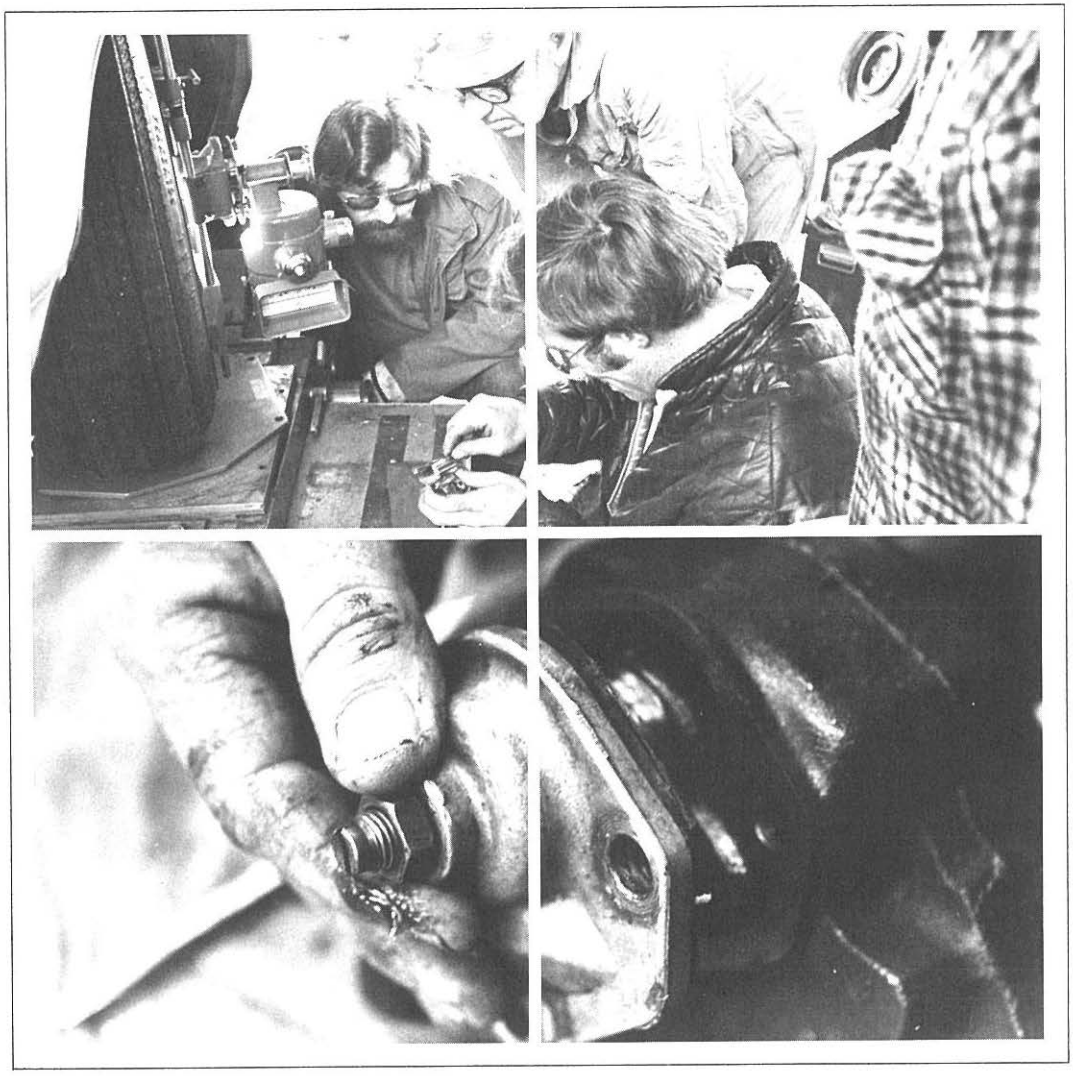
*This course requires prerequisites or a placement test.

Automotive Technology
Associate of Science Degree
For Transfer

Required Courses (69)		Cr. Hrs.
Internal Combustion Engines	AUT 120	4
Automotive Electricity I-II	AUT 128–129	6
Automatic Transmission I-II	AUT 132–133	8
Auto Engine Service Repair	AUT 122	4
Engine Tune-up	AUT 125	4
Automotive Chassis	AUT 138	4
Drive Line	AUT 136	4
Automotive Brakes	AUT 140	4
		31
		38

General education requirements

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



Aviation Mechanics

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

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

Airframe and Powerplant Mechanics
Basic Certificate
For Direct Employment

Required Courses		Cr. Hrs.
Airframe Mechanics	AVM 220	6
Powerplant Mechanics	AVM 230	5
Combination Welding	WLD 110	3
Technical Math I	MTH 110	3
Human Relations	MAN 110	3
		20

Bilingual

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

Some 50 courses are being offered under the Bilingual Program in areas of drama, pre-school education, machine shop, welding, electronics, folklore dances, business, home economics, physical education, humanities, history, English as a second language (ESL), reading, literature, Spanish and others. The courses are listed in the individual program sections of the catalog. Courses in the Bilingual Program, with the exception of those prefixed SPA or ESL, offer students the advantages of receiving credit for the course, plus additional credit in Spanish at no extra charge.

Credit in Spanish is at the 50 or 100 level as it is assumed that if a student can pursue a bilingual course taught totally in Spanish, he has a knowledge of the language. The student may, therefore, obtain 1 to 8 units of additional Spanish credit; but such credit is not awarded automatically and must be petitioned for before the end of the course. The actual number of credits will be determined by the instructor teaching the course in cooperation with the Spanish faculty based upon the evaluation of the student's written and oral work.

Credits are divided as follows: a) 4 credits in Spanish 50 and/or 4 credits in Spanish totaling 4 or 8 credits. Please note that credit in Spanish 50 and 55 (Conversational Spanish I and II) is not transferable; b) if a student is in a university transfer program, 2 credits each for Spanish 101a and 101b may be awarded. Credits for the latter may be considered separately or together, totaling 2 or 4 credits respectively. The same is applicable to Spanish 102a and 102b. c) Reading 52 (Bilingual Reading) will receive 1 elective credit in Spanish. d) if a bilingual course consists of 1 unit, the Spanish credit is 1 unit of elective credit.

This additional credit cannot be awarded if credit in Spanish 101, 102, 50 and 55 had been earned previously through enrollment in these classes.

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

Unos 50 (treinta) cursos se ofrecen en el Programa Bilingüe, tales como educación pre-escolar, electrónica, máquinas y herramientas, soldadura, bailes folklóricos, drama, negocios, economía doméstica, educación física, humanidades, historia, inglés como segundo idioma, lectura, literatura y español. Los cursos se encuentran en el catálogo bajo las secciones de programas respectivos.

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

El crédito en español es otorgado al nivel 50 y 100, porque se considera que si el estudiante puede seguir una materia del Programa Bilingüe impartida en español, este estudiante ya tiene conocimiento de dicho idioma. Por consiguiente, este estudiante puede obtener de 1 a 8 unidades de crédito adicional en español, pero tal crédito no se otorga automáticamente y es necesario hacer petición, antes de terminar el curso, para recibir este crédito adicional. El número exacto será determinado por la facultad de español en cooperación con el instructor del curso dependiendo en la evaluación del trabajo oral y escrito del estudiante.

Las unidades se dividen así: a) 4 unidades en Español 50 y/o 4 unidades en Español 55 sumando a 4 o 8 unidades. Favor de tomar en cuenta que las unidades en Español 50 y 55 no son transferibles. b) Si el estudiante se encuentra en un programa transferible a la universidad se puede otorgar crédito en Español 101a, 101b, 102a o 102b si no se ha recibido ya este crédito por medio de inscripción en estos cursos. Las unidades de los cursos 101a y 101b pueden ser consideradas separadas o conjuntamente par un total de 2 o 4 unidades respectivamente. Este mismo concepto se aplicará a materias 102a y 102b. d) Si el curso Bilingüe consiste de una unidad de crédito, el crédito en español será una unidad elegible.

Este crédito adicional no se otorgará si crédito se ha recibido anteriormente en Español 101, 102, 50 o 55 por medio de inscripción en estos cursos.

Biology

Associate of Science Degree
For Transfer

Suggested Courses (60–65)	First Semester	Cr. Hrs.
Writing I	WRT 101	3
General Chemistry I	CHM 120	4
Mathematics*	(a) MTH 130 or (b) MTH 160	3–5
Social Science Elective or Language		3–4
Physical Education	PED	1
		14–17
	Second Semester	
Writing II	WRT 102	3
General Chemistry II	CHM 121	4
Organismic Biology I	LSC 205	4
Mathematics	(a) MTH 150 or (b) MTH 180	3
Social Science Elective or Language		3–4
		17–18
	Third Semester	
Organic Chemistry I	CHM 240	4
Organismic Biology II	LSC 206	4
Mathematics	(a) MTH 175 or (b) MTH 185	3
Humanities Elective or Language		3–4
Physical Education	PED	1
		15–16
	Fourth Semester	
Organic Chemistry II	CHM 241	4
General Genetics	LSC 210	4
Mathematics	(a) MTH 210 or (b) MTH 215	3–4
Humanities Electives or Language		3–4
		14–16

*Choose sequence (a) or (b) in Mathematics
Other choices in this program are CSC 140, PHY 121 or 131, and PHY 122 or 132.

There are various options available for attaining a B.A. or B.S. degree in biological sciences. Students should consult the catalog of the institution to which they wish to transfer.

Business Administration Transfer

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

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

Students taking their first two years of work at a community college should take only those courses in business and economics that are offered as freshman or sophomore level courses at any of the three Arizona universities. These lower division courses are numbered 1 through 99 at the University of Arizona, and 1 through 299 at Arizona State University and Northern Arizona University. The introductory course in business law will be accepted as an exception to this policy. A maximum of 30 hours of business and economics courses will be accepted from community colleges toward a bachelor's degree in business administration.

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

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

Pre-Professional Courses:	**30 credit hours**
Accounting	6
Economics	6
Quantitative Analysis & Statistics	6
Business Law	3
Lower-Division Business Electives	9

General Education: 34–42 credit hours*

English	Humanities
Mathematics	Physical Education
Science	Social Sciences

*Contingent upon the university of your choice.

Associate of Science Degree For Transfer

These requirements must be completed in the proper sequence in the freshman and sophomore years. Students must adhere to course prerequisites as indicated in the catalog.

Required Courses	**First Semester**	**Cr. Hrs.**
Writing I	WRT 101	3
Philosophy or Science*		3–4
Am. Nat. Govt.	POL 110	3
Social Science Elective**		3
Bus. & Prof. Comm.	SPE 120	3
Physical Ed. Elective	PED	1
		16–17
	Second Semester	
Writing II	WRT 102	3
Philosophy or Science*		3–4
Finite Math.	MTH 170	3
Social Science Elective**		3
Introduction to Computers	CSC 100	3
Physical Ed. Elective	PED	1
		16–17
	Third Semester	
Prin. of Accounting I	ACC 101	3
Intro. to Microeconomics	ECO 100	3
Soc. Science, Humanities or Foreign Lang. Elective***		3–4
Topics in Calculus	MTH 175	3
Stat. Methods I	BUS 205	3
		15–16
	Fourth Semester	
Prin. of Accounting II	ACC 102	3
Intro. to Macroeconomics	ECO 101	3
Soc. Science, Humanities or Foreign Lang. Elective***		3–4
Soc. Science Elective or CSC 160 (Cobol)****		3
Stat. Methods II	BUS 206	3
		15–16

*Fulfilled by PHI 120 and 101; or by PHI 120 and 3–4 units of laboratory science; or by two semesters of laboratory science: AST 101–102; LSC 103–104; CHM 101–102; ESC 101–102; ESC 103–104; LSC 207–208; PHY 121–122.

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

***Fulfilled by completion of 8–9 units selected from the Social Sciences, Humanities, or Foreign Languages.

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

Note: It is the student's responsibility to obtain approval of his or her program regularly from an advisor at the university of his choice. The AS degree program meets requirements of the University of Arizona.

Chemistry

Associate of Science Degree
For Transfer

Suggested Courses (60–65)	First Semester	Cr. Hrs.
Writing I	WRT 101	3
General Chemistry I	CHM 120	4
College Algebra & Trigonometry	MTH 160	5
Social Science Elective*		3
Physical Education	PED	1
		16
	Second Semester	
Writing II	WRT 102	3
General Chemistry II	CHM 121	4
Anal. Geometry & Calculus I	MTH 180	3
Introductory Physics I	PHY 121 or 131	4
Fortran IV Programming or Social Science Elective	CSC 140	3–4
		17–18
	Third Semester	
Organic Chemistry I	CHM 240	4
Anal. Geometry & Calculus	MTH 185	3
Introductory Physics II	PHY 122 or 132	4
Humanities Elective		3–4
Physical Education	PED	1
		15–16
	Fourth Semester	
Organic Chemistry II	CHM 241	4
Anal. Geometry & Calculus III	MTH 215	4
Humanities Elective		3–4
Elementary German I or Social Science Elective	GER 110	4 or 3
		14–16

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

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

Computer Science

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

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

Key Punch Operator
Basic Certificate
For Direct Employment

Required Courses		Cr. Hrs.
Key Punch	CSC 50	3
Intro. to Business	BUS 100	3
Writing I	WRT 101	3
Reading Improvement	REA 100 series	4
Business Math or	BUS 51	
Algebra II	MTH 130	3
Job Entry Procedures	CSC 195	1
		17

Key Punch Operator
Technical Certificate
For Direct Employment

Required Courses (32–33)	First Semester	Cr. Hrs.
Basic Certificate Requirements		17
	Second Semester	
Advanced Key Punch	CSC 55	3
Survey Data Processing or	CSC 105	
Intro. to Computers	CSC 100	3
Reading (if required) or Electives		3–4
Work Stand./Job Attitudes	CSC 196	1
Calculating Machines	OED 121	2
Co-Op Training or	CSC 299	
Elective		3
		15–16

Control Technician
Technical Certificate
For Direct Employment

Required Courses (32–33)	First Semester	Cr. Hrs.
Intro. to Computers	CSC 100	3
Prin. of Accounting I	ACC 101	3
Typing I or	OED 111	
Key Punch	CSC 50	3
Reading Improvement	REA 100 series	4
Business Math	BUS 51	3
		16
	Second Semester	
Writing I	WRT 101	3
Prin. of Accounting II	ACC 102	3
Job Entry Procedures	CSC 195	1
Work Stand./Job Attitudes	CSC 196	1
Calculating Machines	OED 121	2
Reading (if required) or Elective		3–4
Key Punch or	CSC 50	
Advanced Key Punch or	CSC 55	
Intro. to Business or	BUS 100	
Co-Op Training	CSC 299	3
		16–17

Computer Operator
Technical Certificate
For Direct Employment

Required Courses (35–37)	First Semester	Cr. Hrs.
Intro. to Computers	CSC 100	3
Computer Operations	CSC 150	3
Algebra II or	MTH 130	
Business Math	BUS 51	3
Reading Improvement	REA 100 series	4
Intro. to Business	BUS 100	3
Key Punch for Prog. & Oper.	CSC 197	1
Job Entry Procedures	CSC 195	1
		18
	Second Semester	
Prin. of Accounting I	ACC 101	3
Systems Oper. & Procedures	CSC 155	3
Writing I	WRT 101	3
Reading (if required) or Elective		3–4
Computer Science Elective	CSC	3
Work Stand./Job Attitudes	CSC 196	1
Data Processing Projects I	CSC 198	1–2
		17–19

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

Required Courses (62–65)	First Semester	Cr. Hrs.
Intro. to Computers	CSC 100	3
Prin. of Accounting I	ACC 101	3
Writing I	WRT 101	3
Reading Improvement	REA 100 series	4
Algebra II or	MTH 130	
College Algebra	MTH 150	3
Key Punch for Prog. & Oper.	CSC 197	1
		17
	Second Semester	
COBOL Programming	CSC 160	3
Prin. of Accounting II	ACC 102	3
Writing II	WRT 102	3
Reading (if required) or Elective		3–4
College Algebra or	MTH 150	
FORTRAN IV Programming	CSC 140	3
		15–16

	Third Semester		
Basic Assembly Lang.	CSC 270		3
Systems Analysis	CSC 280		3
Adv. COBOL/File Mgmt.	CSC 260		4
Select two of the following:			
Statistical Methods I	BUS 205	(3)	
Finite Math	MTH 170	(3)	
Co-op Training	CSC 299	(3)	
Intro. to Microeconomics	ECO 100	(3)	
Cost Accounting	ACC 203	(3)	
			16
	Fourth Semester		
Job Entry Procedures	CSC 195		1
Work Stand./Job Attitudes	CSC 196		1
System Design	CSC 281		3
MACRO-10 Assembly Lang. or	CSC 274		
Data Processing Projects II	CSC 298		3–4
Select two courses following sequence of third semester			6–7
Statistical Methods II	BUS 206	(3)	
Topics in Calculus	MTH 175	(3)	
Co-op Training	CSC 299	(3)	
Intro. to Macroeconomics	ECO 101	(3)	
Phil.-Hum. Elective		(3–4)	
			14–16

Systems Programmer
Advanced Certificate
For Direct Employment

Required Courses (29)	**First Semester**	**Cr. Hrs.**
FORTRAN IV Programming	CSC 140	3
Operating Systems	CSC 296	3
Anal. Geometry/Calculus I	MTH 180	3
		9
	Second Semester	
Systems Programming Theory	CSC 290	3
MACRO-10 Assembly Lang.	CSC 274	4
Anal. Geometry/Calculus II	MTH 185	3
		10
	Third Semester	
Teleprocessing Concepts	CSC 294	3
Anal. Geometry/Calculus III	MTH 215	4
Data Processing Projects II	CSC 298	3
		10

NOTE: Students majoring in computer science with non-business emphasis may substitute courses with approval of computer science coordinator and/or business division director.

Dental Assisting Technology

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

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

Acceptance Into Program:

- Completion of college and allied health program acceptance requirements.
- One year of mathematics (including algebra).
- One semester of biology or zoology.
- One semester of typing.
- Receipt of placement examination results for Dental Assisting applicants.
- Personal interview with the Program Coordinator.

General Requirements:

- Total credit: 34 credit hours.

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

Restrictions:

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

Minimal Grade Achievement:

"C" level.

Advanced Certificate
For Direct Employment

Required Courses (34)	**First Semester**	**Lec.**	**Lab**	**Cr. Hrs.**
Writing I	WRT 101	3	+ 0	3
Intro. Dental Assisting	DAT 61	3	+ 0	3
Dental Assisting I	DAT 62	1	+ 6	3
Oral Radiography	DAT 63	2	+ 3	3
Dental Materials	DAT 64	2	+ 3	3
Clinical Procedures I	DAT 65	0	+ 8	3
				18
	Second Semester			
Writing II	WRT 102	3	+ 0	3
Dental Assisting II	DAT 66	1	+ 3	2
Dental Assisting III	DAT 67	3	+ 6	5
Clinical Procedures II	DAT 68	0	+ 16	6
				16

Dental Laboratory Technology

The total program consists of four semesters on campus which includes 1,492 clock hours of laboratory practice. Graduates will be qualified for an Associate of Applied Science Degree with a major in Dental Laboratory Technology. After three years of practical experience, the graduate may apply for the practical examination as determined by the American Dental Association, Council on Dental Education.

Acceptance Into Program:

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

General Requirements:

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

Restrictions:

- Correspondence study: maximum 6 semester hours.
- Extension/transfer: maximum 32 semester hours, including 1, above.

Minimal Grade Achievement:

"C" level.

At the time of the printing of this catalog the Dental Laboratory Technology Program had not been approved by the State Board of Directors for Community Colleges of Arizona. Upon the determination of the approval of this program by the State Board the students will be notified.

Advanced Certificate For Direct Employment

Required Courses (68)	First Semester	Lec.	Lab	Cr. Hrs.
Chemistry	CHM 101	3	+ 3	4
Physics	PHY 121	4	+ 3	4
Dental Morphology	DLT 101	2	+ 3	3
Non-Metallic Dental Materials	DLT 102	3	+ 0	3
Complete Dentures	DLT 103	0	+ 12	4
				18
	Second Semester			
Writing I	COM 1	3	+ 0	3
Chemistry	CHM 102	3	+ 3	4
Physics	PHY 122	4	+ 3	4
Dental Laboratory I	DLT 104	2	+ 3	3
Partial Denture Reconstruction	DLT 105	0	+ 12	4
				18
	Third Semester			
Writing II	COM 11	3	+ 0	3
Small Business Mgmt.	MAN 52	3	+ 0	3
Dental Laboratory II	DLT 201	2	+ 3	3
Dental Metallurgy I	DLT 202	3	+ 0	3
Fixed Bridge Work	DLT 203	0	+ 13	4
				16
	Fourth Semester			
Management	MAN 54	3	+ 0	3
Liberal Arts Elective		4	+ 0	4
Dental Laboratory III	DLT 204	2	+ 3	3
Dental Metallurgy II	DLT 205	2	+ 6	4
Ceramics	DLT 206	0	+ 6	2

Drafting Technology

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

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

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

Architectural Drafting
Basic Certificate
For Direct Employment

Required Courses			Cr. Hrs.
Construction Drafting I-II	DFT 110, 120		6
Nine credit hours selected from the following:			9
Construction Determinants I-II	DFT 114–115	(6)	
Bldg. Utilities & Site Work	DFT 123	(3)	
Construction Drafting III-IV	DFT 130, 140	(6)	
Independent Study	DFT 149	(3)	
Technical Drafting I	DFT 150	(3)	
Construction Surveying	ENG 110	(3)	
Blueprint Reading	GTC 99	(3)	
			15

Architectural Drafting
Technical Certificate
For Direct Employment

Required Courses (30)	First Semester	Cr. Hrs.
Construction Drafting I	DFT 110	3
Elective Skill Course*		3
Math Elective	MTH	3
Writing I or	WRT 101	
Practical Communications	WRT 150	3
Elective		3
		15
	Second Semester	
Construction Drafting II	DFT 120	3
Elective Skill Courses*		6
Math Elective	MTH	3
Writing II or	WRT 102	
Technical Communications	WRT 154	3
		15

*Elective skill courses to be selected from the following:

Construction Determinants I-II	DFT 114–115	(6)
Bldg. Utilities & Site Work	DFT 123	(3)
Construction Drafting III-IV	DFT 130, 140	(6)
Independent Study	DFT 149	(3)
Construction Surveying	ENG 110	(3)
Architectural Drafting		

Architectural Drafting
Associate of Applied Science Degree
For Direct Employment

Required Courses (63)	First Semester	Cr. Hrs.
Construction Drafting I	DFT 110	3
Construction Determinants I	DFT 114	3
Math Elective	MTH	3
Writing I or	WRT 101	
Practical Communications	WRT 150	3
Art Elective	ART	4
Physical Ed. Elective	PED	1
		17
	Second Semester	
Construction Drafting II	DFT 120	3
Construction Determinants II	DFT 115	3
Math Elective	MTH	3
Writing II or	WRT 102	
Technical Communications	WRT 154	3
Art Elective	ART	3
Physical Ed. Elective	PED	1
		16
	Third Semester	
Construction Drafting III	DFT 130	3
Bldg. Utilities and Site Work	DFT 123	3
Science Elective		3
Math Elective	MTH	3
Electives		3
		15
	Fourth Semester	
Construction Drafting IV	DFT 140	3
Construction Surveying	ENG 110	3
Science Elective		3
Electives		6
		15

Suggested Electives:

Humanities I-II	HUM 110–111	(4–4)
Intro. to Western Civil. I	HIS 101	(3)
Functional Design I	ART 150	(3)
Art History	ART 231	(1–4)
Art Studio Courses	ART	(3)
Blueprint Reading	GTC 99	(3)
Building Materials	GTC 60	(3)
Woodshop I	GTC 92	(3)
Speech	SPE	(3)
Technical Drafting I	DFT 150	(3)
Computer Science	CSC	(3)
Mathematics	MTH	(3)
Physics	PHY	(3–4)
Psychology	PSY	(3)
Sociology	SOC	(3)

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

	First Semester	**Cr. Hrs.**
Technical Drawing I	DFT 150	3
Practical Communication or Writing I	WRT 150 or 101	3
Math Elective	MTH 60	3
Manufacturing Processes I	MAC 240	3
Human Relations	MAN 58	3
		15
	Second Semester	
Technical Drawing II	DFT 151	3
Technical Communication or Writing II	WRT 154 or 102	3
Math Elective	MTH 110	3
Manufacturing Processes II	MAC 245	3
Introduction to Electronics	ETR 1	4
		16
	Third Semester	
Technical Drawing III	DFT 152	3
Industrial Graphics	ART 111	3
Technical Physics I	PHY 101	3
Electronic Drafting	DFT 154	3
Humanities Electives or Machine Shop or Functional Design		3–4
		15–16
	Fourth Semester	
Tool Design (for Mechanical Drafting Option) or Electro-Mech. Design (for Elec.-Mech. Drafting Option)	DFT 153 or DFT 155	3–4
Engineering Graphics	ENG 120	3
Introduction to Computers	CSC 100	3
Humanities Electives or Machine Shop or Function Design		3–4
Elective		2–3
		14–17

Humanities Electives:
ART 130–131
MUS 151
LIT 141–142
HUM 110–111
PHI 101–102
DRA 240–241

Drama

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

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

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

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

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

Drama Core Curriculum
For All Drama Options
Suggested Sequence

Required Courses (40)	**First Semester**	**Cr. Hrs.**
Introduction to Acting I	DRA 105	3
Stagecraft I	DRA 120	3
Writing I	WRT 101	3
Social Science Elective		3
		12
	Second Semester	
Introduction to Acting II	DRA 106	3
Stagecraft II	DRA 121	3
Writing II	WRT 102	3
Social Science Elective		3
		12
	Third Semester	
Make-up	DRA 115	2
Theatre History I	DRA 240	3
Humanities I*	HUM 1	4
		9
	Fourth Semester	
Theatre History II	DRA 241	3
Humanities II*	HUM 111	4
		7

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

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

Drama Production Option
Associate of Arts Degree
For Transfer

Required Courses (61–64)	First Semester	Cr. Hrs.
Core Curriculum — Drama		(40)
Voice and Diction	SPE 115	2
Electives		1–3
		5–6
	Second Semester	
Oral Interpretation	SPE 136	3
Electives		1–2
		5–6
	Third Semester	
Intermediate Acting I	DRA 248	3
Laboratory Science		4
		7
	Fourth Semester	
Intermediate Acting II	DRA 249	3
Laboratory Science		4
		7

Drama Education Option
Associate of Arts Degree
For Transfer

Required Courses (64–67)	First Semester	Cr. Hrs.
Core Curriculum — Drama		(40)
Electives		3–5
	Second Semester	
Teaching Minor		3
Electives		1–2
		5–6
	Third Semester	
Intermediate Acting I	DRA 248	3
Lab Science or Science for Teachers		4
		7
	Fourth Semester	
Intermediate Acting II	DRA 249	3
Lab Science or Science for Teachers		4
Teaching Minor		3
		10

Drama Theory Option
Associate of Arts Degree
For Transfer

Required Courses (64)	First Semester	Cr. Hrs.
Core Curriculum — Drama		(40)
Foreign Language		4
	Second Semester	
Foreign Language		4
	Third Semester	
Foreign Language		4
Lab Science		4
		8
	Fourth Semester	
Foreign Language		4
Lab Science		4
		8

Applied Drama
Associate of Applied Arts Degree
For Transfer*

Required Courses (62–69)	First Semester	Cr. Hrs.
Core Curriculum — Drama		(40)
Voice and Diction	SPE 115	2
Electives		1–3
		5–6
	Second Semester	
Oral Interpretation	SPE 136	3
Electives		0–2
		3–5
	Third Semester	
Intermediate Acting I	DRA 248	3
Ethnic Theater	DRA 109	3
Electives		0–2
		6–8
	Fourth Semester	
Intermediate Acting II	DRA 249	3
Theatre Practice	DRA 051	3
Electives		2–4
		8–10

SUGGESTED ELECTIVES FOR ALL PROGRAM OPTIONS:
DRA 201, DRA 109, Speech, Music, Art, Dance, Fencing, Literature — and in addition for Applied Arts in Theatre Degree: Drafting, Welding, or Electronics.

Early Childhood Education

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

Career preparation sections are designed to give students an opportunity to prepare themselves in Early Childhood Education and Teacher Aide/Assistant.

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

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

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

Teacher Aide/Assistant
Basic Certificate
For Direct Employment

Required Courses		Cr. Hrs.
Human Development or	ECE 107	
Child Development or	ECE 117	
Effective Parenthood	ECE 114	3
Lit. for Young Child	ECE 108	3
Pre-School Ed.	ECE 118	3
Tech. for Teacher Aide	ECE 126	3
Math & Science/Young Child	ECE 124	3
Music/Young Child	ECE 112	3
ECE Practicum	ECE 240	3
Language Arts/Young Child	ECE 110	3
Electives		6
		30

Teacher-Director
Associate of Arts Degree
For Direct Employment

Required Courses		Cr. Hrs.
Human Development or	ECE 107	
Child Development or	ECE 117	
Effective Parenthood	ECE 114	3
Lit. for Young Child	ECE 108	3
Lang. Arts/Young Child	ECE 110	3
Understanding Young Child	ECE 116	3
Music/Young Child	ECE 112	3
Pre-School Ed.	ECE 118	3
Supr. and Admin.	ECE 120	3
Community Resources	ECE 122	3
Math & Science/Young Child	ECE 124	3
Tech. for Teacher Aides	ECE 126	3
Planning for Play	ECE 128	3
Current Trends in ECE	ECE 130	3
ECE Practicum	ECE 240	6
General Education Requirements*		18
		60

*Select 18 hours from the following:

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

Early Childhood Education
Associate of Arts Degree
For Transfer

General Education Requirements		Cr. Hrs.
Writing I-II	WRT 101–102	6
Intro. to Psychology I	PSY 100	3
Intro. to Sociology	SOC 100	3
Biology for Ed. Majors	LSC 112	3
Concepts in Chemistry	CHM 130	3
Geology for Ed. Majors	ESC 112	3
Physics for Ed. Majors	PHY 112	3
Humanities I-II	HUM 110–111	8
Am. State/Local Govt.	POL 111	3
Health	HED	3
Child Development or	ECE 117	
Human Development	ECE 107	3
		41

Note: All transfer programs take the above general education requirements. For required courses in a major field, see specific programs. Major field courses are to be added to this program.

Early Childhood Education
Associate of Arts Degree
For Transfer to Education College

Required Courses		Cr. Hrs.
General Education Requirement Program		41
Anthropology	ANT	3
Math for Ed. Majors	MTH 140	3
Geography	ESC 101, 102, or 103	4
Electives (see advisor)		14
		65

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

Required Courses		Cr. Hrs.
General Education Requirement Program		41
Anthropology	ANT	3
Understanding Young Child	ECE 116	3
Pre-School Ed.	ECE 118	3
Nutrition	HEC 114	3
Electives (see advisor)		12
		65

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

Required Courses		Cr. Hrs.
General Education Requirement Program		41
Understanding Young Child	ECE 116	3
Perception	ART 100	4
Pre-School Ed.	ECE 118	3
Economics	ECO	3
Intro. Oral Communication	SPE 102	3
Electives (see advisor)		8
		65

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.

Elementary or Special Education
For Transfer

Suggested Courses (60)		Cr. Hrs.
Biology for Ed. Majors	LSC 112	3
Concepts in Chemistry	CHM 130	3
Geology for Ed. Majors	ESC 112	3
Physics for Ed. Majors	PHY 112	3
Child Development	ECE 117	3
Intro. Health Science	HED 136	3
Math for Ed. Majors I-II	MTH 140, 145	6
		24

General Education Requirements:

Humanities	HUM	8
Writing	WRT	6
Social Sciences*		12
Electives		10
		36

*Including two of the following:

Intro. Cultural Anthro.	ANT 110	(3)
Cultural Geography	ESC 103	(4)
Intro. to Psychology I	PSY 100	(3)
Intro. to Sociology	SOC 100	(3)

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 110) and American State and Local Government (POL 111) as electives before transfer to fulfill the state certification requirements for elementary or special education majors.

Secondary Education
For Transfer

General Education Requirements	Cr. Hrs.
Writing	6
Humanities	8
Math or Science	8
Social Sciences*	9
Electives	29
	60

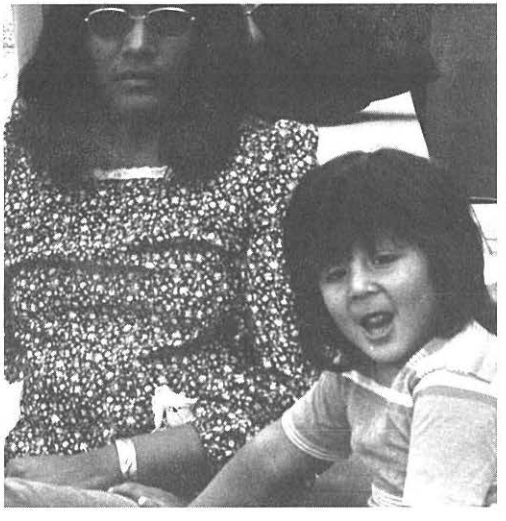
*Including either:

Intro. Cultural Anthro.	ANT 110	(3)
Intro. to Psychology I	PSY 100	(3)
Intro. to Sociology	SOC 100	(3)

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 110) and American State and Local Government (POL 111) as electives before transfer to fulfill the state certification requirement for secondary education teachers.



Electronics Technology

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

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

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

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

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

General Electronics*
Basic Certificate
For Direct Employment

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

Television Repair*
Basic Certificate
For Direct Employment

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

Consumer Electronics*
Basic Certificate
For Dircet Employment

Suggested Course Sequence		Cr. Hrs.
TV Repair Program		24
Home Enter. Equip. Repair	ETR 150	6
		30

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

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

Suggested Course Sequence (49–57)	First Semester	Cr. Hrs.
Electronics Math I or	MTH 115	
Algebra II	MTH 130	3
Fundamentals of Electronics	ETR 100	6
Technical Drafting I	DFT 150	3
		12
	Second Semester	**Cr. Hrs.**
Electronics Math II or	MTH 125	
College Algebra	MTH 150	3
Digital Electronics	ETR 110	3
Electronics Circuits/Systems I	ETR 105	6
Practical Communications or	WRT 150	
Writing I	WRT 101	3
		15

Television Repair*
Basic Certificate
For Direct Employment

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

Consumer Electronics*
Basic Certificate
For Direct Employment

Suggested Course Sequence		Cr. Hrs.
TV Repair Program		24
Home Enter. Equip. Repair	ETR 150	6
		30

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

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

Suggested Course Sequence (49–57)	First Semester	Cr. Hrs.
Electronics Math I or Algebra II	MTH 115 MTH 130	3
Fundamentals of Electronics	ETR 100	6
Technical Drafting I	DFT 150	3
		12
	Second Semester	**Cr. Hrs.**
Electronics Math II or College Algebra	MTH 125 MTH 150	3
Digital Electronics	ETR 110	3
Electronics Circuits/Systems I	ETR 105	6
Practical Communications or Writing I	WRT 150 WRT 101	3
		15
	Third Semester	**Cr. Hrs.**
Electronics Math III or College Algebra	MTH 205 MTH 155	3
Technical Communications or Writing II	WRT 154 WRT 102	3
Option 1*		3–6
		9–12
	Fourth Semester	**Cr. Hrs.**
Electronic Drafting	DFT 154	3
Human Relations or Technical Communications	MAN 58 WRT 254	3
Option 2*		6
Option 3* (For Consumer Electronics Only)		5
		12–18

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

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

Digital Electronics
Option 1 ETR 250 (3)
Option 2 ETR 255 (6)

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

Industrial Electronics
Option 1 ETR 230 (6)
Option 2 ETR 275 (6)

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

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

Suggested Course Sequence (61–72)	First Semester	Cr. Hrs.
Electronics Math I or Algebra II	MTH 115 MTH 130	3
Fundamentals of Electronics	ETR 100	6
Technical Drafting I	DFT 150	3
Practical Communications or Writing I	WRT 150 WRT 101	3
Electives		0–3
		15–18
	Second Semester	
Electronics Math II or College Algebra	MTH 125 MTH 150	3
Electronics Circuits/Systems I	ETR 105	6
Digital Electronics	ETR 110	3
Technical Communications or Writing II	WRT 154 WRT 102	3
Electives		0–3
		15–18
	Third Semester	
Electronics Math III or Trigonometry	MTH 205 MTH 155	3
Human Relations or Technical Communications	MAN WRT 254	3
Technical Physics I	PHY 101	3
Elective		3
Option 1*		6
		18
	Fourth Semester	
Electronic Drafting	DFT 154	3
Technical Physics II	PHY 102	3
Elective		0–3
Option 2		6
Option 3 (For Consumer Electronics Only)		6
		12–15

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

Communications Electronics Options
Option 1 ETR 230 (6)
Option 2 ETR 235 (6)

Digital Electronics Options
Option 1 ETR 250 (3)
Option 2 ETR 255 (6)

Consumer Electronics Options
Option 1 ETR 140 (6)
Option 2 ETR 145 (6)
Option 3 ETR 150 (6)

Industrial Electronics Options
Option 1 ETR 230 (6)
Option 2 ETR 275 (6)

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

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

Suggested Course Sequence (61–75)	First Semester	Cr. Hrs.
Algebra II	MTH 130	3
Fundamentals of Electronics	ETR 100	6
Technical Drafting I	DFT 150	3
Writing I	WRT 101	3
Electives*		0–3
		15–18
	Second Semester	
College Algebra	MTH 150	3
Digital Electronics	ETR 110	3
Electronics Circuits/Systems I	ETR 105	6
Writing II	WRT 102	3
Electives*		0–3
		15–18
	Third Semester	
Technical Communications	WRT 254	3
Trigonometry	MTH 155	3
Electives*		6–7
Option 1**		4–6
		16–19
	Fourth Semester	
Electronic Drafting	DFT 154	3
Electives*		3–6
Option 2**		6
Option 3** (For Consumer Electronics Only)		6
		15–18

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

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

Communications Electronics Options

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

Digital Electronics Options

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

Consumer Electronics Options

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

Industrial Electronics Options

Option 1	ETR 230	(6)
Option 2	ETR 275	(6)

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

Emergency Medical Technology

This curriculum provides the theoretical and practical preparation to qualify graduates for immediate employment as Emergency Medical Technicians in hospital, civil and private agencies.

This 114 clock hour, six credit hour program covers all techniques of emergency medical care currently considered within the responsibilities of the Emergency Medical Technician, as well as all operational aspects of the job which the technician will be expected to perform. Students successfully completing this program will graduate with a certificate from Pima Community College as well as an Emergency Medical Technicians Certificate from the Arizona Department of Public Safety.

Acceptance Into Program:

- Completion of college and allied health acceptance requirements.
- Personal interview and recommendation by program coordinator.
- Approval by selections committee.

General Requirements:

- Total credit: 6 credit hours.
- Work in residence: minimum 6 credit hours of major (EMT) courses to be completed in residence or challenged. (Approval required by program coordinator.)

Restrictions:

None.

Minimal Grade Achievement:

"C" level.

Certificate
For Direct Employment

			Lec.	Lab	Cr. Hrs.
Emergency Medical Tech.	EMT	51	4	+ 2	6

Engineering

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

Associate of Science
For Transfer

Suggested Courses (61–66)	**First Semester**	**Cr. Hrs.**
Writing I	WRT 101	3
Anal. Geometry & Calculus I	MTH 180	3
Fortran IV Programming	CSC 140	3
General Chemistry I	CHM 120	4
Physical Ed Elective	PED	1
Option 1		3–4
		17–18
	Second Semester	
Writing II	WRT 102	3
Anal. Geometry & Calculus II	MTH 185	3
General Chemistry II	CHM 121	3–4
Introductory Physics I*	PHY 131	4
Physical Ed. Elective	PED	1
Option 2		3–4
		17–19
	Third Semester	
Anal. Geometry & Calculus III	MTH 215	4
Eng. Mechanics-Statics	ENG 210	3
Introductory Physics II**	PHY 132	4
Option 3		3–4
		14–15
	Fourth Semester	
Linear Alg. & Differential Eq.	MTH 220	4
Mechanics of Materials***	ENG 230	3
Option 4		3–4
Option 5		3–4
		13–15

Aerospace or Mechanical Engineering			**Cr. Hrs.**
Option 1	Engineering Graphics	ENG 120	3
Option 2	Elective		3–4
Option 3	Elective		3–4
Option 4	Basic Circuits & Electronics	ENG 240	4
Option 5	Elective		3–4

Agricultural Engineering

Option 1	Engineering Graphics	ENG 120	3
Option 2	Elective		3–4
Option 3	Elective		3–4
Option 4	Organismic Biology I	LSC 205	4
Option 5	Elective		3–4

Chemical Engineering

Option 1	Elective		3–4
Option 2	Elective		3–4
Option 3	Organic Chemistry I	CHM 240	4
Option 4	Organic Chemistry II	CHM 241	4
Option 5	Elective		3–4

Civil Engineering

Option 1	Engineering Graphics	ENG 120	3
Option 2	Elementary Surveying	ENG 130	3
Option 3	Elective		3–4
Option 4	Engineering Mech.-Dynamics	ENG 220	3
Option 5	Elective or ENG 240		3–4

Electrical Engineering

Option 1	Fundamentals of Electronics	ETR 001	4
*	Introductory Mechanics	PHY 210	4
**	Intro. Electricity & Magnetism	PHY 216	4
Option 2	Elective		3–4
Option 3	Basic Circuits & Electronics	ENG 240	4
***	Intro. to Waves and Heat	PHY 221	4
Option 4	Elective		3–4
Option 5	Elective		3–4

Geological or Mining Engineering

Option 1	Engineering Graphics	ENG 120	3
Option 2	Elementary Surveying	ENG 130	3
Option 3	Physical Geology	ESC 151	4
Option 4	Elective		3–4
Option 5	Elective		3–4

Metallurgical Engineering		**Cr. Hrs.**
Option 1	Elective	3–4
Option 2	Elective	3–4
Option 3	Elective	3–4
Option 4	Elective	3–4
Option 5	Elective	3–4

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

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

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

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

Humanities Electives

All the courses numbered 100 or higher in Humanities, Literature, Philosophy and Religion.
ART 130, ART 131, ART 230, ART 231, DRA 240, DRA 241, MUS 212, SPA 220, SPE 136.

Social Science Electives

All the courses numbered 100 or higher in Anthropology, Economics, History, Political Science, Psychology and Sociology.
ESE 101, ESC 102, ESC 103, SPE 110, SPE 130.

English as a Second Language (ESL)

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

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

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

Exploratory Studies

The Exploratory Program consists of 60 hours of study. Of these 60 hours, 30 hours must consist of a minimum of 6 hours in each of the following instructional areas:

Business, Fine and Applied Arts, General Studies, Human Resources, and Math, Science and Electronics. The remaining 30 hours are electives. This allows the student the opportunity to explore in all instructional areas as well as to develop a specific program.

The student should be aware that if an A.A. degree in Exploratory Studies is obtained and he/she intends to transfer to a four-year institution, it may be necessary to take additional courses to complete requirements for a baccalaureate degree.

Finance

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

Banking
Associate of Applied Science Degree
For Direct Employment

Required Courses (60)	First Semester	Cr. Hrs.
Prin. of Bank Operations	FIN 102	3
Prin. of Accounting I	ACC 101	3
Human Relations	MAN 110	3
Writing I	WRT 101	3
Elective*		3
		15
	Second Semester	
Intro. to Microeconomics	ECO 100	3
Prin. of Accounting II	ACC 102	3
Supervision	MAN 112	3
Business Law I	BUS 200	3
Elective*		3
		15
	Third Semester	
Intro. to Macroeconomics	ECO 101	3
Bank Management	FIN 203	3
Banking Electives	FIN	6
Elective*		3
		15
	Fourth Semester	
Money and Banking	FIN 210	3
Banking Electives	FIN	6
Electives*		6
		15

*Electives should include 3 credits of math.

Credit Union
Associate of Applied Science Degree
For Direct Employment

Required Courses (60)	First Semester	Cr. Hrs.
Credit Union Basics	FIN 131	3
Prin. of Accounting I	ACC 101	3
Human Relations	MAN 110	3
Business Math	BUS 51	3
Elective		3
		15
	Second Semester	
Credit Union Mgmt.	FIN 132	3
Prin. of Accounting II	ACC 102	3
Supervision	MAN 112	3
Writing I	WRT 101	3
Elective		3
		15
	Third Semester	
Credit Union Operations*		3
Business Law I	BUS 200	3
Intro. to Microeconomics	ECO 100	3
Installment Credit	FIN 208	3
Elective		3
		15
	Fourth Semester	
Credit Union Adv. Mgmt.*		3
Intro. to Macroeconomics	ECO 101	3
Advertising	MKT 125	3
Electives		6
		15

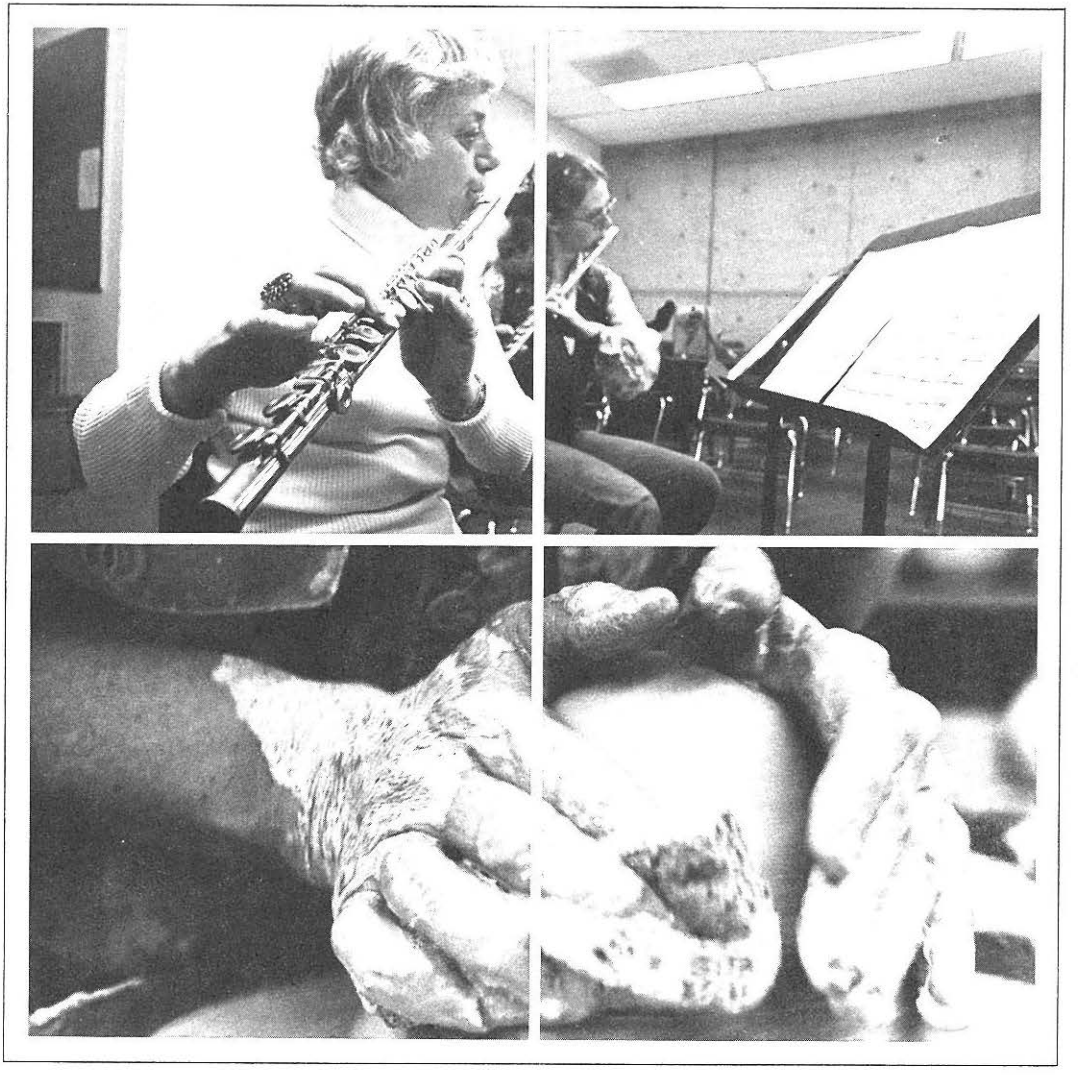
*These courses are in the process of being developed.

Savings and Loan
Basic Certificate
For Direct Employment

Required Courses		Cr. Hrs.
Savings & Loan Business Oper.	FIN 101	3
Insurance of Savings Accounts	FIN 104	3
Teller Operations	FIN 106	3
Human Relations	MAN 110	3
		12

Savings and Loan
Advanced Certificate
For Direct Employment

Required Courses		Cr. Hrs.
Savings & Loan Business Oper.	FIN 101	3
Insurance of Savings Accounts	FIN 104	3
Real Estate Principles	RLS 65	4
Home Mortgage Lending	FIN 205	3
Financial Institutions	FIN 212	3
Human Relations	MAN 110	3
Supervision	MAN 112	3
Writing I	WRT 101	3
Finance Electives	FIN	6
		31



Savings and Loan
Associate of Applied Science Degree
For Direct Employment

Required Courses (61)	First Semester	Cr. Hrs.
Savings & Loan Business Oper.	FIN 101	3
Prin. of Accounting I	ACC 101	3
Human Relations	MAN 110	3
Writing I	WRT 101	3
Elective*		3
		15
	Second Semester	
Intro. to Microeconomics	ECO 100	3
Prin. of Accounting II	ACC 102	3
Supervision	MAN 112	3
Real Estate Principles	RLS 65	4
Elective*		3
		16
	Third Semester	
Intro. to Macroeconomics	ECO 101	3
Real Estate Law	RLS 67	3
Home Mortgage Lending	FIN 205	3
Installment Credit	FIN 208	3
Insurance of Savings Accts.	FIN 104	3
		15
	Fourth Semester	
Real Estate Appraisals	RLS 68	3
Insurance	FIN 216	3
Anal. Financial Statements	FIN 217	3
Financial Institutions	FIN 212	3
Elective*		3
		15

*Electives should include 3 credit hours of math.

Fine Arts

This program provides four semesters of study appropriate for the student who plans to transfer to a four-year institution or professional school in the areas of painting, sculpture, printmaking, crafts, art history, photography, commercial art or industrial design. Students should consult the catalog of the institution to which they plan to transfer for assistance in selecting some courses.

Associate of Arts Degree
For Transfer

Required Courses (61–65)	First Semester	Cr. Hrs.
Basic Design	ART 100	3
Art and Culture I	ART 130	3
Writing I	WRT 101	3
Science or Math Elective		3–4
Elective*		2–3
		14–16
	Second Semester	
Drawing I	ART 110	3
Art and Culture II	ART 131	3
Color and Design	ART 115	3
Writing II	WRT 102	3
Science or Math Elective		3–4
		15–16
	Third Semester	
Drawing II or Life Drawing	ART 210 ART 213	3
3-D Design	ART 120	3
Humanities I	HUM 110	4
Social Science Elective		3
Elective*		2–3
		15–16
	Fourth Semester	
Art Elective	ART	3
Art Electives	ART 200 level	6
Humanities II	HUM 111	4
Social Science Elective		3
		16

*Consult the four-year program requirements of the institution to which you plan to transfer.

Fire Science

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

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

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

Associate of Applied Science Degree
For Direct Employment

Required Courses			**Cr. Hrs.**
Basic Training — Firefighters*	FSC	50	3
Introduction to Fire Science	FSC	51	3
Fundamentals of Fire Prevention	FSC	52	3
Hazardous Materials I	FSC	53	3
Advanced Fire Prevention	FSC	54	3
Hazardous Materials II	FSC	61	3
Hydraulics & Fire Suppression	FSC	62	3
Fire Apparatus & Equipment	FSC	63	3
Fire Protection Systems	FSC	64	3
Bldg. Constr. for Fire Protec.	FSC	65	3
Fire Suppression Tactics	FSC	66	3
Rescue Practices and First Aid	FSC	67	3
			36
General Education Requirements:			
Writing I	WRT	101	3
Technical Communications	WRT	154	3
Algebra I (or more advanced)	MTH	70	3
Technical Physics	PHY	101	3
Electives**			15
			63

*The Basic Training — Firefighters is for Tucson Fire Department recruits. Others will substitute equivalent experience.

**Electives to be selected from:
Automotive Technology
Business
Computer Science
Cooperative Education
Emergency Medical Technology
Engineering
Federal Lands of Fire Control
History
Humanities
Literature
Mathematics
Philosophy
Physics
Political Science
Sociology
Spanish
Speech
Writing

Geology

Associate of Science Degree
For Transfer

Suggested Courses (60–64)	First Semester	Cr. Hrs.
Writing I	WRT 101	3
Introductory Geology I	ESC 120	4
College Algebra	MTH 150	3
Social Science Elective*		3
Physical Education	PED	1
		14
	Second Semester	
Writing II	WRT 102	3
Introductory Geology II	ESC 121	4
Trigonometry	MTH 155	2
General Chemistry I	CHM 120	4
Social Science Elective		4
		16
	Third Semester	
Engineering Graphics	ENG 120	3
General Chemistry II	CHM 121	4
Introductory Physics I	PHY 121	4
Humanities Elective		3–4
Physical Education	PED	1
		15–16
	Fourth Semester	
Elementary Surveying	ENG 130	3
Introductory Physics II	PHY 122	4
Fortran IV Programming	CSC 140	3
Humanities Elective		3–4
Earth Science	ESC	4
		17–18

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

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

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

Home Economics

The Home Economics area offers students a broad exposure to family and consumer sciences and specific opportunities in the following areas:
- Career preparation
- Transfer to a four-year institution
- Personal development for home and family living

Career or Occupational Programs:

Career preparation sections are designed to give students an opportunity to prepare themselves in:
- Alteration Specialist
- Professional Specialist
- Fashion Design
- Interior Design Technician

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 for actual requirements. Programs also should be arranged with an advisor. Transfer programs offer study in the following areas:
- Merchandising and Fashion Promotion
- Interior Design
- Food, Nutrition, Dietetics
- Consumer Service in Food
- Food Service Management
- General Home Economics
- Home Economics Education
- Home Economics and Journalism
- Home Economics Extension

Child Development and Early Childhood Education programs are in a separate section of the catalog.

Alteration Specialist
Basic Certificate
For Direct Employment

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

Professional Seamstress
Associate of Applied Science Degree
For Direct Employment

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

Fashion Design
Associate of Arts Degree
For Dircet Employment

Required Courses (64)		Cr. Hrs.
Clothing Construction I-II	HEC 111–211	6
Alteration & Designing	HEC 112	3
History of Fashion	HEC 122	3
Applied Dress Design	HEC 121	3
Fashion Design I-II	HEC 141–241	6
Clothing Selection	HEC 131	3
Textiles	HEC 126	3
Psychology of Dress	HEC 132	3
Today's World	HEC 137	3
Co-op Training	HEC 299	6
		39

General Education Requirements:

Perception	ART 100	4
Retailing	MKT 139	3
Advertising	MKT 125	3
Human Relations	MAN 110	3
Writing I or	WRT 101	
Practical Communications	WRT 150	3
Electives*		9
		25

*Suggested Electives:

Stagecraft/Production I	DRA 120	(3)
Graphics I	ART 110	(3)
Fund. of Chemistry I	CHM 110	(4)
Intro. to Psychology I	PSY 100	(3)
Human Development	ECE 107	(3)

Interior Design Technician
Associate of Arts Degree
For Direct Employment

Required Courses (64)		Cr. Hrs.
Home Furnishings	ART 155	3
Interior Design I-III	HEC 115, 215, 216	9
Textiles	HEC 126	3
Co-op Training	HEC 299	6
Today's World	HEC 137	3
		24

General Education Requirements:

Perception	ART 100	4
Writing I or	WRT 101	
Practical Communications	WRT 150	3
Construction Drafting I	DFT 110	3
Human Relations or	MAN	
Small Business Mgmt.	MAN	3
Suggested Electives*		18
Other Electives		9
		40

*Suggested Electives

Intro. to Psychology I	PSY 100	(3)
Human Development	ECE 107	(3)
Functional Design I	ART 150	(3)
Functional Design II	ART 250	(3)
Technical Drafting	DFT 150	(3)
Advertising	MKT	(3)

Interior Design Technician
Associate of Arts Degree
For Transfer

Required Core Courses		Cr. Hrs.
Home Ec. Profession	HEC 128	3
Child Development or	ECE 117	
Human Development	ECE 107	3
Nutrition	HEC 114	3
Home Management	HEC 117	3
		12

General Education Requirements:

Perception	ART 100	4
Writing I-II	WRT 101–102	6
Intro. Oral Communication	SPE 102	3
Humanities I-II	HUM 110–111	8
Intro. to Chemistry I	CHM 101	4
Intro. to Sociology	SOC 100	3
Intro. to Psychology I	PSY 100	3
General Biology I	LSC 103	4
Physical Ed. Elective	PED	1
		48

Note: All transfer programs take the above general education and core requirements. For required courses in a major field, see specific programs.

Clothing and Textiles
Merchandising and Fashion Promotion
Interior Design
Associate of Arts Degree
For Transfer

Required Courses		Cr. Hrs.
Core and General Education Requirements		48
Clothing Construction I-II	HEC 111–211	6
Clothing Selection	HEC 131	3
Textiles	HEC 126	3
Home Furnishings	ART 155	3
Electives		1–3
		64–66

Food, Nutrition, Dietetics
Consumer Service in Food
Food Service Management
Associate of Arts Degree
For Transfer

Required Courses		Cr. Hrs.
Core and General Education Requirements		48
Food Study	HEC 113	3
Professional Food Services	HEC 214	3
Textiles	HEC 126	3
Meal Management	HEC 213	3
Electives		4–6
		64–66

General Home Economics
Home Economics Education
Home Economics and Journalism
Home Economics Extension
Associate of Arts Degree
For Transfer

Required Courses		Cr. Hrs.
Core and General Education Requirements		48
Food Study	HEC 113	3
Clothing Construction I	HEC 111	3
Meal Management	HEC 213	3
Textiles	HEC 126	3
Electives		4–6
		64–66

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

Associate of Arts Degree
For Transfer

Required Courses (68)	First Semester	Cr. Hrs.
Expl. Mass Media	JRN 110	3
Writing I	WRT 101	3
Foreign Language		4
Social Science Elective		3
Elective*		3
		16
	Second Semester	
Basic Reporting	JRN 101	3
Writing II	WRT 102	3
Foreign Language		4
Humanities I	HUM 110	4
Social Science Elective		3
		17
	Third Semester	
Advanced Reporting	JRN 201	3
Foreign Language		4
Science or Math Elective		4
Social Science Elective		3
Elective**		3
		17
	Fourth Semester	
Social Science Elective		3
Foreign Language		4
Science or Math Elective		4
Humanities II	HUM 111	4
Elective**		3
		18

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

**Suggested electives:

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

Liberal Arts and Sciences

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 Relations 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 languages (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. Students, however, are urged to follow the requirements of the college or university to which they hope to transfer.

Liberal Arts (General)
Associate of Arts Degree
For Transfer

Required Courses		Cr. Hrs.
Writing I-II	WRT 101–102	6
Humanities* I-II	HUM 110–111	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.

Library Technician

This program prepares students for entry positions as Library Technicians in school libraries, public libraries, college and special libraries. It is designed for persons who wish to enter the library field at a level below the fifth year professional. Graduates are eligible for employment in the public services or the technical services department of any library. The program also prepares students for the Junior Federal Assistant examination with the Federal Civil Service. Options include an advanced certificate program requiring 30 credit hours and an Associate of Applied Science degree program requiring 62 credit hours.

Advanced Certificate
For Direct Employment

Required Courses (30)	First Semester	Cr. Hrs.
Library Resources	LMT 50	3
Library Public Services	LMT 52	3
Typing II	OED 112	3
Key Punch	CSC 50	3
Instructional Media Tech. 1	MET 81	3
		15
	Second Semester	
Library Serv. for Children*		4
Library Tech. Services	LMT 51	4
World Processing	OED 122	4
Implications of Media Tech.	MET 84	3
		15

*This course is in the process of being developed.

Associate of Applied Science Degree
For Direct Employment

Suggested Semester Sequence (65)	First Semester	Cr. Hrs.
Library Public Service	LMT 52	3
Writing I	WRT 101	3
Typing II	OED 112	3
Humanities Elective	HUM	4
Social or Physical Science Elective		3
		16
	Second Semester	
Writing II	WRT 102	3
Key Punch	CSC 50	3
Library Resources	LMT 50	3
Intro. to Computers	CSC 100	3
Word Processing	OED 122	4
		16
	Third Semester	
Library Tech. Services	LMT 51	4
Instructional Media Tech. I	MET 81	3
Office Procedures	OED 257	3
Humanities Elective	HUM	4
Social Science Elective		3
		17
	Fourth Semester	
Library Serv. for Children*		4
Co-op Library Training	LMT 299	3
Implications of Media Tech.	MET 84	3
Science Elective		3
Social Science Elective		3
		16

*This course is in the process of being developed.

Machine Tool Technology

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

Machine Shop Fundamentals
Basic Certificate
For Direct Employment

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

Machinist's Standard, Certificate
Technical Certificate
For Direct Employment

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

Machine Tool Technology
Associate of Applied Science Degree
For Direct Employment

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

Third Semester		
Jig & Fixture Design I	MAC 210	4
Quality Control	MAC 230	3
Human Relations	MAN 110	3
Technical Physics I	PHY 101	3
Manufacturing Processes I	MAC 240	3
Humanities, Psychology, Sociology or Philosophy Elective		3
		19
Fourth Semester		
Jig & Fixture Design II	MAC 220	4
Intro. to Numerical Control	MAC 250	3
Combination Welding	WLD 110	3
Technical Physics II	PHY 102	3
Manufacturing Processes II	MAC 245	3
		16

Management

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

Management
Basic Certificate
For Direct Employment

Required Courses		**Cr. Hrs.**
Principles of Accounting I	ACC 101	3
Business Mathematics	BUS 51	3
Business Law I	BUS 200	3
Human Relations	MAN 110	3
Supervision	MAN 112	3
		15

Management
Advanced Certificate
For Direct Employment

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

Associate of Applied Science in Management
For Direct Employment

Required Courses: (60–65)	First Semester	Cr. Hrs.
Prin. of Accounting I	ACC 101	3
Intro. to Business	BUS 100	3
Mathematics of Business	BUS 51	3
Human Relations	MAN 110	3
Business English	OED 154	3
		15
	Second Semester	**Cr. Hrs.**
Prin. of Accounting II	ACC 102	3
Supervision	MAN 112	3
Small Business Mgmt.	MAN 124	3
General Education Elective*		3–4
Public Speaking	SPE 110	3
		15–16
	Third Semester	
Cost Accounting	ACC 203	3
Business Law I	BUS 200	3
Personnel Management	MAN 276	3
Intro. to Microeconomics	ECO 100	3
General Education Elective*		3–4
		15–16
	Fourth Semester	
Business Elective**		3–4
Labor/Mgmt. Relations	MAN 278	3
Business Org. & Mgmt.	MAN 280	3
General Education Elective*		3–4
General Education Elective*		3–4
		15–18

*General Education Requirements
Select four of the following courses or other available general education courses with the consent and written approval of the subject area coordinator and/or division director:

**Business Elective

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

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

Marketing

The Marketing curriculum offers students a variety of courses to develop an understanding of how business serves people through new product development, physical distribution, communication and consumer research. Students may begin preparation for careers in Advertising, Consumer Affairs, Industrial Marketing, International Marketing, Marketing Research, Product Management, Retail Management, Sales Management and Small Business Marketing.

Marketing
Basic Certificate
For Direct Employment

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

Marketing
Advanced Certificate
For Direct Employment

Required Courses (30)		Cr. Hrs.
Basic Certificate Requirements		15
Principles of Accounting II	ACC 102	3
Business Law II	BUS 201	3
Introduction to Business	BUS 100	3
Advertising	MKT 125	3
Consumer Behavior	MKT 127	3
		30

Associate of Applied Science in Marketing
For Direct Employment

Required Courses: (60–65)	First Semester	Cr. Hrs.
Principles of Accounting I	ACC 101	3
Introduction to Business	BUS 100	3
Mathematics of Business	BUS 51	3
Human Relations	MAN 110	3
Business English	OED 154	3
		15

	Second Semester	
Principles of Accounting II	ACC 102	3
	MKT*	3
	MKT*	3
General Education Elective**		3–4
Public Speaking	SPE 110	3
		15–16
	Third Semester	
Cost Accounting	ACC 203	3
Business Law I	BUS 200	3
	MKT*	3
Intro. to Microeconomics	ECO 100	3
General Education Elective**		3–4
		15–16
	Fourth Semester	
Business Elective***		3–4
	MKT*	3
	MKT*	3
General Education Elective**		3–4
General Education Elective**		3–4
		15–18

Required Marketing Courses*

Select five of the following:		Cr. Hrs.
Marketing	MKT 111	3
Salesmanship	MKT 113	3
Advertising	MKT 125	3
Advertising Layout & Design	MKT 127	3
Retailing	MKT 139	3
Consumer Behavior	MKT 141	3

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

General Education Requirements**

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

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

***Business Elective**

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

Mathematics

Mathematics
Associate of Arts Degree
For Transfer

Suggested Courses (60–64)	First Semester	Cr. Hrs.
Writing I	WRT 101	3
Anal. Geometry & Calculus I	MTH 180	3
Finite Mathematics	MTH 170	3
Elementary French I (or German)	FRE (or GER) 110	4
Social Science Elective*		3
		16
	Second Semester	
Writing II	WRT 102	3
Anal. Geometry & Calculus II	MTH 185	3
FORTRAN IV Programming	CSC 140	3
Elementary French II (or German)	FRE (or GER) 111	4
Social Science Elective		3
		16
	Third Semester	
Anal. Geometry & Calculus III	MTH 215	4
Introductory Physics I	PHY 131	4
Intermediate French I (or German)	FRE (or GER) 210	4
Humanities Elective		3–4
Physical Education	PED	1
		16–17
	Fourth Semester	
Linear Alg. & Diff. Equations	MTH 220	4
Introductory Physics II	PHY 132	4
Intermediate French II (or German)	FRE (or GER) 211	4
Humanities Elective		3–4
Physical Education	PED	1
		16–17

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

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

Media Technician

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

The program 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 as well as in the operation of a media production center or instructional media services center.

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

Basic Certificate
For Direct Employment

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

Associate of Applied Science Degree
For Direct Employment

Suggested Semester Sequence (64)		**Cr. Hrs.**
Communigraphics I	MET 50	3
Media Technology I	MET 81	3
Writing I	WRT 101	3
Library Public Services	LMT 52	3
Science or Math		4
		16
	Second Semester	
Cinematography I	MET 53	3
Media Technology II	MET 82	3
Writing II	WRT 102	3
Humanities I	HUM 110	4
Social Science Elective		3
		16
	Third Semester	
Repair and Maintenance	MET 70	3
Telecomm-TV Productions	MET 90	3
Intro. to Computers	CSC 100	3
Science or Math		4
Elective		3
		16
	Fourth Semester	
Implications of Media Tech.	MET 84	3
Co-op Training	MET 299	6
Art	ART	3
Elective		4
		16

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.

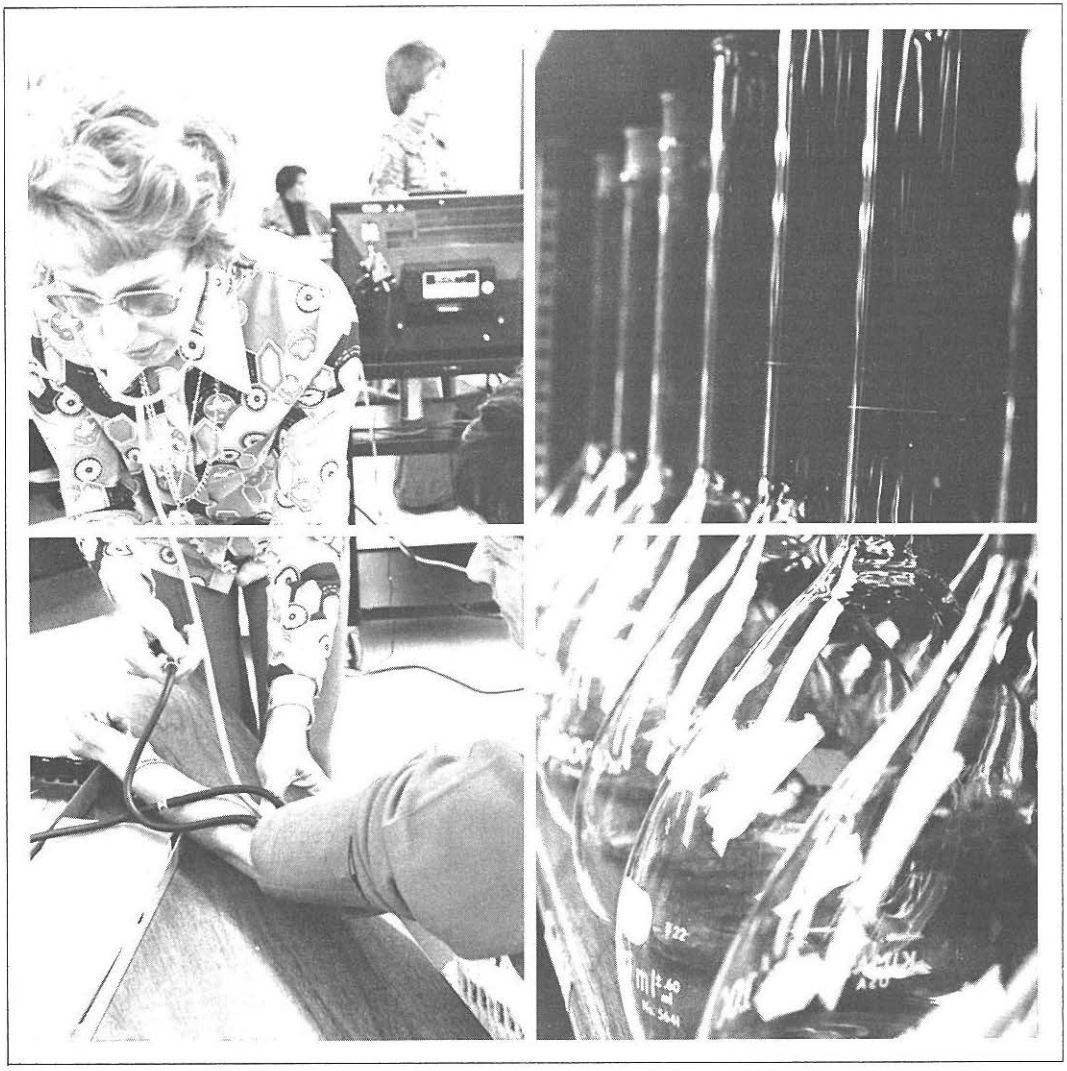
All Military Science courses are taught at the University of Arizona.

Music

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

Associate of Arts Degree For Transfer

Required Courses (64)	First Semester	Cr. Hrs.
Music Theory I	MUS 103	4
Band or	MUS 120	
Chorale	MUS 130	1
Applied Music/Private Instr.	MUS 145	1
Piano Class I	MUS 141	1
Writing	WRT 101	3
Science Elective		4
		14
	Second Semester	
Music Theory II	MUS 204	4
Band or	MUS 120	
Chorale	MUS 130	1
Applied Music/Private Instr.	MUS 145	1
Piano Class II	MUS 142	1
Writing II	WRT 102	3
Science Elective		4
Speech Elective	SPE	3
		17
	Third Semester	
Music Theory III	MUS 205	4
History of Lit. of Music I	MUS 201	3
Band or	MUS 120	
Chorale	MUS 130	1
Applied Music/Private Instr.	MUS 145	1
Applied Music (Piano)	MUS 145	1
Humanities I	HUM 110	4
Social Science Elective		3
		17
	Fourth Semester	
Music Theory IV	MUS 206	4
History & Lit. Music II	MUS 202	3
Band or	MUS 120	
Chorale	MUS 130	1
Applied Music/Private Instr.	MUS 145	1
Applied Music (Piano)	MUS 145	1
Humanities II	HUM 111	4
Elective		2
		16



Nursing Careers

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

Nursing Assistant

This curriculum provides the theoretical and practical preparation to qualify graduates for immediate employment as Nursing Assistants in hospitals and nursing homes. The graduate is prepared to give patient care under the direct supervision of a licensed nurse.

The program consists of one semester on campus in affiliated hospitals. As a part of the total nursing careers program, some of the course work can be applied towards further education in the nursing field. Students having satisfactorily completed this curriculum will graduate with a Nursing Assistant Certificate.

Acceptance Into Program:

- Completion of college and allied health programs acceptance requirements.
- Receipt of placement examination results in math and reading comprehension (minimum requirements of eighth grade level).
- Approval by selections committee.

General Requirements:

- Total credit: 12 credit hours:
- Work in residence: minimum 8 credit hours of major (NRS and HCA) courses to completed in residence.

Restrictions:

None.

Minimal Grade Achievement:

"C" level.

Basic Certificate
For Direct Employment

Required Courses (12)			Lec.	Lab	Cr. Hrs.
Prin. of Human Anatomy	LSC	50	3	+ 3	4
Intro. to Health Care	HCA	54	3	+ 0	3
Nursing Assistant	NRS	50	2	+ 9	5
					12

Note: Nursing Assistant graduates interested in preparing for the Practical Nurse or Associate Degree Nursing Programs should consult with his or her nursing advisor.

Practical Nurse

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

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

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

Acceptance Into Program:

- Completion of college and allied health programs acceptance requirements.
- Receipt of placement examination results in reading and math comprehension (minimum requirements at the 12th grade reading level and 70 percent in math test).
- Personal interview and recommendation by the program coordinator.
- Approval by selections committee.

General Requirements:

- Total credit: 45 credit hours.
- Work in residence: minimum 27 credit hours of major (NRS) courses to be completed in residence.

Restrictions:

- Correspondence study: maximum 3 credit hours.
- Extension study: maximum 19 credit hours (including correspondence study).

Minimal Grade Achievement:

"C" level.

Advanced Certificate
For Direct Employment

Required Courses (41)	First Semester	Lec.	Lab	Cr. Hrs.
Prin. of Human Anatomy	LSC 50	3	+ 3	4
Intro. to Health Care	HCA 54	3	+ 0	3
Writing I or	WRT 101	3	+ 0	
Practical Communications	WRT 150	3	+ 0	3
Nursing I	NRS 70	4	+ 12	8
				18
	Second Semester			
Intro. to Infectious Diseases	LSC 117	2	+ 0	2
Intro. to Psychology I	PSY 100	3	+ 0	3
Intro. to Sociology	SOC 100	3	+ 0	3
Nursing II	NRS 72	4	+ 15	9
				17
	Third Semester (10 weeks)			
Practical Nursing III	NRS 75	12	+ 24	10

Note: Upon completing the prerequisites (chemistry and evidence of 13th grade reading ability) and the first year supportive courses (Anatomy and Physiology I, II) of the Associate Degree program, a student is eligible to admission to the third semester of that program.

Nursing

NURSING — ADN (West Campus)

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

Acceptance Into Program:

- Completion of college and allied health programs acceptance requirements.
- One year of chemistry (within the last five years).
- Placement examination results in math and reading comprehension with minimum requirements of 13th grade level.
- Personal interview and recommended by the program coordinator.
- Approval by selections committee.

General Requirements:

- Total credit: 69 credit hours.
- Work in residence: minimum, 35 credit hours of major (NRS) courses to be completed in residence or transfer.

Restrictions:

- Correspondence study: maximum 6 credit hours.
- Extension study: maximum 34 credit hours (including correspondence study).

Minimal Grade Achievement:

"C" level.

Associate of Science Degree
For Direct Employment

Required Courses (64)	First Semester	Lec.	Lab	Cr. Hrs.
Anatomy/Physiology I	LSC 120	3	+ 3	4
Intro. to Health Care	HCA 54	3	+ 0	3
Writing I	WRT 101	3	+ 0	3
Nursing I	NRS 70	4	+ 12	8
				18
	Second Semester			
Anatomy/Physiology II	LSC 121	3	+ 3	4
Intro. to Psychology I	PSY 100	3	+ 0	3
Nursing II	NRS 72	4	+ 15	9
				16

	Third Semester		
Writing II	WRT 102	3 + 0	3
Microbiology I	LSC 207	3 + 3	4
A.D. Nursing III	NRS 80	4 + 15	9
			16
	Fourth Semester		
A.D. Nursing IV	NRS 82	4 + 15	9
Intro. to Sociology	SOC 100		4
Elective			
			16

Pre-Baccalaureate
For Transfer

Required Courses (67)		**Cr. Hrs.**
Fund. Chemistry I-II	CHM 110–111	8
Anatomy/Physiology I-II	LSC 120–121	8
Microbiology I-II	LSC 207–208	8
Human Development or	ECE 107	3
Child Development	ECE 117	3
College Algebra	MTH 150	3
Intro. Physics I	PHY 121	4
		34
General Education Requirements		
Writing I-II	WRT 101–102	6
Intro. to Psychology I-II	PSY 100–101	6
Intro. to Sociology	SOC 100	3
U.S. Social Problems	SOC 101	3
Humanities I-II	HUM 110–111	8
Introductory Statistics	MTH 210	3
Intro. Cultural Anthro.	ANT 110	3
		32

Office Education

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

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

Clerk-Typist
Advanced Certificate Program
For Direct Employment

Required Courses (33)	**First Semester**	**Cr. Hrs.**
Typing II	OED 112	3
Business Math	BUS 51	3
Payroll Applied Accounting Systems	ACC 50	3
Business English	OED 154	3
Human Relations	MAN 110	3
		15
	Second Semester	
Calculating Machines	OED 121	2
Word Processing	OED 122	4
Office Procedures	OED 257	3
Business Communications	BUS 259	3
Typing III	OED 252	3
Records Management	OED 103	3
		18

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

Required Courses (30)	**First Semester**	**Cr. Hrs.**
Business English	OED 154	3
Typing II	OED 112	3
Business Math	BUS 51	3
Office Procedures	OED 257	3
Elective*		3
		15
	Second Semester	
Payroll/Applied Accounting Systems or Business Communications	ACC 50 OED 259	3
Word Processing	OED 122	4
Calculating Machines	OED 121	2
Human Relations	MAN 110	3
Records Management	OED 103	3
		15

*For Medical receptionist, the elective should be Medical Office Procedures (OED 166). For Legal receptionist, the elective should be Legal Secretarial Procedures I (OED 250).

Administrative Assistant
Associate of Applied Science Degree
For Direct Employment

Required Courses (64–65)	First Semester	Cr. Hrs.
Business English	OED 154	3
Typing II	OED 112	3
Business Math	BUS 51	3
Bus. & Prof. Communication	SPE 120	3
Reading Improvement	REA 100 series	4
		16
	Second Semester	
Typing III	OED 252	3
Records Management	OED 103	3
Human Relations	MAN 110	3
Intro. to Computers	CSC 100	3
Business Communications	BUS 259	3
		15
	Third Semester	
Business Law I	BUS 200	3
Calculating Machines	OED 121	2
Supervision	MAN 112	3
Prin. of Accounting I	ACC 101	3
Office Procedures	OED 257	3
Intro. to Microeconomics	ECO 100	3
		17
	Fourth Semester	
Business Law II	BUS 201	3
Prin. of Accounting II	ACC 102	3
Word Processing	OED 122	4
Business Organ. & Mgmt.	MAN 280	3
General Ed. Elective*		3–4
		16–17

*General education elective can be selected from:

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

General Secretary
Associate of Applied Science Degree
For Direct Employment

Required Courses (63–65)	First Semester	Cr. Hrs.
Business English	OED 154	3
Shorthand I	OED 101	3
Typing I	OED 111	3
Business Math	BUS 51	3
Elective*		3–4
		15–16
	Second Semester	
Shorthand II	OED 102	3
Typing II	OED 112	3
Calculating Machines	OED 121	2
Records Management	OED 103	3
Word Processing	OED 122	4
		15
	Third Semester	
Typing III	OED 252	3
Shorthand III	OED 253	3
Office Procedures	OED 257	3
Prin. of Accounting I or Payroll/Applied Accounting Systems	ACC 101 or 50	3
Intro. to Computers or Intro. to Business	CSC 100 BUS 100	3
Elective		3
		18
	Fourth Semester	
Human Relations	MAN 110	3
Business Law I	BUS 200	3
Transcription	OED 264	3
Business Communications	OED 259	3
General Ed. Elective**		3–4
		15–16

*Recommended: Reading Improvement (REA 100 series).

**General education elective can be selected from:

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

Executive, Legal, Medical Secretary
Associate of Applied Science Degree
For Direct Employment

Required Courses (60–62)	First Semester	Cr. Hrs.
Business English	OED 154	3
Shorthand II	OED 102	3
Typing II	OED 112	3
Business Math	BUS 51	3
Elective*		3–4
		15–16
	Second Semester	
Business Communications	OED 259	3
Shorthand III	OED 253	3
Typing III	OED 252	3
Human Relations	MAN 110	3
Prin. of Accounting I or Payroll/Applied Accounting Systems	ACC 101 or 50	3
		15
	Third Semester	
Word Processing	OED 122	4
Calculating Machines	OED 121	2
Business Law I	BUS 200	3
Option 1		3
Option 2		3
		15
	Fourth Semester	
Records Management	OED 103	3
General Ed. Elective**		3–4
Option 3		3
Option 4		3
Option 5		3
		15–16

*Recommended: Reading Improvement (REA 100 series).

**General education elective can be selected from:

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

Note: Students interested in a secretarial specialization should choose appropriate courses from the three options given to Executive, Legal and Medical Secretary —

Executive Secretary

Option		Units
1	Office Procedures (OED 257)	(3)
2	Intro. to Business (BUS 100)	(3)
or	Intro. to Computers (CSC 100)	(3)
3	Transcription (OED 264)	
or	Prin. of Accounting II (ACC 102)	(3)
4–5	Electives	(3)

Legal Secretary

Option		
1	Office Procedures (OED 257)	(3)
2	Legal Secretarial Procedures I (OED 250)	(3)
3	Legal Secretarial Procedures II (OED 251)	(3)
4	Business Law II (BUS 201)	
or	Criminal Law I (AJS 172)	(3)
5	Transcription (OED 264)	(3)

Medical Secretary

Option		
1	Medical Office Procedures (OED 166)	(3)
2	Medical Terms (OED 255)	(3)
3	Medical Transcription (OED 256)	(3)
4–5	Electives	(6)

Bilingual Secretary
Basic Certificate
For Direct Employment

Required Courses		Cr. Hrs.
Business English	OED 154	3
Commercial Spanish	SPA 30	2
Inter. Spanish I or II	SPA 210 or 211	4
Office Procedures	OED 257	3
		12

*Students also may take Spanish 102 (for Native speakers), Spanish 205 or 225, depending on their entry level.

Note: Spanish 111 or equivalent is a prerequisite.

Bilingual Secretary
Advanced Certificate
For Direct Employment

Required Courses (39–40)		Cr. Hrs.
Business English	OED 154	3
Elementary Spanish II	SPA 110	4
Typing III	OED 252	3
Business Communications	BUS 259	3
Inter. Spanish I	SPA 210 or 102	4
Commercial Spanish	SPA 30	2
Inter. Spanish II* or Inter. Spanish Comp./Conv. I	SPA 211 SPA 225	3–4
Office Procedures	OED 257	3
Commercial Spanish II**		3
Elective		2
		30–31

Following courses to be added if not previously taken:

Shorthand I	OED 101	3
Shorthand II	OED 102	3
Shorthand III	OED 253	3
		9

*Students also may take Spanish 205, depending on entry level.

**Course being developed.

Note: Spanish 111 or equivalent and Typing II or equivalent are prerequisites.

Bilingual Secretary
Associate in Applied Science Degree
For Direct Employment

Required Courses (62–63)	First Semester	Cr. Hrs.
Typing II	OED 112	3
Shorthand I or Business Math	OED 101 BUS 51	3
Business English	OED 154	3
Elem. Spanish II or Int. Span. for Native Speakers I	SPA 111 SPA 101	4
General Education Elective*		3
		16
	Second Semester	
Typing III	OED 252	3
Shorthand II	OED 102	3
Business Math	BUS 51	3
Business Communications	OED 259	3
Inter. Spanish I or Int. Span. for Native Speakers II	SPA 210 SPA 102	4
		16
	Third Semester	
Human Relations	MAN 110	3
Calculating Machines	OED 121	2
Commercial Spanish I	SPA 30	2
Shorthand III	OED 253	3
Inter. Spanish II or Int. Span. Comp. & Con. I	SPA 211 SPA 225	3–4
Elective		2
		15–16
	Fourth Semester	
Office Procedures	OED 257	3
Commercial Spanish II**		3
Imaginative Writing I	SPA 205	3
Records Management	OED 103	3
General Education Elective***		3
		15

*General Education Elective: 3 units may be selected from the following areas — humanities, psychology, sociology and philosophy.

**Course being developed.

***General Education Electives: select three units from Accounting I (ACC 101), Business Law (BUS 200) or economics. Note: Prerequisites for the program are Typing I and Spanish 110 or equivalent.

Operating Room Technology

This curriculum provides the theoretical and practical preparation to qualify graduates for immediate employment as Operating Room Technologists in hospitals, clinics, medical offices or for transfer into specialized four-year programs. The total program consists of three semesters on campus including a minimum of 500 hours of externship practicum in an affiliated Hospital operating room department. Students having satisfactorily completed all required prerequisites will be scheduled to enter the hospital portion of their practicum beginning with the third semester. Graduates will be qualified for an advanced certificate in Operating Room Technology.

Acceptance Into Program:

- Completion of college and division of health sciences acceptance requirements.
- One year of high school algebra.
- One year of high school chemistry.
- One year of high school biology or ecology.
- Personal interview and recommendation by coordinator.
- Approval by selections committee.

General Requirements:

- Total credit: 40 credit hours.
- Work in residence: minimum 27 credit hours of major (ORT) courses to be completed in residence. (Approval required by program coordinator.)

Restrictions:

- Correspondence study: maximum 3 credit hours.
- Extension study: maximum 13 hours (including correspondence study).

Minimal Grade Achievement:

"C"

Advanced Certificate
For Direct Employment

Required Courses (40)	First Semester	Lec. + Lab	Cr. Hrs.
Intro. to Health Care	HCA 54	3 + 0	3
Writing I	WRT 101	3 + 0	3
Intro. to Psychology I	PSY 100	3 + 0	3
Prin. Human Anatomy	LSC 50	3 + 3	4
			13
	Second Semester		
Basic Surgical Tech.	ORT 52	2 + 10	5
Surgical Biology	ORT 53	3 + 0	3
Surgical Procedures	ORT 54	3 + 0	3
Surgical Anatomy	ORT 55	3 + 3	4
			15
	Third Semester		
Hospital Externship Prac.	ORT 91	4 + 32	12

Optical Laboratory Technology and Opthalmic Dispensing Technology

The first year of this program provides the theoretical and practical preparation to qualify graduates for employment as Optical Laboratory Technicians. With completion of the second year, the graduate will qualify for employment as an Ophthalmic Dispenser and/or Contact Lens Technician in private offices and clinics. Other opportunities may be found as private practitioners, optical laboratory managers, ophthalmic sales representatives and opthalmic research technicians. The Optical Laboratory program consists of two semesters of theory and laboratory practice on campus. Graduates will receive a basic certificate in Optical Laboratory Technology. Two additional semesters of theory and practical laboratory on campus will provide the graduate with an Associate of Science degree in Ophthalmic Dispensing Technology. In order to establish private practice in Arizona, the graduate must complete 24 calendar months of apprenticeship as required by the Arizona State Board of Dispensing Opticians.

Acceptance Into Program:

- Completion of college and allied health programs acceptance requirements.
- One year of math (including algebra).
- Receipt of placement examination results for ophthalmic dispensing applicants.
- Personal interview and recommendation by the program coordinator.
- Approval by selections committee.

General Requirements:

- Total credit:
OPTICAL LABORATORY — 30 credit hours.
OPHTHALMIC DISPENSING — 63 credit hours.
- Work in residence:
OPTICAL LABORATORY — minimum 15 credit hours of major (ODT) and related courses to be completed in residence or challenged.
OPHTHALMIC DISPENSING — minimum 44 credit hours of major (ODT) and related courses to be completed in residence.

Restrictions:

- Correspondence Study:
OPTICAL LABORATORY — maximum 3 credit hours.
OPHTHALMIC DISPENSING — maximum 6 credit hours.
- Extension Study;
OPHTHALMIC DISPENSING — maximum 19 credit hours (including correspondence study).

Minimal Grade Achievement:

"C" level.


HORIZONTAL

Optical Laboratory Technology
Basic Certificate
For Direct Employment

Required Courses (30)	First Semester	Lec.	Lab	Cr. Hrs.
Writing I	WRT 101	3	0	3
Algebra I	MTH 70	3	0	3
Fund. Physics	PHY 105	3	3	4
Optical Orient. I	ODT 51	5	3	6
				16
	Second Semester			
Practical Communications	WRT 150	3	0	3
Algebra II	MTH 130	3	0	3
Social Science Elective*		3	0	3
Optical Orient. II	ODT 52	3	0	3
Optical Lab.	ODT 53	0	6	2
				14

Ophthalmic Dispensing Technology
Associate of Science Degree
For Direct Employment

Required Courses (63)				Cr. Hrs.
Certificate Requirements				30
	Third Semester			
Optical Dispensing I	ODT 54	4	6	6
Contact Lens Ant. & Phy.	ODT 55	4	0	4
Ophthalmic Assistant	ODT 56	2	3	3
Business or Mktg. Elective*		3	0	3
				16
	Fourth Semester			
Elective*		3	0	3
Contact Lenses	ODT 57	4	3	5
Optical Dispensing II	ODT 58	4	0	4
Senior Seminar	ODT 59	2	0	2
Co-op Ophthalmic Dis.	ODT 299	0	15	3
				17

*Coordinator's approval needed.

Physical Education

The Physical Education program is based on the philosophy of acquiring 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 Services 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 Transfer

Required Courses (60)	First Semester	Cr. Hrs.
Intro. to Leisure Ed.	PED 139	3
Elem. School Phys. Ed.	PED 130	3
Professional Activities	PED 131–138	12
Practicum	PED 1–4	4
Phys. Ed. History	PED 149	2
Facilities for Phy. and Rec.	PED 120	2
		26
General Education Requirements		
Writing I–II	WRT 101–102	6
Algebra II	MTH 130	3
Intro. to Psychology I	PSY 100	3
Humanities I–II	HUM 110–111	8
Anatomy & Physiology I–II	LSC 120–121	8
National Government	POL 110	3
Electives*		3
		34

*Suggested Electives for a minimum of three credits:

Sports Officiating	PED 145	(2)
Dance	PED 144	(2)
Athletic Training	PED 125	(2)
Co-op Training	PED 299	(3–12)
Intro. to Sociology	SOC 100	(3)
Human Biology	LSC 58	(3)
Intro. Health Science	HED 136	(3)
Prep. for Teaching	HED 137	(3)
Child Development	ECE 117	(3)

Physics

Associate of Science Degree
For Transfer

Suggested Courses (60–64)	First Semester	Cr. Hrs.
Writing I	WRT 101	3
Anal. Geometry & Calculus I	MTH 180	3
Introductory Mechanics	PHY 210	4
Fortran IV Programming	CSC 140	3
Social Science Elective*		3
		16
	Second Semester	
Writing II	WRT 102	3
Anal. Geometry & Calculus II	MTH 185	3
Intro. Electricity & Magnetism	PHY 216	4
General Chemistry I	CHM 120	4
Social Science Elective		3
		17
	Third Semester	
Anal. Geometry & Calculus III	MTH 215	4
Intro. to Waves & Heat	PHY 221	3
General Chemistry II	CHM 121	4
Humanities Elective		3–4
Physical Education	PED	1
		15–16
	Fourth Semester	
Linear Alg. & Diff. Equations	MTH 220	4
Intro. to Modern Physics	PHY 230	3
Elementary German I	GER 110	4
Humanities Elective		3–4
Physical Education	PED	1
		15–16

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

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

Pre-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 for required courses.

Associate of Arts Degree
For Transfer

Required Courses (65)	First Semester	Cr. Hrs.
Basic Design	ART 100	4
Writing I	WRT 101	3
Math Elective	MTH	3
Social Science Elective		3
Elective in program of interest		3
		16
	Second Semester	
Drawing I	ART 110	3
Photography I or	ART 140	
Crafts	ART 160 to 190	3
Writing II	WRT 102	3
Math Elective	MTH	3
Social Science Elective		3
		15
	Third Semester	
Art and Culture I	ART 130	3
Functional Design I or	ART 150	
Light-Weight Struct. Design	ART 151	3
Drawing II or	ART 210	
Color and Design	ART 115	3
Humanities I	HUM 110	4
Introductory Physics I or	PHY 121	
Intro. Physics/Calculus I	PHY 131	4
		17
	Fourth Semester	
Art and Culture II	ART 131	3
Functional Design II	ART 250	3
Art Elective	ART 115, 120, 212 213 or 215	3
Humanities II	HUM 111	4
Introductory Physics II or	PHY 122	
Intro. Physics/Calculus II	PHY 132	4
		17

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	First Semester	Cr. Hrs.
Writing I–II	WRT 101–102	6
College Algebra	MTH 150	3
Intro. to Politics	POL 100	3
National Government	POL 110	3
State & Local Govt.	POL 111	3
Comparative Politics	POL 120	3
Int'l. Relations	POL 130	3
Minority Groups	POL 140	3
Independent Study	POL 149	3
Immigration Law	POL 50	3
Intro. to Sociology	SOC 100	3
U.S. Social Problems	SOC 101	3
Humanities I–II	HUM 110–111	4–8
Western Civil. I–II	HIS 101–102	6
Am. Civilization I–II	HIS 143–144	6
U.S. History I–II	HIS 141–142	6
Math Elective	MTH	3–6
Economics Elective	ECO	3–9
Intro. to Psychology I	PSY 100	3

Pre-Medical and Pre-Dental

Minimum requirements for admission to a medical school have been established by the Association of American Medical Colleges and the council on medical education of the American Medical Association. Those for admission to a dental school have been established by the council on dental education of the American Dental Association.

While the minimum requirements are less than a bachelor's degree, all leading medical schools require a bachelor's degree as a prerequisite for students seeking admission. The medical 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.

Admission into dental schools depends on the Dental Admission Testing Program.

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 (68)	First Semester	Cr. Hrs.
Algebra II	MTH 130	3
General Chemistry I	CHM 120	4
Writing I	WRT 101	3
Suggested Electives*		
Intro. to Psychology I	PSY 100	3
Humanities I	HUM 110	4
		17
	Second Semester	
General Chemistry II	CHM 121	4
Organismic Biology I	LSC 205	4
College Algebra**	MTH 150	3
Writing II	WRT 102	3
Suggested Elective*		
Humanities II	HUM 111	4
		18

	Third Semester	
Organic Chemistry I	CHM 240	4
Organismic Biology II	LSC 206	4
Introductory Physics I	PHY 121	4
Suggested Electives*		
Intro. to Psychology II	PSY 101	3
Cultural Anthropology	ANT 110	3
		18
	Fourth Semester	
Organic Chemistry II	CHM 241	4
Introductory Physics II	PHY 122	4
General Genetics	LSC 210	4
Suggested Elective*		
Intro. to Sociology	SOC 100	3
		15

*For alternate course electives in Humanities and Social Sciences consult the college catalog of the medical or dental school of your choice.

**Mathematics requirements differ for medical schools. Consult the catalog of the medical school of your choice.

Pre-Medical Technology

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

For Transfer

Suggested Courses (67)	**First Semester**	**Cr. Hrs.**
Writing I	WRT 101	3
Algebra II or	MTH 130	
College Algebra	MTH 150	3
General Chemistry I	CHM 120	4
Human Anatomy/Phy. I	LSC 120	4
Social Science Elective		3
		17
	Second Semester	
Writing II	WRT 102	3
College Algebra or	MTH 150	
Introductory Statistics	MTH 210	3
General Chemistry II	CHM 121	4
Human Anatomy/Phy. II	LSC 121	4
Social Science Elective		3
		17
	Third Semester	
Organic Chemistry I	CHM 240	4
Microbiology I	LSC 207	4
Humanities I	HUM 110	4
Trigonometry or	MTH 155	
Introductory Statistics	MTH 210	3
Social Science Elective		3
		18
	Fourth Semester	
Organic Chemistry II	CHM 241	4
Microbiology II	LSC 208	4
Humanities II	HUM 111	4
Intro. to Computers or	CSC 100	
Fortran II Programming	CSC 140	3
		15

Note: Additional courses available at Pima which may be required are a foreign language, Introductory Physics (PHY 121, 122), General Genetics (LSC 210) and physical education classes.

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 (63)	First Semester	Cr. Hrs.
Algebra II	MTH 130	3
General Chemistry I	CHM 120	4
Writing I	WRT 101	3
Suggested Electives*		
Intro. to Psychology I	PSY 100	3
Humanities I	HUM 110	4
		17
	Second Semester	
General Chemistry II	CHM 121	4
College Algebra	MTH 150	3
Introductory Physics I	PHY 121	4
Suggested Electives*	PSY 101	3
Intro. to Psychology II		
Humanities II	HUM 111	4
		18
	Third Semester	
Organic Chemistry I	CHM 240	4
Introductory Physics II	PHY 122	4
Trigonometry	MTH 155	3
Suggested Elective*		
Intro. to Sociology	SOC 100	3
		14
	Fourth Semester	
Organic Chemistry II	CHM 241	4
Topics in Calculus	MTH 175	3
Human Anatomy I	LSC 120	4
Suggested Elective*		
Intro. to Macroeconomics	ECO 101	3
		14

*Check the College of Pharmacy to which you plan to transfer for alternate suggested electives.

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 (68)	First Semester	Cr. Hrs.
Algebra II	MTH 130	3
General Chemistry I	CHM 120	4
Writing I	WRT 101	3
Suggested Electives*		
Intro. to Psychology I	PSY 100	3
Humanities I	HUM 110	4
		17
	Second Semester	
General Chemistry II	CHM 121	4
Organismic Biology I	LSC 205	4
College Algebra**	MTH 150	3
Writing II	WRT 102	3
Suggested Elective*		
Humanities II	HUM 111	4
		18
	Third Semester	
Organic Chemistry	CHM 240	4
Organismic Biology II	LSC 206	4
Introductory Physics I	PHY 121	4
Suggested Electives*		
Intro. to Psychology II	PSY 101	3
Cultural Anthropology	ANT 110	3
		18
	Fourth Semester	
Organic Chemistry II	CHM 241	4
Introductory Physics II	PHY 122	4
General Genetics	LSC 210	4
Suggested Elective*		
Intro. to Sociology	SOC 100	3
		15

*For alternate course electives in Humanities and Social Sciences consult the catalog of the veterinary school of your choice.

**Mathematics requirements differ for veterinary schools. Consult the catalog of the veterinary school of your choice.

Note: Additional courses available at Pima which may be required are microbiology I (LSC 207), speech (SPE 102) and physical education classes.

Radiologic Technology

This curriculum provides the theoretical and practical preparation to qualify graduates for immediate employment as Radiologic Technologists in hospitals, clinics, medical offices or for transfer into specialized four-year programs.

The total program consists of four semesters on campus and a minimum of 2,200 hours of externship practicum in an affiliated hospital radiology department. Students having successfully completed all required prerequisites will be scheduled to enter the hospital portion of their practicum beginning with the third semester. Graduates will be qualified for the Associate of Science degree in Radiologic Technology and will be eligible to apply for registration with the American Registry of Radiologic Technologists.

Acceptance Into Program:

- Completion of college and allied health programs acceptance requirements.
- High school mathematics — algebra and geometry required.
- One year of chemistry.
- One semester of biology or zoology.
- Personal interview and recommendation by the program coordinator.
- Approval by selections committee.

General Requirements:

- Total credit: 105 credit hours.
- Work in residence: minimum of 75 credit hours of major (RAD) courses to be completed in residence, 30 of which may be challenged. (Approval required by program coordinator.)

Restrictions:

- Correspondence study: maximum 6 credit hours.
- Extension study: maximum 27 credit hours (including correspondence study).

Minimal Grade Achievement:

"C" level.

Associate of Science Degree
For Direct Employment

Required Courses (105)	First Semester		Lec.	Lab	Cr. Hrs.
Writing I	WRT	101	3	0	3
Intro. to Health Care	HCA	54	3	0	3
Algebra II	MTH	130	3	0	3
Human Anat. & Phy. I	LSC	120	3	3	4
Radiographic Fund.	RAD	71	3	3	4
					17
	Second Semester				
Fundamental Physics	PHY	105	3	3	4
Human Anat. & Phys. II	LSC	121	3	3	4
Rad. Processing & Tech.	RAD	72	3	3	4
Rad. Positioning I	RAD	73	3	3	4
					16
	Third Semester				
Writing II	WRT	102	3	0	3
Rad. Positioning II	RAD	81	4	3	5
Radiologic Physics I	RAD	82	4	3	5
Clinical Procedures I	RAD	83	0	6	2
Rad. Therapy/Biology/ Nuc. Medicine	RAD	84	3	0	3
					18
	Fourth Semester				
Intro. to Psychology I	PSY	100	3	0	3
Rad. Positioning III	RAD	85	4	3	5
Clinical Procedures II	RAD	86	0	6	2
Radiologic Physics II	RAD	88	4	3	5
Elective*			3	0	3
					18

*(Coordinator's permission required)

	Fifth Semester (Summer)				
Hospital Extern. Pract. I	RAD	91	0	40	12
	Sixth Semester				
Hospital Extern. Pract. II	RAD	92	0	40	12
	Seventh Semester				
Hospital Extern. Pract. III	RAD	93	0	40	12

Real Estate

Real Estate
Basic Certificate
For Direct Employment

Required Courses	First Semester	Cr. Hrs.
Prin. of Accounting I	ACC 101	3
Business Law I	BUS 200	3
Intro.to Microeconomics	ECO 100	3
Salesmanship	MKT 113	3
Real Estate Principles	RLS 65	4
		16

Real Estate
Advanced Certificate
For Direct Employment

Required Courses	First Semester	Cr. Hrs.
Basic Certificate Requirements		16
Home Mortgage Lending	FIN 205	3
Human Relations	MAN 110	3
Real Estate Practices	RLS 66	4
Real Estate Law	RLS 67	3
Bus. & Prof. Communications	SPE 120	3
		32

Real Estate
Associate of Applied Science Degree
For Direct Employment

Required Courses (62)	First Semester	Cr. Hrs.
Prin. of Accounting I	ACC 101	3
Real Estate Principles	RLS 65	4
Business Math	BUS 51	3
Business English	OED 154	3
Elective*		3
		16
	Second Semester	
Business Law I	BUS 200	3
Intro. to Microeconomics	ECO 100	3
Bus. & Prof. Communications	SPE 120	3
Real Estate Practices	RLS 66	4
Salesmanship	MKT 113	3
		16
	Third Semester	
Business Law II	BUS 201	3
Home Mortgage Lending	FIN 205	3
Business Communications	BUS 259	3
Electives*		6
		15
	Fourth Semester	
Real Estate Appraisals	RLS 68	3
Real Estate Practicum	RLS 69	3
Contemporary Eco. Topics	ECO 298	3
Real Estate Law	RLS 67	3
Elective*		3
		15

*Four courses must be selected from the following:

Intro. to Cities & Comm.	SOC 99	(3)
Intro. to Civil Rights	SOC 202	(3)
Anal. Fin. Statements	FIN 217	(3)
Construction Drafting I	DFT 110	(3)
Human Relations	MAN 110	(3)
Advertising	MKT 125	(3)
Prin. of Accounting II	ACC 102	(3)
Tax Accounting	ACC 204	(3)
Intro. to Computers	CSC 100	(3)
Consumer Behavior	MKT 141	(3)

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
Park/Forest Service
Recreation Leader

Associate of Applied Science Degree
For Direct Employment

	First Semester	**Cr. Hrs.**
Writing I	WRT 101	3
Mathematics of Business	BUS 51	3
Intro. to Parks & Recreation	REC 101	3
Ecology I	LSC 150	4
Option A, B, or C		3–5
		16–18
	Second Semester	
Writing II	WRT 102	3
Technical Communications	WRT 154	3
Business & Professional Comm.	SPE 120	3
Outdoor Recreation-Education	REC 115	3
Survival	REC 118	2
Ecology II	LSC 151	4
Option A, B, or C		1–3
		16–18
	Third Semester	
Recreation Admin. & Finance	REC 103	3
Public Relations & Communigraphics	REC 74	3
Western Land Vertebrates	LSC 172	3
Geology of the Western U.S.	ESC 110	3
Option A, B, or C		3–6
		15–18
	Fourth Semester	
Group Leadership	REC 102	2
Cons. of Natural Resources	LSC 170	3
Survey of Western Flora	LSC 171	3
Cooperative Recreation Training	REC 299	3
Option A, B, or C		4–7
		15–18

Note:

A. PARK/FOREST SERVICE students should take the seven courses from Option A then select additional electives from Option B to bring their total program to 62–72 semester hours.

B. NATURAL RESOURCE RECREATION majors select electives from Option B to bring their total program to 62–72 semester hours.

C. RECREATION LEADER students should select electives from Option C to bring their total program to 62–72 semester hours.

Option A — Park/Forest Service

This program is offered in cooperation with the western regional office of the U.S. National Park Service and is geared to provide the student with skills needed to accomplish a variety of tasks under the direction of a district ranger. These include working on fire fighting crews, search and rescue, conservation, public information, aiding in law enforcement, campground supervision and maintenance, and projects involving the preservation and restoration of buildings and historical sites.

	First Semester	**Cr. Hrs.**
Federal Lands & Mgmt.	LSC 76	1
	Second Semester	
Federal Lands & Urbanization	LSC 77	2
	Spring Recess	
Fed. Lands & Fire Control. Pol.	LSC 78	2
Fed. Lands & Visitor Serv.	LSC 79	1
	Third Semester	
Intro. to Game Management	LSC 173	3
	Fourth Semester	
Cultural Geography	ESC 103	4
Adv. Fed. Lands & Visitor Serv.	LSC 80	1

Option B — Natural Resource Recreation

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

		Cr. Hrs.
Intro. to Game Management	LSC 173	3
Human Relations	MAN 110	3
Recreation Systems & Mgmt.	REC 52	3
Park Administration	REC 59	3
Water Recreation & Resources	REC 75	3
Facilities for Phys. Ed. & Rec.	REC 120	3
Camping & Hiking and/or Recreation Activities	REC 150 REC 256	1–4
		19–22

Option C — Recreation Leader

Employment possibilities include youth organization, community centers, commercial recreation areas, playgrounds, amusements, camp sites, sports specialist, crafts specialist, life guard, industrial plants and camp counselors.

		Cr. Hrs.
Stagecraft & Production I	DRA 120	3
Child Development	ECE 117	3
Dance	PED 144	2
Sports Officiating	PED 145	2
Recreation Arts & Crafts	REC 51	3
Program Planning	REC 114	3
Recreation for Special Groups	REC 116	3
Recreational Games	REC 119	2
Facilities for Phys. Ed. & Rec.	REC 120	3
First Aid	REC 121	2
Camping & Hiking and/or Recreational Activities	REC 150 REC 256	1–4
		19–22

Pre-Professional Recreation For Transfer

Students should follow the program of the institution to which they plan to transfer, but they may take any of the following courses.

Required Courses (67)	First Semester	Cr. Hrs.
Intro. to Parks & Recreation	REC 101	3
Group Leadership	REC 102	2
Administration & Finance	REC 103	3
Survival	REC 118	2
Outdoor Recreation Ed.	REC 115	2
Program Planning & Org.	REC 114	3
Recreational Games	REC 119	2
		17

General Education Requirements:

		Cr. Hrs.
Writing I–II	WRT 101–102	6
Public Speaking	SPE 110	3
College Algebra	MTH 150	3
Ecology I–II	LSC 150–151	8
Electives		30
		50

Respiratory Therapy

This curriculum provides the theoretical and practical preparation to qualify graduates for immediate employment as Respiratory Therapists in hospitals, clinics, medical offices or for transfer into specialized four-year programs.

The total program consists of two semesters of supportive course work followed by a summer session and two semesters of major curriculum work. Students having successfully completed all required prerequisites will be scheduled to enter the hospital portion of their practicum beginning with the first semester of the major curriculum. Graduates will be qualified for the Associate of Science degree in Respiratory Therapy. Students needing to complete only the summer session and the last two semesters will be qualified for a certificate in Respiratory Therapy.

Acceptance Into Program (Major Curriculum):

- Completion of college and allied health programs acceptance requirements.
- Receipt of high school or college level transcripts to indicate the student —
  Has successfully completed the support course work, or
  Is a registered nurse, or
  Is a college graduate holding a degree in a biological science, or
  Is a college graduate holding a degree in liberal arts.
- Receipt of placement examination results in math and reading comprehension.
- Personal interview and recommendation by the program coordinator.
- Approval by selections committee.

General Requirements:

- Total credit:
  CERTIFICATE — 41 credit hours.
  ASSOCIATE DEGREE — 75 credit hours.
- Work in residence: minimum 41 credit hours of major (RTH) courses to be completed in residence.

Restriction:

- Correspondence study: maximum 6 credit hours.
- Extension study: maximum 34 credit hours (including correspondence study).

Minimal Grade Achievement:

"C" level.

Certificate
For Direct Employment

Required Courses (34)	First Semester		Lec.	Lab	Cr. Hrs.
Intro. to Health Care	HCA	54	3	0	3
Human Ana. & Phys. I	LSC	120	3	3	4
Algebra I	MTH	70	3	0	3
Fund. Chemistry I	CHM	110	3	3	4
Writing I	WRT	101	3	0	3
					17
	Second Semester				
Writing II	WRT	102	3	0	3
Human Ana. & Phys. II	LSC	121	3	3	4
Fund. Chemistry II	CHM	111	3	3	4
Intro. to Psychology I	PSY	100	3	0	3
Humanities Elective	HUM		3	0	3
					17

Associate of Science Degree
For Direct Employment

Required Courses (75)			Lec.	Lab	Cr. Hrs.
Certificate Requirements					34
	Third Semester (Summer)				
Intro. to Respiratory Ther.	RTH	71	3	6	5
Respiratory Physiology	RTH	82	5	0	5
					10
	Fourth Semester				
Diseases I	RTH	86	4	0	4
Clinical Medicine	RTH	73	3	0	3
Respiratory Care I	RTH	83	4	3	5
Clinical Procedures	RTH	91	0	15	5
					17
	Fifth Semester				
Diseases II	RTH	89	4	0	4
Respiratory Care II	RTH	84	4	3	5
Clinical Procedures II	RTH	92	0	15	5
					14

Note: In the third and fourth semesters, the student should spend 3 hours a day, 5 days a week in clinical procedures. Clinical hours will be flexible so that a student would need spend only as much time in a clinical setting as necessary to successfully complete each clinical objective.

Skills for Allied Health Services

This curriculum is designed to maximize opportunities for learning so that students will be equipped to adapt basic health worker skills to the varied delivery of health services. Upon completion of the program, the students will qualify to perform basic client care skills in long term and home care facilities as Nursing Assistants or Patient Care Attendants. Homemaker and Home Health Aide Skills are included and clinic experience as Unit Clerks can be arranged. Graduates are prepared to perform beginning health worker skills under the supervision of licensed health care personnel.

A one semester program consisting of three courses that include lectures, laboratory and clinical experience in community health facilities. Upon completion of twelve credit hours the student will receive Pima Community College District Certification. Course work can be applied in other health career programs.

Acceptance Into Program:

- Completion of Pima Community College acceptance requirements.
- Completion of a Health Science Interview Application.
- Physical examination to include T.B. Screening.
- Completion of screening examination in Math and Reading comprehension.
- Interview by Skills for Allied Health Services instructor.

General Requirements:

- Total credits: 12 semester hours.
- Completion of work at Downtown Campus and designated clinical facility.

Allied Health Sciences
Basic Certificate

Required Courses			Lec.	Lab	Cr. Hrs.
Intro. to Anat. & Physiology	LSC	50	3	3	4
Intro. to Health Care	HCA	54	3	0	3
Skills for Allied Health Serv.	HCA	50	2	9	5
					12

Sheet Metal

Students are provided conditions similar to industry through a fully equipped sheet metal laboratory. Students learn to calculate, size lay-out and fabricate duct work for use in air-conditioning installations. The students, in addition are taught how to adapt to other areas of the sheet metal industry.

Fundamentals of Sheet Metal Fabrication
Basic Certificate
For Employment

Required Courses	First Semester	Cr. Hrs.
Sheet Metal I–II	SML 110, 120	8
Sheet Metal Pattern Layout I	SML 130	3
Technical Math I–II	MTH 110, 120	6
Technical Drafting I	DFT 150	3
Human Relations	MAN 58	3
		23

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

Required (75)	First Semester	Cr. Hrs.
Air Conditioning Fundamentals	ACD 101	3
Air Conditioning Phase I	ACD 120	4
Technical Math I	MTH 110	3
Sheet Metal I	SML 110	4
Technical Drafting I	DFT 150	3
		17
	Second Semester	
Sheet Metal Pattern Layout I	SML 130	3
Air Conditioning Phase II	ACD 125	4
Technical Math II	MTH 120	3
Sheet Metal II	SML 120	4
Practical Communications	WRT 150	3
Combination Welding	WLD 110	3
		20
	Third Semester	
Air Conditioning Phase III	ACD 210	4
Human Relations	MAN 110	3
Technical Physics I	PHY 101	3
Sheet Metal Pattern Layout II	SML 135	3
Technical Communications	WRT 154	3
Estimating I	ACD 250	3
		19
	Fourth Semester	
Air Conditioning Phase IV	ACD 220	4
Sheet Metal Pattern Layout III	SML 210	3
Architectural Sheet Metal	SML 220	3
Estimating II	ACD 260	3
Technical Physics II	PHY 102	3
Elective in Humanities, Psychol., Sociology or Philosophy		3
		19

Social Services

The Social Services program qualifies students for employment in a variety of community service agencies which deal with mental health, welfare, child care, education, retardation, counseling and community organization. Agencies offering job possibilities are connected with city, county, state and school governments; religious groups; private organizations; neighborhood councils; and other social action groups.

The Associate degree graduate is a relatively new addition to the human services team, but the field currently is expanding on the local and national level due to a concentrated effort to approach social problems on a more human and individual basis. Job responsibilities for the graduate include working directly with clients, handling initial interviews, collecting data, making home visits, making recommendations for staff action, and easing communication channels between the professional worker and the client.

Various study programs have been designed to meet the different needs of students. Both a one-year certificate program and a two-year Associate of Arts program are available.

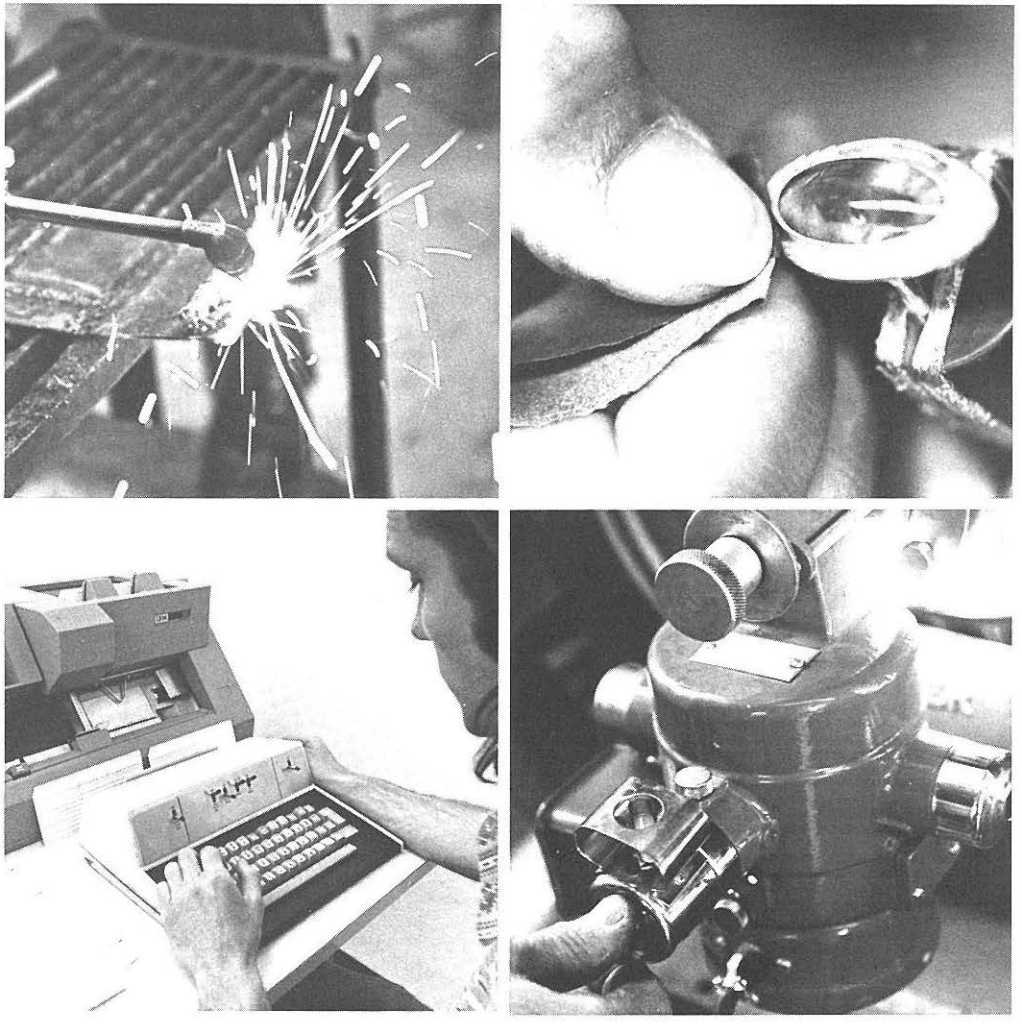
Students planning to transfer to four-year colleges or universities can satisfy their freshman and sophomore requirements at Pima, but should check the first two-year requirements of the university they plan to attend. (See section below, on University Transfer Programs.)

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

The various study programs require that students receive at least six units of field experience in a social service agency as part of the study process.

Social Services
Basic Certificate
For Direct Employment (One Year)

Required Courses (30)	First Semester	Cr. Hrs.
Introduction to Social Welfare	SSE 133	3
Casework Methods	SSE 134	3
Cooperative Training	SSE 299	3
Writing I	WRT 101	3
Elective		3
		15
	Second Semester	
Group Work	SSE 235	3
Community Org. & Development	SSE 216	3
Cooperative Training	SSE 299	3
Writing II	WRT 102	3
Elective		3
		15



Social Services (Subspecialty in Drug Counseling)
Advanced Certificate

Follow the schedule as for the Social Services Basic Certificate for Direct Employment (one year), but add the following:

	First Semester	Cr. Hrs.
Drugs in American Society	SSE 115	3
Political and Legal Aspects of Drug Use	SSE 127	3
	Second Semester	
Treatment of the Drug Abuser	SSE 218	3
Evaluation and Support of the Drug Abuser	SSE 217	3
(Please note: no electives)		3
		13

Social Services
Associate of Arts Degree
For Direct Employment (Two Years)

Required Courses (60)	First Semester	Cr. Hrs.
Introduction to Social Welfare	SSE 133	3
Writing I	WRT 101	3
Introduction to Psychology I	PSY 100	3
Elective		3
Elective		3
		15
	Second Semester	
Casework Methods	SSE 134	3
Writing II	WRT 102	3
Introduction to Sociology	SOC 100	3
Elective		3
Elective		3
		15
	Third Semester	
Group Work	SSE 235	3
Oral Communication	SPE 102	3
Cooperative Training	SSE 299	3
Elective		3
Elective		3
		15
	Fourth Semester	
Community Org. & Development	SSE 216	3
Elective		3
Cooperative Training	SSE 299	3
Elective		3
Elective		3
		15

Social Services (Subspecialty in Drug Counseling)
Associate of Arts Degree
For Direct Employment

Follow the Associate of Arts Degree for Direct Employment (two years), but add the following courses:

	First Semester	Cr. Hrs.
Drugs in American Society	SSE 115	3
	Second Semester	
Political & Legal Aspects of Drug Use	SSE 127	3
	Third Semester	
Treatment of the Drug Abuser	SSE 218	3
	Fourth Semester	
Evaluation & Support of the Drug Abuser	SSE 217	3

University Transfer Programs:

Students interested in relating their Social Services studies at Pima Community College to a university baccalaureate (four-year) program in Arizona could consider transferring into one of the following:

U of A — College of Business and Public Administration (with one of the majors in Public Administration);
College of Education (with major in Rehabilitation);
College of Liberal Arts (with major in Sociology);

ASU — College of Liberal Arts (with major in Sociology or in Social Welfare);

NAU — College of Public and Environmental Service (with one of the majors in Sociology).

In each case, the student considering transfer must check the specific lower division (freshman-sophomore) catalog requirements at the institution being considered, and then identify equivalent courses offered at Pima Community College. Your advisor in Social Services can assist you in this.

Suggested Electives (not necessarily for transfer)

There are many courses at Pima that would be helpful to students in Social Services. The following are just a few:

	First Semester	Cr. Hrs.
Crisis Intervention — Theory and Techniques	SSE 236	3
Introduction to Health Science	HED 136	3
History and Culture of the Mexican-American	HIS 149	3
American National Govt. & Politics	POL 110	3
American State and Local Government and Politics	POL 111	3
Intro. to Cultural Anthropology	ANT 110	3
Fundamentals of Crime & Delinquency	AJS 260	3
Juvenile Justice Procedures	AJS 212	3
Current U.S. Social Problems	SOC 101	3
Drugs in American Society	SSE 115	3
Introduction Social Psychology	PSY 102	3
Police Community & Human Relations	AJS 210	3
Intro. to Administration of Justice Systems	AJS 101	3
Understanding the Young Child	ECE 116	3

Speech

The two-year degree program assists students preparing for careers requiring extensive interaction with the public: business, law, education, politics, public relations, sales and theology. The student who plans to transfer to a four-year institution will find the program includes courses generally required of a Speech major in the first four semesters of study. However, the student should check the specific requirements of the institution to which he plans to transfer.

The speech curriculum is designed to improve the student's skills in public address, interpersonal and group communication, and to develop his understanding of communication behavior in social and career situations.

Associate of Arts Degree
For Transfer

Suggested Semester Sequence (68)	**First Semester**	**Cr. Hrs.**
Intro. to Oral Communications	SPE 102	3
Forensics	SPE 125	1
Writing I	WRT 101	3
Foreign Language		4
Science Elective		4
Elective		3
		18
	Second Semester	
Public Speaking	SPE 110	3
Writing II	WRT 102	3
Foreign Language		4
Science Elective		4
Intro. to Logic as a suggested elective	PHI 120	3
		17
	Third Semester	
Voice and Diction	SPE 105	2
Humanities I	HUM 110	4
Intro. to Psychology I	PSY 100	3
Foreign Language		4
Small Group Discussion as a suggested elective	SPE 130	3
		16
	Fourth Semester	
Oral Interp. of Literature	SPE 136	3
Humanities II	HUM 111	4
Intro. to Psychology II	PSY 101	3
Foreign Language		4
Elective		3
		17

Welding

With the housing of the Welding programs in the new facilities on the Downtown Campus, Welding Courses and programs have been expanded to enable both fundamental and advanced techniques to be offered. The facilities for this program at Pima Community College are some of the best in the Southwest. Students presently in these programs are gaining invaluable experiences through classroom and laboratory settings similar to those found in industry

Basic Certificate
Job Oriented

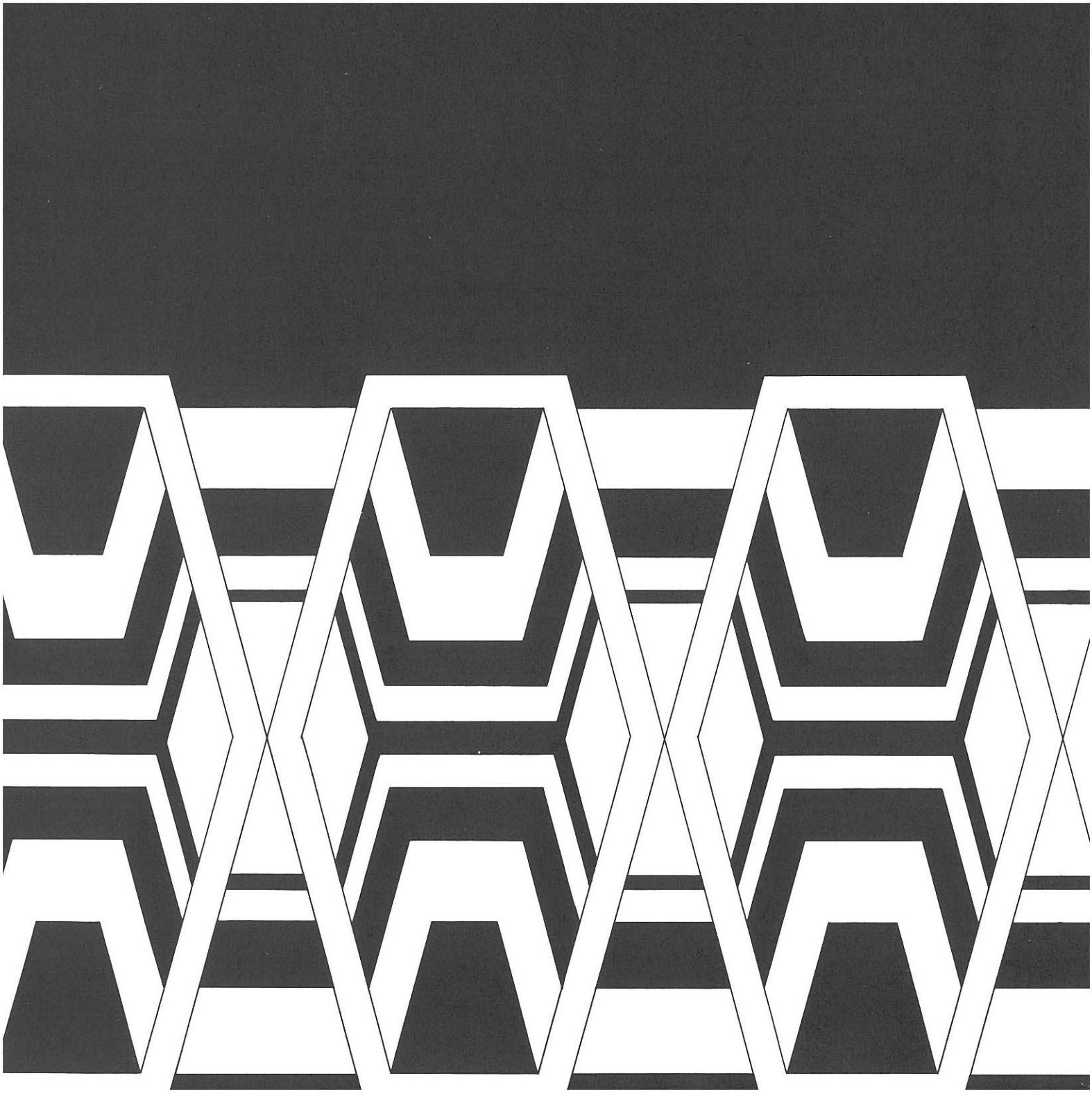
Required Courses	**First Semester**	**Cr. Hrs.**
Oxy-Acetylene Welding	WLD 150	4
Arc Welding	WLD 160	4
Technical Drafting I	DFT 150	3
Technical Math I	MTH 110	3
Basic Metallurgy	MAC 130	3
Blueprint Reading	WLD 115	3
		20

Technical Certificate
Job Oriented

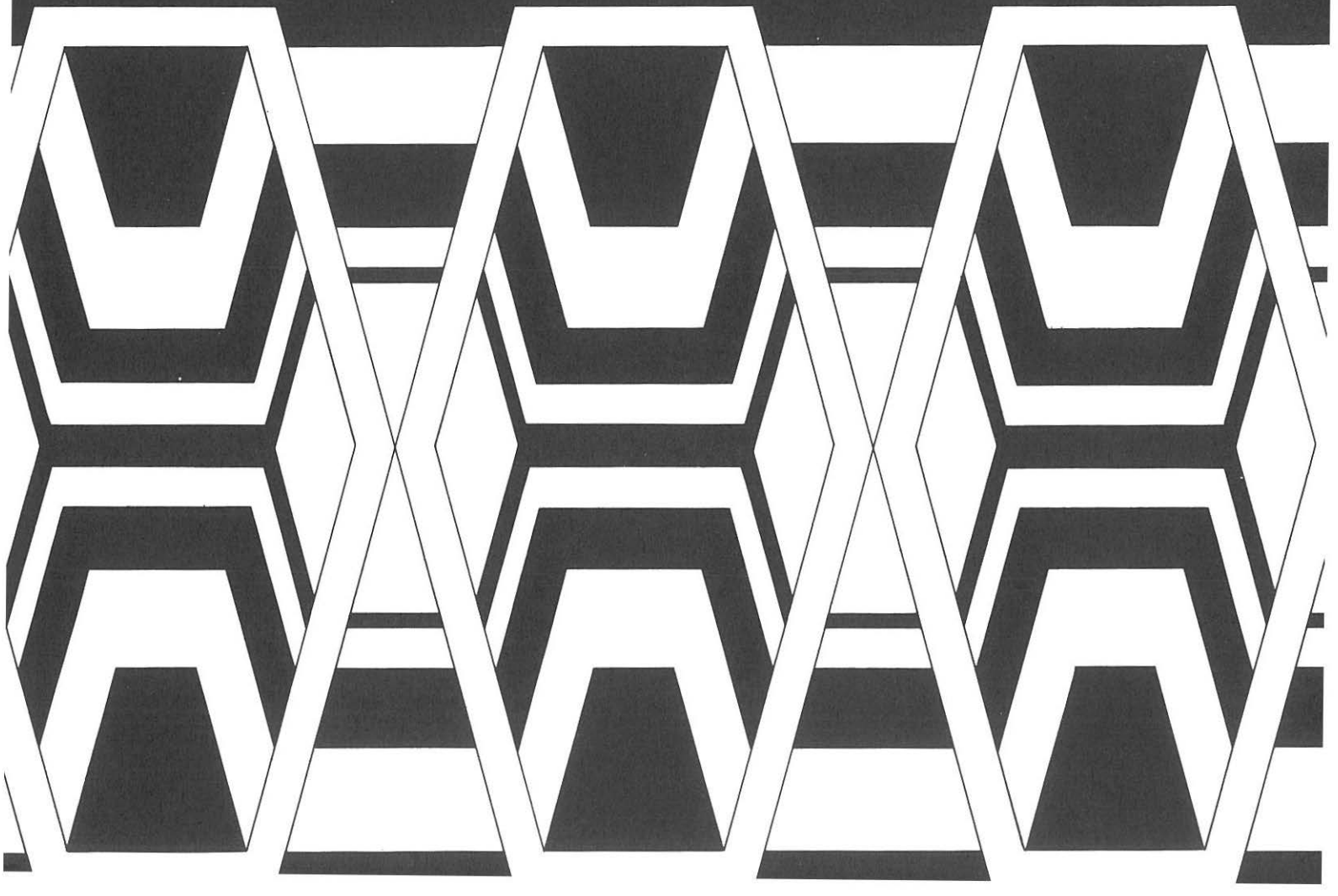
Required Courses	First Semester	Cr. Hrs.
Oxy-Acetylene Welding	WLD 150	4
Arc Welding	WLD 160	4
Pipe Welding	WLD 250	4
Inert Gas Welding	WLD 260	4
Technical Drafting I	DFT 150	3
Technical Math I–II	MTH 110, 120	6
Basic Metallurgy	MAC 130	3
Physical Metallurgy	MAC 135	3
Blueprint Reading	WLD 115	3
Practical Communications	WRT 150	3
Human Relations	MAN 110	3
Machine Shop I	MAC 110	4
Sheet Metal Layout I	SML 130	3
		47

Welding Technology
Associate of Applied Science Degree
For Direct Employment

Required Courses (68)	First Semester	Cr. Hrs.
Oxy-Acetylene Welding	WLD 150	4
Basic Metallurgy	MAC 130	3
Blueprint Reading	WLD 115	3
Technical Math I	MTH 110	3
Sheet Metal Layout I	SML 130	3
		16
	Second Semester	
Arc Welding	WLD 160	4
Physical Metallurgy	MAC 135	3
Technical Drafting I	DFT 150	3
Technical Math II	MTH 120	3
Sheet Metal Layout II	SML 135	3
		16
	Third Semester	
Pipe Welding	WLD 250	4
Technical Physics I	PHY 101	3
Machine Shop I	MAC 110	4
Sheet Metal Layout III	SML 210	3
Practical Communications	WRT 150	3
Humanities, Psychology, Sociol. or Philosophy Elective		3
		20
	Fourth Semester	
Inert Gas Welding	WLD 260	4
Technical Physics II	PHY 102	3
Human Relations	MAN 110	3
Estimating I	ACD 250	3
Technical Communications	WRT 154	3
		16



courses



COURSE NUMBERING SYSTEM

In general, courses numbered from 001–099 are those unique to the community college and are not anticipated to be transferable.

Courses numbered 100–199 generally have no prerequisite and are considered to be on the freshman level.

Courses numbered 200–299 may have prerequisites and may be considered to be on the sophomore level.

Sample Course Listing

ACC	101	Principles of Accounting I	3 cr. hrs.	3 periods
course prefix	course number	course title	semester hours of credit	hours of lecture &/or lab per week*

*Unless otherwise indicated the total periods per week will be assumed to consist of lecture periods only. When total periods per week consist of lecture and laboratory periods, the number of each are designated in parentheses: 6 periods (3 lec., 3 lab).

ACCOUNTING

ACC 50 Payroll and Applied Accounting Systems 3 cr. hrs. / 3 periods

An evaluation and development of accounting systems for small businesses, designed to meet reporting requirements for owners and governmental units. Study of payroll accounting, fringe benefits and payroll taxes.

ACC 101 Principles of Accounting I / 3 cr. hrs. / 3 periods

This course is an introduction to financial accounting. Emphasis is on the following: the communication of relevant financial information to external parties, the basic accounting model, the measurement processes involved, and the data classifications and technology which are essential to the interpretation and effective use of financial statements.

ACC 101 Principio de Contabilidad I /3 cr. hrs. / 3 periods

Este curso es una introduccion a la Contabilidad Financiera. El curso enfatiza especialmente en: la communicacion de la informacion financiera relevante a los grupos interesados, el sistema basico de Contabilidad, el proceso de evaluacion y la clasification y terminologia que son tan esenciales para la interpretacion y uso efectivo de los estados financieros.

ACC 102 Principles of Accounting II / 3 cr. hrs. / 3 periods

This is an introduction to managerial accounting. The content provides management with the necessary criteria and tools for planning, directing day-to-day operations, and controlling. Topics include full cost, differential and responsibility accounting.

ACC 201 Intermediate Accounting I / 3 cr. hrs. / 3 periods

☐ Prerequisite: ACC 102.
Study of accounting theory and practice applicable to current assets, fixed assets, liabilities, sources and application of funds. This course is for those who plan to specialize in accounting.

ACC 202 Intermediate Accounting II / 3 cr. hrs. / 3 periods

☐ Prerequisite: ACC 201.
Accounting theory and practice applicable to corporate net worth accounts, investments, reserves and income. This course is for those who plan to specialize in accounting.

ACC 203 Cost Accounting / 3 cr. hrs. / 3 periods

☐ Prerequisite: ACC 102.
Interpretation, use and analysis of cost data for management planning, coordination and control; the application of theories and concepts which underlie cost accounting and budgeting.

ACC 204 Tax Accounting / 3 cr. hrs. / 3 periods

☐ Prerequisite: ACC 101.
Course includes the study of personal income tax and tax on business operations.

ACC 299 Cooperative Accounting Training / 3 cr. hrs. 15 periods (lab)

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

ADMINISTRATION OF JUSTICE

AJS 12 Defensive Tactics / 2 cr. hrs. / 2 periods

The theory of rough and tumble fighting, fundamentals and precautions, close-in defense and attack; control over an adversary; the armed and unarmed opponent; club maneuvers; prisoner handling and control; and physical fitness.

AJS 71 Patrol Procedures / 3 cr. hrs. / 3 periods

☐ Prerequisite: AJS 172, 101 or 204, or consent of the instructor.
Patrol as one of the primary police operations; conspicuous presence as a means of suppressing crime and preserving peace; organization and functions of police patrol; methods, techniques and responsibility in patrol operations; use of special equipment; application of laws on arrest, search and seizure.

AJS 72 Crime Scene Technology I — Fingerprinting 3 cr. hrs. / 3 periods

☐ Prerequisite: AJS 204 or consent of instructor.
A survey of technical terms used in fingerprinting, pattern interpretations, classification of fingerprints, searching and filing procedures. The student also learns procedures for taking fingerprints.

AJS 76 Basic Criminalistics / 3 cr. hrs. / 3 periods

☐ Prerequisite: AJS 204 or consent of instructor.
A study and examination of the criminalistics field with concentration on the crime lab. Also a study of documents, ballistics, polygraphic techniques and comparative micrography.

AJS 101 Introduction to Administration of Justice Systems 3 cr. hrs. / 3 periods

The history and philosophy of administration of justice in America; recapitulation of the system; identifying the various sub-systems, role expectations, and their interrelationships; theories of crime, punishment and rehabilitation; ethics, education and training for professionalism in the system; career opportunities related to local criminal justice agencies.

AJS 106 Traffice Safety Functions — Vehicle Code 3 cr. hrs. / 3 periods

Traffic law enforcement and the policeman's role in overseeing the movement of vehicles and pedestrians. An introduction to the fundamentals of accident investigation and reporting, traffic court procedures, and public education for traffic safety against a background of Arizona law.

AJS 152 Beginning Marksmanship / 1 cr. hr. / 2 periods (1 lec., 1 lab)

A lecture-lab course introducing students to firearms. Moral and legal aspects of firearms are emphasized along with firearms safety. Course includes range practice. (Same as Recreation 152.)

AJS 172 Criminal Law I / 3 cr. hrs. / 3 periods

The historical development and philosophy of law, and constitutional provisions; definitions, classifications of crime and their application to the system of administration of justice; legal research, study of case law, methodology, and concepts of law as a social force.

AJS 204 Criminal Investigation and Report Preparation 3 cr. hrs. / 3 periods

☐ Prerequisite: AJS 172, 101 or consent of instructor.
Introduction to the fundamentals of modern criminal investigation; procedures and skills in search and investigation; conduct at the crime scene; collection and preservation of evidence; developing sources of information; preparation of cases for court prosecution; report-writing requirements for administration and court use.

AJS 208 Police Administration / 3 cr. hrs. / 3 periods

☐ Prerequisite: AJS 101 or consent of instructor.
An introduction to the principles of police organization, administration and service. All phases of police matters are discussed including recruitment, training, promotion, complaints, records and communications.

AJS 210 Police Community and Human Relations 3 cr. hrs. / 3 periods

☐ Prerequisite: AJS 101 and sophomore standing or consent of instructor
The police officer's role in getting and maintaining public support is reviewed; also, the recognition and understanding of community problems, community action programs, methods of coping with crisis situations, ethnic and minority cultures, environments and police operations in relation to these. (formerly AJS 110)

AJS 212 Juvenile Justice Procedures / 3 cr. hrs. / 3 periods

A study of the organization, functions and jurisdiction of juvenile agencies and courts; Arizona juvenile statutes, detention, court procedures and case disposition; custody and treatment of the offender; crime prevention methods and reporting procedures applicable to juvenile offenders.

AJS 214 Firearms / 2 cr. hrs. / 4 periods (1 lec., 3 lab)

☐ Prerequisite: Student must be a law enforcement major with previous firearms training.
Use of firearms, the moral aspects, legal provisions, safety precautions and restrictions; combat procedures for police, target analysis and range drill procedures. This course is taught on the range. Students must furnish their own pistols and ammunition.

AJS 216 Criminal Justice Procedures / 3 cr. hrs. 3 periods

☐ Prerequisite: AJS 101 or consent of instructor.
An in-depth study of the role and responsibilities of each segment within the administration of justice systems; law enforcement, judicial and corrections; a past, present and future exposure to each sub-system procedure from initial entry to final disposition; and the relationship each segment maintains with its system members.

AJS 260 Fundamentals of Crime and Delinquency 3 cr. hrs. / 3 periods

☐ Prerequisite: Recommended that student take PSY 100 or SOC 100.
A survey of the nature and extent of crime and delinquency together with the major theory and approaches to causation, prevention and treatment. Course examines current problems in dealing with crime and delinquency with an attempt to understand man in relation to these phenomena. (formerly AJS 60)

AJS 272 Criminal Law II — Evidence / 3 cr. hrs. / 3 periods

☐ Prerequisite: AJS 172 or consent of instructor.
Origin, development, philosophy and constitutional basis of evidence; constitutional and procedural considerations affecting arrest, search and seizure; kinds and degrees of evidence and rules governing admissibility; judicial decisions interpreting individual rights; and case studies.

AJS 273 Crime Scene Technology II / 3 cr. hrs. / 3 periods

☐ Prerequisite: AJS 72, 101 or 204, or consent of instructor.
Advanced procedures in the scientific identification of evidence, crime scene recording, collecting and preserving evidence; also casting and analysis of physical evidence.

AJS 277 Advanced Criminalistics / 3 cr. hrs. / 3 periods

☐ Prerequisite: AJS 76 or consent of instructor.
Examined are the fields of firearms identification, pathology, toxicology, related matters and courtroom procedures.

AJS 299 Cooperative Administration of Justice Training 3 cr. hrs. / 15 periods (lab)

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

AIR CONDITIONING

ACD 101 Air Conditioning Fundamentals / 3 cr. hrs. 3 periods

Emphasis is on detail and specific treatment of air conditioning and problem solving techniques. Areas covered are psychrometry, ventilation, heating and cooling load calculations, dew point determination and precision measurement of air temperatures, quantities and velocities.

ACD 120 Air Conditioning Phase I / 4 cr. hrs. / 6 periods (3 lec., 3 lab)

☐ Prerequisite: Or concurrent with ACD 101, MTH 110.
Emphasis is on cooling and heating components and application; basic electricity; tools in heating and cooling maintenance; service and maintenance of electronic air cleaners and electronic humidifiers.

ACD 125 Air Conditioning Phase II / 4 cr. hrs. / 6 periods (3 lec., 3 lab)

☐ Prerequisite: ACD 120.
Course covers the control of electrical circuits, use of electrical test instruments, troubleshooting of gas and electric cooling.

ACD 210 Air Conditioning Phase III / 4 cr. hrs. / 6 periods (3 lec., 3 lab)

☐ Prerequisite: ACD 125.
Concentration is on light commercial equipment including gas-electric packages, heat pumps and three-phase power. Live equipment is used to teach service and repair work.

ACD 220 Air Conditioning Phase IV / 4 cr. hrs. / 6 periods (3 lec., 3 lab)

☐ Prerequisite: ACD 210.
Stress is on the more complicated larger units including multi-zone and single-zone rooftop pieces of equipment, and controls on these units. Also included is an introduction to pneumatic controls as used on some models of equipment.

ACD 250 Air Conditioning Estimating I / 3 cr. hrs. 3 periods

☐ Prerequisite: MTH 120.
The basic concepts of computing material costs from actual construction drawings through use of handbooks and formulas; pricing of all items associated with sheet metal products and air conditioning units.

ACD 260 Air Conditioning Estimating II / 3 cr. hrs. 3 periods

☐ Prerequisite: ACD 250.
Bid preparation and procedures including material quantity, make-up sheets, equipment usage, manpower requirements, labor rates, amount of contract work, progress reports, material ordering procedures, overhead and profits.

ACD 270 Air Movement and Design / 4 cr. hrs. / 6 periods (3 lec., 3 lab)

☐ Prerequisite: ACD 210, MTH 120, SML 110.
Residential area includes load calculation, duct sizing and equipment selection. Commercial area includes specialized types of equipment such as make-up air units and exhaust air.

ACD 299 Cooperative Air Conditioning Training / 3 cr. hrs. 15 periods (lab)

A supervised cooperative work program for students in an air conditioning occupation for a minimum of 15 hours per week. Course may be repeated.

ANTHROPOLOGY

ANT 103 Cultural Geography / 4 cr. hrs. / 6 periods (3 lec., 3 lab)

This course is about people, where and how they live and some of the reasons why they live as they do. Race, language, religion and the physical environment are interwoven and changed by time to produce many different economic and settlement patterns. (Same as Earth Sciences 103.)

ANT 110 Introduction to Cultural Anthropology / 3 cr. hrs. 3 periods

A survey of cultural anthropology and linguistics; and an introduction to the comparative study of cultures. Emphasis is on non-literate cultures.

ANT 120 Introduction to Archaeology & Physical Anthropology / 3 cr. hrs. / 3 periods

An exploration of the cultural and biological evolution of the human species from its earliest origins, based on our understanding of the archaeological and fossil record.

ANT 140 Contemporary Indian Groups of the Southwest 3 cr. hrs. / 3 periods

A study of contemporary Indian cultures of the Southwest with emphasis on Arizona.

ANT 144 The Mexican-American in Transition / 3 cr. hrs. 3 periods

What is it like to be a Mexican-American in today's society? Problems resulting from differences in cultures, values and needs are examined through class discussion and participation in related activities in the community.

ANT 145 Papago History and Culture / 3 cr. hrs. / 3 periods

Where have the Papago people been, who are they, where are they, where are they going? In answering these questions, the class examines the history and culture of the Papago. (Same as History 145.)

ANT 146 Culture and Personality of the Mexican-American 3 cr. hrs. / 3 periods

A review of how the culture and personality of the Mexican-American differs from others and what it means to the individual. Slide and lecture discussions of art from the Renaissance

ANT 148 History of Indians of North America / 3 cr. hrs. 3 periods

Origin and distribution of native populations of North America; and the historical development and interrelations of cultures. (Same as History 148.)

ANT 149 History and Culture of the Mexican-American in the Southwest I / 3 cr. hrs. / 3 periods
Who is the Mexican-American? What is his cultural heritage, and what has happened to it in the United States? (Same as History 149.)

ANT 150 Afro-American History and Peoples / 3 cr. hrs. 3 periods
What does the Afro-American have to face because he is a Black in American society? His past, present and future are examined. (Same as History 150.)

ANT 160 History and Peoples of Latin America / 3 cr. hrs. 3 periods
The history of Latin America from the pre-Colombian period to the present with emphasis on the evolution of nationalism through the struggles for economic, cultural, political and social freedoms. (Same as History 160.)

ANT 170 History and Peoples of Africa / 3 cr. hrs. 3 periods
A survey of the political and cultural history of Africa, south of the Sahara. (Same as History 170.)

ANT 210 Cultural Anthropology / 3 cr. hrs. / 3 periods
☐ Prerequisite: ANT 110.
An in-depth exploration of methods used in studying and comparing cultures, with particular attention given to anthropological theory and methods. Selected topics will be pursued.

ANT 220 Physical Anthropology / 3 cr. hrs. / 3 periods
An in-depth inquiry into the origin, evolution and future of the human species. The course centers on a comprehensive study of human evolution, including the topics of human variability, heredity and environment, mechanisms of evolution, race and racism, and non-human primates.

ANT 223 The Anthropology of Music & Dance in Contemporary Society / cr. hrs. / 3 periods
☐ Prerequisites: Sophomore standing. Prior course work in the social sciences, or consent of instructor.
An in-depth study of the plural structure of American society focusing on the music (ethmusicology) and dance styles (ethnochorography) present in the subcultures of the Tucson community.

ANT 225 Archaeology / 3 cr. hrs. / periods
The history of archaeological research plus a survey of the concepts and methods used for studying prehistoric cultures. Students also learn how archaeologists reconstruct human history from materials found in the field.

ANT 250 Archaeology Laboratory / 3 cr. hrs. / 9 periods (lab)
☐ Prerequisite: ANT 110 or 220.
Students have an opportunity to receive research and field experience in the various sub-fields of anthropology. Emphasis is placed on applying the tools and methodology used by anthropologists to solving research problems designed by the students.

ANT 290 Individual Studies in Anthropology / 3 cr. hrs. 9 periods (lab)
☐ Prerequisite: ANT 110 or 220 and consent of instructor.
The student independently pursues his or her further development in anthropology with the help of a faculty member.

ART FOR PERSONAL DEVELOPMENT

APD 91 Art for Personal Development / 2–3 cr. hrs. 4–5 periods (1–2 lec., 3 lab)
A non-transfer workshop course including sections with emphasis on drawing, painting, sculpture, ceramics, photography, silversmithing.

ART

ART 60 Principles of Lapidary / 3 cr. hrs. / 3 periods (1 lec., 2 lab)
A practical laboratory course in the identification, polishing and mounting of semi-precious materials. (Same as Earth Sciences 60.)

ART 100 Basic Design / 3 cr. hrs. / 5 periods (2 lec., 3 lab)
An introduction to design and the study of light, color, pattern, space and operation of the sensory receptors. Students may work with graphics and model construction.

ART 110 Drawing I / 3 cr. hrs. / 5 periods (2 lec., 3 lab)
☐ Prerequisite: ART 100 or concurrent enrollment.
An exploration of visual experience and communication, and also an introduction to the problems of drawing and concept, offering extensive studio practice and experimentation.

ART 115 Color and Design / 3 cr. hrs. / 5 periods (2 lec., 3 lab)
An extension of design principles introduced in ART 100 with emphasis on color theory and relationships. Classroom projects utilizing various media are offered.

ART 120 Three-Dimensional Design / 3 cr. hrs. / 5 periods (2 lec., 3 lab)
A study of processes utilized for design in three dimensions. Materials used are wax, plaster, wood, stone, aluminum and bronze.

ART 130 Art and Culture I / 3 cr. hrs. / 3 periods
Slide and lecture discussions of art forms from prehistoric art to the Renaissance.

ART 131 Art Culture II / 3 cr. hrs. / 3 periods
Slide and lecture discussions of art form fro mthe Renaissance to the Nineteenth Century. ART 130 is not a prerequisite to ART 131.

ART 140 Photography I / 3 cr. hrs. / 5 periods (2 lec., 3 lab)
☐ Prerequisite: ART 100 or concurrent enrollment.
The basic principles and techniques of photography. Emphasis is on photography as a means of communication and self-expression. Includes developing, printing, enlarging, image concepts and critiques.

ART 141 Photography II / 3 cr. hrs. / 5 periods (2 lec., 3 lab)
☐ Prerequisite: ART 140 or consent of instructor.
An expansion of still photography and/or film experience. Individual or group projects involve slides, book production, 8mm motion pictures and video-tape presentations. Can be repeated for credit.

ART 143 Commercial Photography / 3 cr. hrs. / 5 periods (2 lec., 3 lab)
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. (formerly GRC 80)

ART 160 Ceramics I / 3 cr. hrs. / 5 periods (2 lec., 3 lab)
A study of clay, glazes and firing including hand-built and wheel-thrown work.

ART 170 Metalwork / 3 cr. hrs. / 5 periods (2 lec., 3 lab)
An exploration of the basic tools and techniques used in the fabrication of jewelry and other metalwork. Includes enameling, casting and hollow-ware.

ART 180 Weaving I / 3 cr. hrs. / 5 periods (2 lec., 3 lab)
The study of finger weaving, rigid heddle loom (back strap), and two shed frame loom. Drafting of textiles and weaving of a finished pattern on a four harness loom are included.

ART 181 Fabric Design I / 3 cr. hrs. / 5 periods (2 lec., 3 lab)
Provides an understanding of creative and practiced aspects of fabric design through the study of texture, color application and cultural emphasis as evidenced in ethnic costumes. Applique, patchwork, embroidery, braids and trims are considered.

ART 190 Leatherwork / 3 cr. hrs. / 5 periods (2 lec., 3 lab)
Provides an understanding of various properties of leathers and the development of skills in the use of basic leatherworking tools. Projects are selected to meet individual interests and levels of skill development.

ART 210 Drawing II / 3 cr. hrs. / 5 periods (2 lec., 3 lab)
☐ Prerequisite: ART 100, 110.
Advanced study of graphic media in two dimensions with emphasis on various techniques and materials.

ART 212 Printmaking / 3 cr hrs. / 5 periods (2 lec., 3 lab)
☐ Prerequisite: ART 100, 110 or consent of instructor.
A study of printmaking processes for synthesis into a form of personal expression. Emphasis is on monotypes, etching, intaglio, block printing and silk screen processes. Students may choose to work in areas of particular interest.

ART 213 Life Drawing / 3 cr. hrs. / 5 periods (2 lec., 3 lab)
☐ Prerequisite: ART 100 and 110 recommended.
Course is concerned with the acquisition of proficiency in relating the human figure to two dimensions, utilizing the result as a graphic vehicle of expression. Students have opportunities to work in various media.

ART 215 Painting / 3 cr. hrs. / 5 periods (2 lec., 3 lab)
☐ Prerequisite: ART 100, ART 110 and 115 recommended.
A studio course concerned with the exploration of basic painting techniques and processes.

ART 230 History of Photography / 3 cr. hrs. / 3 periods
An in-depth study of the history of photography from its inception to the present, and an analysis of its impact on the visual arts and society. Technical developments, aesthetic concerns and individual photographers are studied.

ART 231 History, Philosophy, Psychology of Art and Design 4 cr. hrs. / 4 periods
A study of particular movements, periods, ideas and problems in art and design are arranged each semester by separate sections or for individual study, according to need.

ART 260 Ceramics II / 3 cr. hrs. / 5 periods (2 lec., 3 lab)
☐ Prerequisite: ART 160 or the equivalent.
A follow-up to ART 160 for those interested in further developing skills in hand building, throwing and decorating.

ART 299 Cooperative Art Training / 3 cr. hrs. / 15 periods (lab)
A supervised cooperative work program for students in an art occupation for a minimum of 15 hours per week. Course may be repeated.

ASTRONOMY

AST 101 Introduction to Astronomy I / 3 cr. hrs. 3 periods*
A descriptive introduction to the science of astronomy covering observational and historical aspects and also astronomical tools. Special emphasis on the solar system.

AST 102 Introduction to Astronomy II / 3 cr. hrs. 3 periods*
Continuing an introductory description of astronomy with special emphasis on stars and stellar properties, galaxies, cosmology and current theories.
*AST 101 and AST 102 may be taken as a lecture course only by general interest students. Students taking astronomy for the Liberal Arts science requirement should take both lecture and laboratory.

AST 111 Introduction to Astronomy I Laboratory / 1 cr. hr. 3 periods (lab)
Laboratory for AST 101.

AST 112 Introduction to Astronomy II Laboratory / 1 cr. hr. 3 periods (lab)
Laboratory for AST 102.

AUTOMOTIVE TECHNOLOGY

AUT 101 Automotive Maintenance / 2 cr. hrs. / 3 periods (1 lec., 2 lab)
For those who have little or no automotive service experience. Covered are the proper techniques of routine vehicle maintenance.

AUT 111 Automotive Body and Fender Repair / 3 cr. hrs. 4 periods (2 lec., 2 lab)
The fundamentals of sheet metal repair, using basic metal-working tools. Instruction is limited to minor damage repair, parts replacement and alignment.

AUT 120 Internal Combustion Engines / 4 cr. hrs. 5 periods (3 lec., 2 lab)
Construction, design, operating principles, diagnosis procedures and common repairs of modern internal combustion engines. Stress is on the interrelationship of various engine systems.

AUT 122 Automotive Engine Service Repair / 3 cr. hrs. 5 periods (2 lec., 3 lab)

☐ Prerequisites: AUT 120.

Students learn procedures for removing and replacing camshafts, crankshafts, timing chains, insert bearings, piston rings and short blocks, as well as the procedures for valve grinding at the job entry level as part of the certificate program in Automotive Engine Repair.

AUT 125 Automotive Engine Tune-Up / 4 cr. hrs. / 5 periods (3 lec., 2 lab)

☐ Prerequisite: AUT 120 and 128; AUT 128 may be taken concurrently.

The interpretation and application of electric test equipment results to maintain engine efficiency and exhaust emission. Proper tune-up procedures are stressed.

AUT 128 Automotive Electricity I / 3 cr. hrs. / 4 periods (2 lec., 2 lab)

The fundamentals of electricity and electrical circuits as applied to the automobile.

AUT 129 Automotive Electricity II / 3 cr. hrs. / 4 periods (2 lec., 2 lab)

☐ Prerequisite: AUT 128.

Diagnosis and repair of automotive electrical systems using modern diagnostic equipment.

AUT 132 Automatic Transmissions I / 4 cr. hrs. / 5 periods (3 lec., 2 lab)

The identification and classification of all parts and principles of hydraulics, planetary gear assemblies, multiple clutches and bands. At least one complete transmission overhaul is completed during the semester.

AUT 133 Automatic Transmissions II / 4 cr. hrs. / 5 periods (3 lec., 2 lab)

☐ Prerequisite: AUT 132.

Hydraulic circuits and controls, hydraulic pressure controls, diagnosis and repair of hydraulic pressure loss and internal oil leaks. At least one complete transmission overhaul is completed during the semester.

AUT 136 Automotive Drive Line / 4 cr. hrs. / 5 periods (3 lec., 2 lab)

The construction, operation, diagnosis and repair of manual shift transmissions, clutches, universal joints and differentials.

AUT 138 Automotive Chassis / 4 cr. hrs. / 5 periods (3 lec., 2 lab)

Front wheel alignment, wheel balancing, suspension overhaul, manual and power steering gears.

AUT 140 Automotive Brakes / 4 cr hrs. / 5 periods (3 lec., 2 lab)

The diagnosis and repair of automotive brakes. Includes hydraulic systems, drum and disc brakes and power brakes.

AUT 142 Automotive Air Conditioning / 3 cr. hrs. 4 periods (2 lec., 2 lab)

Fundamentals of refrigeration and automotive application of refrigeration. Stressed are system operation and diagnosis.

AUT 200 Performance Engines / 3 cr. hrs. / 3 periods

☐ Prerequisite: Second year level in automotive program or proven ability to diagnose and repair standard vehicles. A sound math background is helpful.

Engine design theory and construction, and modifications used to improve power output. Course also covers related drive train and suspension and suspension modifications necessitated by increased power.

AUT 210 Independent Study in Automotive / 5 cr. hrs. 15 periods (lab)

☐ Prerequisite: 30 credit hours in an approved automotive technology program.

The student is permitted latitude in pursuing special interest projects related to the automotive field. A written technical report is required.

AUT 299 Cooperative Automotive Training / 3 cr. hrs. 15 periods (lab)

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

AVIATION MECHANICS

AVM 88 Preventive Maintenance for Pilots / 3 cr. hrs. 3 periods

Topics include engine design and function, aircraft design and function, safety aspects in the operation of aircraft, federal aviation regulations, and an examination of the industry.

AVM 220 Airframe Mechanics / 6 cr. hrs. / 6 periods

☐ Prerequisite: 30 months' experience concurrently performing the duties of airframe and powerplant maintenance and instructor's approval; or 18 months of experience performing the duties appropriate to this rating and instructor's approval.

Covered are aircraft rigging, weight and balance, woodwork, welding, fabric coverings, sheet metal, hydraulics, aircraft electrical systems, environmental systems, instrumentation and federal aviation regulations.

AVM 230 Powerplant Mechanics / 5 cr. hrs. / 6 periods (5 lec., 1 lab)

☐ Prerequisite: 30 months' experience concurrently performing the duties of airframe and powerplant maintenance and instructor's approval; or 18 months performing the duties appropriate to this rating and instructor's approval.

Reciprocating and jet engine design and function, electrical systems, fuel systems, induction systems, lubrication systems and propellers.

BUSINESS

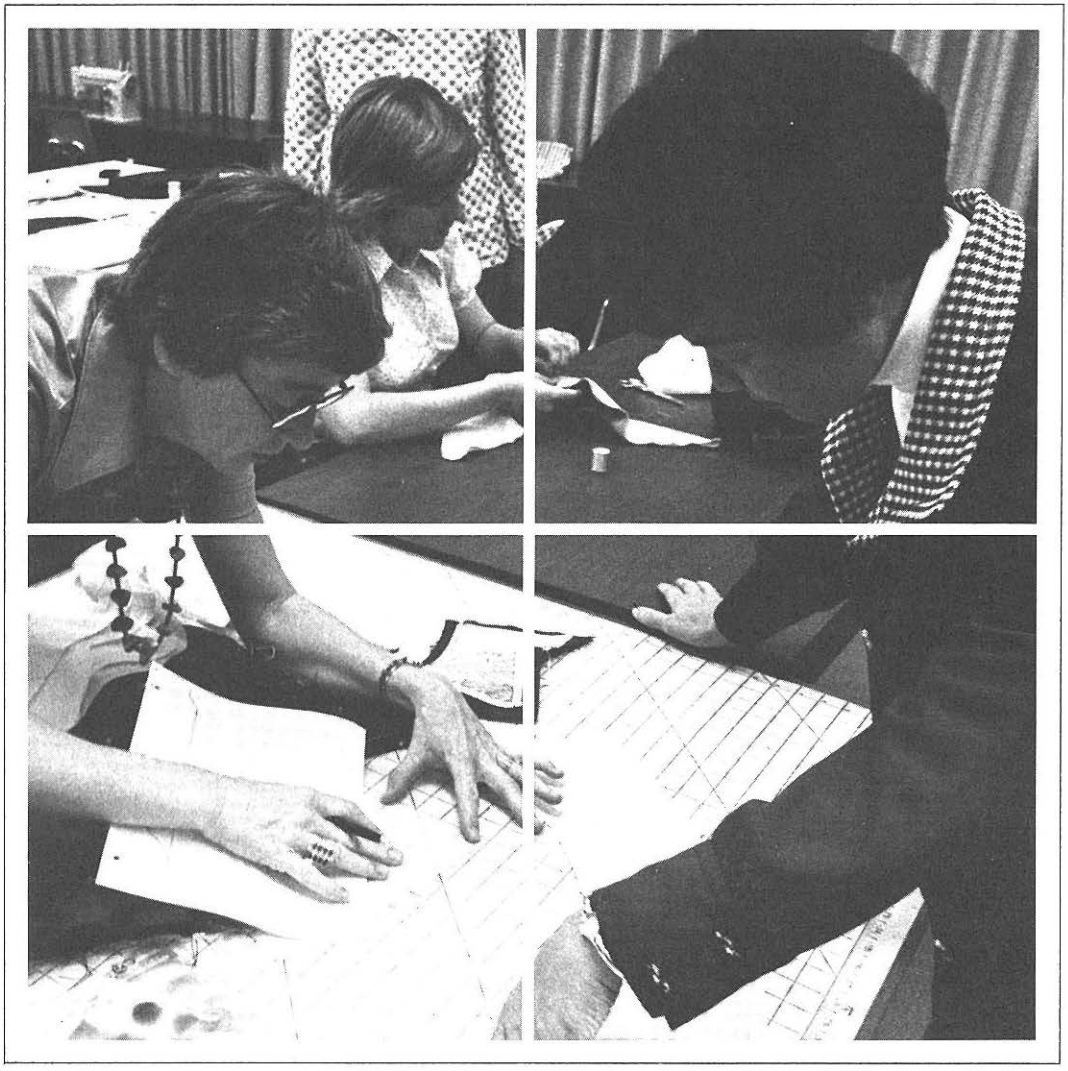
BUS 51 Mathematics of Business / 3 cr. hrs. / 3 periods

☐ Prerequisites: MTH 60.

Basic mathematical procedures are applied to business problems. Includes mark-up, payroll, simple and compound interest.

BUS 100 Introduction to Business / 3 cr. hrs. / 3 periods

A survey of fundamental characteristics and functions of modern business involving business principles, marketing, record keeping and risks; and a historical review of business development including the viewpoint of various ethnic groups.



BUS 200 Business Law I / 3 cr. hrs. / 3 periods
Covered are such legal topics as the nature and sources of business law, the judicial system, law of contracts, torts, agency, consumer credit protection and sales. (formerly BUS 110)

BUS 201 Business Law II / 3 cr. hrs. / 3 periods
☐ Prerequisite: BUS 200.
A continuation of BUS 200 and covers such legal topics as the law of personal property, real property, partnerships, corporations, government regulation of business, and environmental law. (formerly BUS 160)

BUS 205 Statistical Methods in Economics and Business I 3 cr. hrs. / 3 periods
☐ Prerequisite: MTH 170 or concurrent enrollment.
Introduces student to statistical techniques and their application to economic and business decision making. Covers data structures, frequency distributions, linear regression, probability and probability distributions, and sampling.

BUS 206 Statistical Methods in Economics and Business II 3 cr. hrs. / 3 periods
☐ Prerequisite: BUS 205.
Continuation of BUS 205. Covers the testing of hypotheses, Chi-Square distributions, analysis of variance, regression and correlation, non-parametric statistics, sample survey methodology, and Bayesian inference.

CHEMISTRY

CHM 50 Topics in Physical Science / 4 cr. hrs. / 4 periods
☐ 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.

CHM 101 Introductory Chemistry I / 4 cr. hrs. / 6 periods (3 lec., 3 lab)
Basic chemistry and its relationship to everyday experiences. Classification and structure of matter along with basic principles of chemical reactions and their environmental and societal impacts. Designed to meet the needs and interests of non-science majors.

CHM 102 Introductory Chemistry II / 4 cr. hrs. / 6 periods (3 lec., 3 lab)
Continuation of CHM 101. Chemistry and ourselves. Organic chemistry as it relates to consumer products and pollution of our environment. Biochemistry and physiochemistry and their relationship to medicines, drugs, health, and food products.

CHM 110 Fundamentals of Chemistry I / 4 cr. hrs. 6 periods (3 lec., 3 lab)
The classification, structure and general chemical behavior of inorganic matter as a basis for the study of some life processes. Adapted to the needs of nursing and health science students.

CHM 111 Fundamentals of Chemistry II / 4 cr. hrs. 6 periods (3 lec., 3 lab)
The classification, structure and general chemical behavior of organic and biochemical systems as a basis for the study of some important life processes. Adapted to the needs of nursing and health students.

CHM 120 General Chemistry I / 4 cr. hrs. / 6 periods (3 lec., 3 lab)
☐ Prerequisite: MTH 130 or consent of instructor.
This course includes a development of atomic structure and bonding with some historical input, fundamental chemical and scientific relationships, chemical reactions and energy, states of matter and solutions.

CHM 121 General Chemistry II / 4 cr. hrs. / 6 periods (3 lec., 3 lab)
☐ Prerequisite: CHM 120.
A continuation of CHM 120 with emphasis on certain chemical concepts such as equilibrium, kinetics, acids and bases, complexions and oxidation-reduction.

CHM 130 Concepts in Chemistry / 3 cr. hrs. / 4 periods (2 lec., 2 lab)
The study of basic concepts in chemistry and their applications. For elementary education majors.

CHM 240 Oragnic Chemistry I / 4 cr. hrs. / 6 periods (3 lec., 3 lab)
☐ Prerequisite: CHM 121 or consent of instructor.
An integrated course in the fundamentals of organic chemistry covering classification, occurrence, synthesis, analysis and reaction mechanisms of important classes of organic compounds. Alkanes, Alkenes, Aromatics and Arenes are classes stressed in the first semester.

CHM 241 Organic Chemistry II / 4 cr. hrs. / 6 periods (3 lec., 3 lab)
☐ Prerequisite: CHM 240 or consent of instructor.
A continuation of CHM 240 with emphasis shifting to synthesis, and the use of instrumentation as a means of identification. The remaining classes of organic compounds are discussed with minimal emphasis on biochemistry.

CHM 299 Cooperative Chemistry Training / 3 cr. hrs. 15 periods (lab)
A supervised cooperative work program for students in a chemistry occupation for a minimum of 15 hours per week. Course may be repeated.

COMPUTER SCIENCE

CSC 50 Key Punch, Data Entry and Procedures / 3 cr. hrs. 4 periods (3 lec., 1 lab)
☐ Prerequisite: Typing speed 40 wpm or consent of instructor.
Student learns to create and use program drum cards, to punch numeric and alphanumeric data, and computer program formats. Both the key punch 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 key punch department.

CSC 55 Advanced Key Punch / 3 cr. hrs. / 4 periods (3 lec., 1 lab)
☐ Prerequisite: CSC 50 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.

CSC 100 Introduction to Computers / 3 cr. hrs. / 4 periods (3 lec., 1 lab)

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 a simple language.

CSC 105 Survey of Data Processing / 3 cr. hrs. / 3 periods

A history and overview of data processing with emphasis on the use of computers as tools and their applications in business, industry, social and natural sciences. Students are introduced to at least one computer language and are acquainted with the social impact of man's relationships to computers. Not for programming or engineering majors.

CSC 140 Fortran IV Programming / 1–3 cr. hrs. / 4 periods (3 lec., 1 lab)

Application of programming to the numerical solution of problems. Includes flow charting, block diagramming, documentation and writing of programs. Problems are suited to business, engineering or math, depending upon students' objectives. First half of course satisfies the one unit transfer credit.

CSC 150 Computer Operations / 3 cr. hrs. / 4 periods (3 lec., 1 lab)

Instruction and lab experience in computer operations 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.

CSC 155 Systems Operations and Procedures / 3 cr. hrs. 4 periods (3 lec., 1 lab)

☐ Prerequisite: CSC 100, 150.
A study of control statements and functions needed for computer operation. Multi-programming considerations, system flow, device assignment, labels on tape and disk, directories, text editors and utility programs are covered. Hands-on operation required.

CSC 160 COBOL Programming / 3 cr. hrs. / 4 periods (3 lec., 1 lab)

☐ Prerequisite: CSC 100 or consent of instructor.
Comprehensive study and practice of writing programs in COBOL, standard business language. Proper documentation and programming standards are included as are programming techniques to utilize auxiliary storage devices.

CSC 195 Job Entry Procedures / 1 cr. hr. / 1 period

Applying for employment, letter and resume writing, interviewing and related topics.

CSC 196 Work Standards and Job Attitudes / 1 cr. hr. 1 period

Includes ethics, work relationships and human relations using role playing.

CSC 197 Key Punch for Programmers and Operators 1 cr. hr. / 1 period

☐ Prerequisite: Typing speed of 40 wpm or consent of instructor.
Students learn the keyboard, functions of special keys, use of program drum cards to punch programs, and procedures to correct error cards.

CSC 198 Data Processing Projects / 2 cr. hrs. / 6 periods

☐ Prerequisite: Consent of instructor.
Credit is given for practical work experience on assigned data processing projects in key punching, controls and operations.

CSC 250 Introduction to Numerical Control / 2 cr. hrs. 2 periods

☐ Prerequisite: MTH 120, MAC 120, or approval of instructor.
The student is introduced to numerical control and its application to machines, processes and manufacturing processes. The basics of manual programming for point-to-point and absolute position machines are covered. Occupational opportunities also are reviewed. (Same as Machine Tool Technology 250.)

CSC 255 Numerical Controlled Machines / 3 cr. hrs. 4 periods (2 lec., 2 lab)

☐ Prerequisite: MAC 120, 250.
This course starts continuous path programming and computer aided programming. Calculations are made manually and by computer for two and three axis numerical control machines. Numerical control languages are taught. (Same as Machine Tool Technology 255.)

CSC 260 Advanced COBOL and File Management 4 cr. hrs. / 6 periods (4 lec., 2 lab)

☐ Prerequisite: CSC 160.
Advanced COBOL programming techniques and languages are thoroughly explored. Report writer, sort verbs, file organization, debugging aids and interaction with the operating system are included.

CSC 270 Basic Assembly Language Programming 3 cr. hrs. / 4 periods (3 lec., 1 lab)

☐ Prerequisite: CSC 160 or consent of instructor.
A study of an assembly level language and its relationship to machine language. Emphasis is on standard and decimal instruction sets, sub-routine control and linkage. Debugging techniques and basic input/output control system applications are covered. Includes lab experience.

CSC 274 MACRO-10 Assembly Language / 4 cr. hrs. 6 periods (4 lec., 2 lab)

☐ Prerequisite: CSC 260, 270, or consent of instructor.
A study of fixed work machine language formats with emphasis on binary arithmetic instructions, variations of logical and control instructions and word-bit-byte manipulations. File creations using sequential and random organizations are also covered. Students, in addition, use interactive terminal input/output conversing with a DEC-10 to test their programs and various debugging techniques.

CSC 280 Systems Analysis / 3 cr. hrs. / 3 periods

☐ Prerequisite: CSC 160 or consent of instructor.
Tools of systems analysis to be covered include documentation methods (systems flowchart, decision table, etc.), user communication, record layout, code design, file design (batch and on-line data base concepts), document design (source and printed output). Selected business system applications are used to apply the above tools.

CSC 281 Systems Design / 3 cr. hrs. / 3 periods

☐ Prerequisite: CSC 280.
Application of the tools of systems analysis covered in CSC 280 are used to design a total system. A feasibility study is prepared to present alternatives or a systems proposal is prepared to recommend a course of action.

CSC 290 Systems Programming Theory / 3 cr. hrs. 4 periods (3 lec., 1 lab)

☐ Prerequisite: CSC 274 or consent of instructor.
The writing of compilers, operating systems and utility programs. Sorting and timing techniques included.

CSC 294 Teleprocessing Concepts / 3 cr. hrs. / 4 periods (3 lec., 1 lab)

☐ Prerequisite: CSC 274, 281, or consent of instructor.
Topics covered are terminology of teleprocessing systems, hardware characteristics, considerations of direct access, back-up and recovery procedures, buffering and queuing techniques.

CSC 296 Operating Systems / 3 cr. hrs. / 4 periods (3 lec., 1 lab)

☐ Prerequisite: CSC 270, 274, or consent of instructor.
A study of the design and functions of a computer's operating system. Emphasizes system generation as affected by computer size, configuration, needed library routines and macros. Students work through an actual generation of an operating system.

CSC 298 Data Processing Projects II / 1–5 cr. hrs. 15 periods

☐ Prerequisite: Consent of instructor.
Credit is given for practical work experience on assigned data processing projects.

CSC 299 Cooperative Computer Science Training 3 cr. hrs. / 15 periods (lab)

A supervised cooperative work program for students in a computer science occupation for a minimum of 15 hours per week. Course may be repeated.

DENTAL ASSISTING

DAT 61 Introduction to Dental Assisting / 3 cr. hrs. 3 periods

☐ Prerequisite: Consent of program coordinator.
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; body structure, tissue and tooth development; methods of sterilization; how to select and perform sterilization of instruments and equipment.

DAT 62 Dental Assisting I / 3 cr. hrs. / 7 periods (1 lec., 6 lab)

☐ Prerequisite: Consent of program coordinator.
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.

DAT 63 Oral Radiography / 3 cr. hrs. / 5 periods (2 lec., 3 lab)

☐ Prerequisite: Consent of program coordinator.
Students learn the importance of dental roentgenography as a diagnostic aid; develop knowledge of safety factors when exposing radiograms; learn to expose, process, mount, label and file radiographs; and learn to recognize radiographs that are acceptable for diagnosis.

DAT 64 Dental Materials / 3 cr. hrs. / 5 periods (2 lec., 3 lab)

☐ Prerequisite: Consent of program coordinator.
Course enables students to understand the chemical and physical properties of dental materials; the use of materials in specific operative procedures; units of measure and use of various measuring devices; use and maintenance of all related equipment.

DAT 65 Clinical Procedures I / 3 cr. hrs. / 8 periods (lab)

☐ Prerequisite: Consent of program coordinator.
Students apply their acquired skill of routine and special procedures in dental assisting under the direct supervision of a dentist and the faculty.

DAT 66 Dental Assisting II / 2 cr. hrs. / 4 periods (1 lec., 3 lab)

☐ Prerequisite: Satisfactory completion of DAT 61 through 65.
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 total health.

DAT 67 Dental Assisting III / 5 cr. hrs. / 9 periods (3 lec., 6 lab)

☐ Prerequisite: Satisfactory completion of DAT 61 through 65.
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.

DAT 68 Clinical Procedures II / 6 cr. hrs. / 16 periods (lab)

☐ Prerequisite: Satisfactory completion of DAT 61 through 65.
A combination of DAT 65. Students apply advanced skills in private dental offices under the direct supervision of the dentist and instructor.

DENTAL LABORATORY TECHNOLOGY

DLT 101 Dental Morphology / 3 cr. hrs. / 5 periods (2 lec., 3 lab)

☐ Prerequisite: Consent of coordinator.
A study of the development of teeth, including the outlines of hard, bony, and soft areas of the jaws as related to denture construction. Principles in tooth design, and balanced occlusion with regard to normal and abnormal ridge relationship are stressed. Plaster sculpture in the production of a full complement of anatomical teeth.

DLT 102 Non-Metallic Dental Materials / 3 cr. hrs. 3 periods

☐ Prerequisite: Consent of coordinator.
A study of the principles of chemistry and physics as related to dental materials. Products studies include impression and duplicating materials; topics covered include plaster of paris and plaster, plastic and elastic duplicating materials, denture base materials, acrylic resin teeth, dental waxes, separating media and dental porcelain.

DLT 103 Complete Dentures / 4 cr. hrs. / 12 periods (lab)

☐ Prerequisite: Consent of coordinator.
This course provides the students with a complete understanding of the relationship between the upper and lower dentures as interpreted on a functional articulator. Casting of models, trays, bite blocks, setting up of edentulous dentures, in balanced occlusion; investing, packing, curing, and finishing of dentures in methyl-methacrylate.

DLT 104 Dental Laboratory I / 3 cr. hrs. / 5 periods (2 lec., 3 lab)

☐ Prerequisite: DLT 101, 102, 103.
The student will study the chemistry and metallurgy of epoxy materials and amalgam alloys, the compositions of plating solutions and principles of electro-plating. Wrought metal bars and clasps as related to laboratory procedure is discussed and analyzed. A full complement of teeth carved from plaster blocks, and a full complement of teeth sculptured from wax ivorine blocks, natural size, and set up to occlusion will be required.

DLT 105 Partial Dentures Reconstruction / 4 cr. hrs. 12 periods (lab)

☐ Prerequisite: DLT 101, 102, 103.
A course in the construction of wrought metal lingual bars and clasps; investing and soldering techniques of bilateral appliances. Processing the partial dentures in acrylic in three techniques; the bank, the split and the carry-over. Fabrication of dies of inlays and abutments are taught. Repair, relines and reconstruction of dentures.

DLT 201 Dental Laboratory II / 3 cr. hrs. / 5 periods (2 lec., 3 lab)

☐ Prerequiste: Satisfactory completion of first year courses.
A study of the principles of fixed bridgework, abutments, inlays and crowns. The theory of spanning spaces with various types of artificial teeth in complete fixed and cantilever bridgework. The importance of stress, function and aesthetics in the design of fixed bridgework is emphasized. Tooth carvings which are taught in previous semester are employed. The handling of wax patterns, investments, casting techniques, making of dies from impressions; techniques in waxing, investing, casting of inlays, three-quarter, crown, full crown and veneers.

DLT 202 Dental Metallurgy I / 3 cr. hrs. / 3 periods

☐ Prerequisite: Satisfactory completion of first year courses.
Study of precious metals, used by the dental technician. Topics include physical properties of metals, crystal structure, manufacturing processes, theory of alloys, soldering, casting investments, heat treatment of gold alloys.

DLT 203 Fixed Bridgework / 4 cr. hrs. / 13 periods (lab)

☐ Prerequisite: Satisfactory completion of first year courses.
A course designed to develop a complete knowledge of fixed bridgework. Waxing, investing and finishing of simple and complex inlays, full crowns, veneers, and ¾ crowns. Construction of bridges of various design utilizing metal porcelain, and plastic, separate or in conjunction with one another.

DLT 204 Dental Laboratory III / 3 cr. hrs. / 5 periods (2 lec., 3 lab)

☐ Prequisite: DLT 201, 202, 203.
The principles of surveying, the design of cast partials, and the technical applications of metallurgy and engineering principles are discussed and analyzed. A study of the composition and physical properties of gold and chrom-cobalt alloys are emphasized with special reference to their working qualities. All types of known designs and principles of retention are employed in the construction of removable bridgework.

DLT 205 Dental Metallurgy II / 4 cr. hrs. / 8 periods (2 lec., 6 lab)

☐ Prequisite: DLT 201, 202, 203.
Study of cast gold alloys, abnormal castings, base metal casting alloys, used by the technician and metallographic techniques. Skills will be developed in the casting of gold and non-ferrous metals. Upper and lower partial frame structures and constructed in cast gold and cast chrom-cobalt alloy.

DLT 206 Ceramics / 2 cr. hrs. / 6 periods (lab)

☐ Prerequisite: DLT 201, 202, 203.
This course is designed to develop skills in porcelain and porcelain on gold techniques. Low and high fusing porcelains, their vitrification, control of form, control of color, design of the metal structure, and application of stain and glaze are emphasized. A study of the composition and physical properties as well as the fundamentals of manipulation of the porcelain and gold is discussed and demonstrated.

DESIGN

DES 111 Industrial Graphics / 3 cr. hrs. / 4 periods (3 lec., 1 lab)

Course concentrates on the representation of products, equipment and exteriors/interiors through shaded and line drawings in several media.

DES 150 Functional Design I / 3 cr. hrs. / 4 periods (3 lec., 1 lab)

Designs of objects and systems are studied and solutions then developed to satisfy the problems encountered. Students select their own area of design interest.

DES 151 Light-Weight Structure Design / 3 cr. hrs. 4 periods (3 lec., 1 lab)

Study of design concepts and application of various types of practical and inexpensive methods of shelter, including domes, pre-stressed membranes, inflammables and other innovative types of shelter.

DES 155 Home Furnishings / 3 cr. hrs. / 3 periods

The study of furnishings both in the functional sense and with respect to social, aesthetic, economic and psychological effects on individuals. (formerly HEC 125)

DES 156 Interior Design I / 3 cr. hrs. / 3 periods

A study of the basic principles of functional interior design and their application. This course is designed for the career oriented interior design student as well as the student who wishes to decorate his or her own surroundings. (formerly HEC 115)

DES 211 Commercial Graphics / 3 cr. hrs. / 4 periods (3 lec., 1 lab)

Offers training in composition, layout, typography, color selection and design of logos, catalogs and brochures. Emphasis is on preparation for the advertising and graphics industry.

DES 250 Functional Design II / 3 cr. hrs. / 4 periods (3 lec., 1 lab)

An extended study of design with emphasis on solutions to problems in fabrication and reproducibility of various products.

DES 255 Interior Design II / 3 cr. hrs. / 3 periods

☐ Prerequisite: ART 155.
A further study of the principles of functional interior design and the application of these principles. For the serious interior design student. (formerly HEC 215)

DES 256 Interior Design III / 3 cr. hrs. / 3 periods

☐ Prerequisite: ART 255.
Advanced theory and practice of interior design. Course deals with needs of the student seeking career prepartion in interior design; customer-client relationships and financial problems.

DRAFTING

DFT 110 Construction Drafting I / 3 cr. hrs. / 6 periods (3 lec., 3 lab)

An introduction to drafting and blueprint reading. Plot plans, floor plans, elevations, sections, details, structural plans, plumbing, heating, ventilating and air conditioning, and electrical plans are involved in developing a basic understanding of construction drawings and drafting techniques.

DFT 114–115 Construction Determinants I, II / 3–3 cr. hrs. 3 periods

An introduction to architecture and construction with emphasis on materials, methods of construction, building equipment systems, codes and standards, contract documents, office procedures, ethics, architectural practice and estimating.

DFT 120 Construction Drafting II / 3 cr. hrs. / 6 periods (3 lec., 3 lab)

☐ Prerequisite: DFT 110.
Introduces the development of a set of residential and wood frame construction working drawings from a given sketch.

DFT 123 Building Utilities and Site Work / 3 cr. hrs. 6 periods (3 lec., 3 lab)

☐ Prerequisite: DFT 120.
The basic concepts for building service support systems and site development.

DFT 130 Construction Drafting III / 3 cr. hrs. / 6 periods (3 lec., 3 lab)

☐ Prerequisite: DFT 120.
A continuation of DFT 120, developing construction drawings for a masonry and wood frame residence from house sketches selected by students.

DFT 140 Construction Drafting IV / 3 cr. hrs. / 6 periods (3 lec., 3 lab)

☐ Prerequisite: DFT 130.
A continuation of DFT 130, developing construction drawings for a medium size steel or concrete building.

DFT 149 Independent Study in Drafting / 1–3 cr. hrs. 3–9 periods (lab)

Independent study or a special project not included in regular courses. The student is required to obtain a sponsoring instructor in this area, establish objectives and a method of procedure and a method of evaluation.

DFT 150 Technical Drafting I / 3 cr. hrs. / 6 periods (3 lec., 3 lab)

The student proceeds through problems he will meet in his association with engineers and designers, and becomes familiar with drafting tools, sketching, lettering, geometric construction, orthographic projection, dimensioning, isometrics, sections and auxiliary views using military standards and specifications as a guide.

DFT 151 Technical Drafting II / 3 cr. hrs. / 6 periods (3 lec., 3 lab)

☐ Prerequisite: DFT 150.
A continuation of DFT 150, 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.

DFT 152 Technical Drafting III / 3 cr. hrs. / 6 periods (3 lec., 3 lab)

☐ Prerequisite: DFT 150, 151.
This course follows DFT 151 and covers additional problems in mechanical drafting. The student is given more advanced problems, typical of industry, to develop skill, accuracy and speed.

DFT 153 Tool Design / 4 cr. hrs. / 6 periods (4 lec., 2 lab)

☐ Prerequisite: DFT 150, 151 and 152.
Introduction to the problems of tool design, drill jigs, radius dies, fixtures, welding jigs and assembly jigs. Drawings are prepared concurrently with the study of related shop practices, mathematics, geometry, materials and basic tools of jig and fixture fabrications.

DFT 154 Electronic Drafting / 3 cr. hrs. / 6 periods (3 lec., 3 lab)

☐ Prerequisite: DFT 150, ETR 1.
Offered primarily for the drafting technician student. Instruction stresses schematics, logic diagrams, printed circuit and integrated circuit layout, including taping.

DFT 155 Electro-Mechanical Design I / 3 cr. hrs. 6 periods (3 lec., 3 lab)

☐ Prerequisite: DFT 150, 151, 152.
Practical packaging problems, common to the electronics industry, are studied. Includes electrical, mechanical, environmental, functional and manufacturing involvement in the design of electro-mechanical gear.

DFT 156 Drafting for Machine Technology I / 3 cr. hrs. 6 periods (3 lec., 3 lab)

Course provides the information and skill needed for an understanding of the tooling trade related to numerical control. The student will demonstrate his knowledge by preparing reports and drawings pertaining to basic tools (fixtures and jigs) for machine operator's documents.

DFT 299 Cooperative Drafting Training / 3 cr. hrs. 15 periods (lab)

A supervised cooperative work program for students in a drafting occupation for a minimum of 15 hours per week. Course may be repeated.

DRAMA

DRA 51 Theatre Practice for the Serious Amateur 3 cr. hrs. / 5 periods (2 lec., 3 lab)

A course in techniques of acting and theatrical presentation for beginning actors of all ages. Designed to stimulate participation in various types of community theatrical presentations. May be repeated once for credit.

DRA 105–106 Introduction to Acting I, II / 3–3 cr. hrs. 5 periods (3 lec., 2 lab)

☐ Prerequisite: DRA 105 for DRA 106.
Introduction to performance techniques and the development of physical skills for effective performance; techniques of acting and characterization, and the actor's relationship to all aspects of theatrical production.

DRA 109 Ethnic Theater / 3 cr. hrs. / 3 periods
Experience in and study of theater as a social communication, including Mexican-American, Black and American Indian forms of dramatic presentation.

DRA 115 Make-Up / 1 cr. hr. / 3 periods (1 lec., 2 lab)
The study and practice of straight and character make-up under various conditions. Also, the history of make-up and masks in various cultures.

DRA 120–121 Stagecraft and Production I, II / 3–3 cr. hrs. 5 periods (2 lec., 3 lab)
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 120-121 need not be taken in sequence.)

DRA 201 Independent Studies in Drama / 1–4 cr. hrs. 3–12 periods (lab)
Students work at various assigned tasks in theatrical productions under the guidance of an instructor. Other projects which students design may at times be approved by instructors.

DRA 240–241 History of the Theater I, II / 3–3 cr. hrs. 3 periods
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 248 Intermediate Acting I / 3 cr. hrs. / 4 periods (3 lec., 1 lab)
☐ Prerequisite: DRA 120 (may be taken concurrently).
The theories and experiences in creating sustained and logical character portrayals, using all types of dramatic literature from various cultures.

DRA 249 Intermediate Acting II / 3 cr. hrs. / 4 periods (3 lec., 1 lab)
☐ Prerequisite: DRA 121 (may be taken concurrently).
Participation in community pre-schools for the purpose of
A continuation of the theories and experiences in creating sustained and logical character portrayals, using all types of dramatic literature from various cultures.

EARLY CHILDHOOD EDUCATION

ECE 107 Human Development and Relations / 3 cr. hrs. 3 periods
An interdisciplinary and intercultural approach to human development and interpersonal relationships.

ECE 108 Literature for the Young Child / 3 cr. hrs. 3 periods
History and development of young children's literature; survey of materials, principals and techniques in the selection and presentation of various types of materials.

ECE 110 Language Arts for the Young Child / 3 cr. hrs. 3 periods
Investigation of language development of the young child; principles, methodology and techniques surveyed for the purpose of curriculum development.

ECE 112 Music for the Young Child / 3 cr. hrs. / 3 periods
The role of music for the young child; presentation of materials, activities and procedures for teaching music to young children.

ECE 112 Musica Para el Nino / 3 cr. hrs. / 3 periods
El papel de la musica para el nino; presentacion de materiales, actividades y procedimientos para ensenar musica a los ninos.

ECE 114 Effective Parenthood / 3 cr. hrs. / 3 periods
Discussion of specific behavior problems related to personality development. Background for understanding parent-child relationships.

ECE 116 Understanding the Young Child / 3 cr. hrs. 3 periods
Intensive study of increased understanding of the young child's behavior, guidance, social and cultural influence.

ECE 117 Child Growth and Development / 3 cr. hrs. 3 periods
A study of the growth, development and acculturation of the child from conception through adolescence.

ECE 118 Pre-School Education / 3 cr. hrs. / 3 periods
A study of various philosophies, theories and methodologies of curriculum for early childhood education with supervised field experience.

ECE 120 Supervision and Administration / 3 cr. hrs. 3 periods
A study of all administrative responsibilities and duties of management, and supervision within all areas of Early Childhood Education.

ECE 122 Community Resources / 3 cr. hrs. / 3 periods
A study of the local early childhood education community resources and agencies through investigation and field work.

ECE 124 Math and Science for the Young Child / 3 cr. hrs. 3 periods
Concepts, methods and materials in teaching math and science to the young child; techniques in the presentation and use of teacher-made materials.

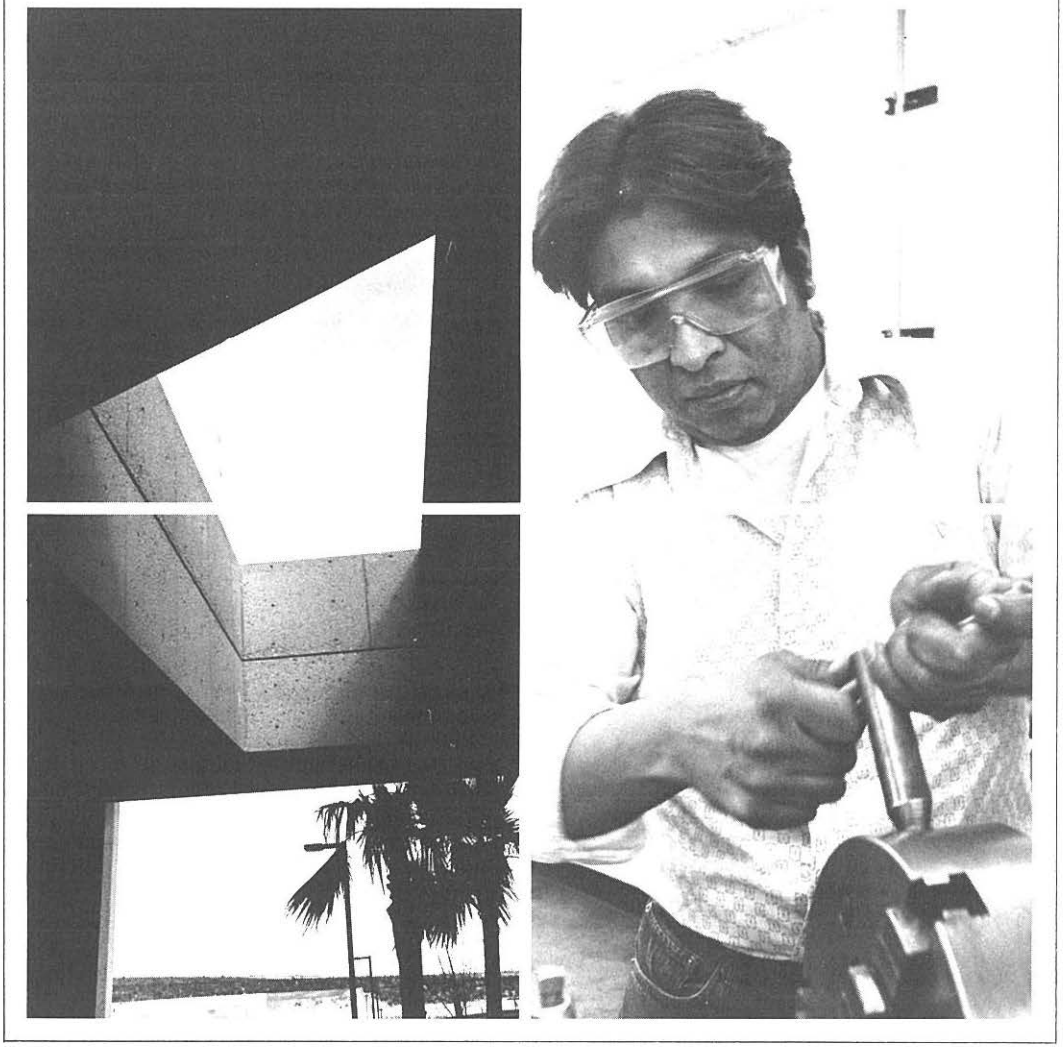
ECE 126 Techniques for Teacher Aides / 3 cr. hrs. 3 periods
A course designed primarily for the development of skills of the teacher aide. A thorough investigation of special duties and the role of the teaching staff. Supervised field work is a part of the course.

ECE 128 Planning for Play / 3 cr. hrs. / 3 periods
Conflicting theories of play and the educational implications of each in a curriculum. Selected observation assignments are required.

ECE 130 Current Trends in Early Childhood Education 3 cr. hrs. / 3 periods
Current trends and the history of the pre-school movement; philosophy underlying pre-schools; surveys of the contemporary pre-school programs; and evaluation of various teaching methods.

ECE 240 Early Childhood Education Practicum / 3 cr. hrs. 15 periods (lab)
Participation in community pre-schools for the purpose of gaining experience in program planning for the growth and learning of children up to six years of age. Weekly seminars are conducted to discuss theory and practice pertinent to the involvement of the pre-schools.

ECE 299 Cooperative Early Childhood Education Training 3 cr. hrs. / 15 periods (lab)
A supervised cooperative work program for students in an early childhood education occupation for a minimum of 15 hours per week. Course may be repeated.



EARTH SCIENCES

ESC 60 Principles of Lapidary / 3 cr. hrs. / 3 periods (1 lec., 2 lab)
A practical laboratory course in the identification, polishing and mounting of semi-precious materials. (Same as ART 60.)

ESC 101 Physical Geography I / 4 cr. hrs. / 6 periods (3 lec., 3 lab)
The physical elements — weather, climate, vegetation and soils — are interrelated and form patterns of great importance to man. This course is about those elements, their interrelationships, the resulting patterns and why they are important.

ESC 102 Physical Geography II / 4 cr. hrs. / 6 periods (3 lec., 3 lab)
☐ Prerequisite: ESC 101 suggested but not required.
Topics include geographic characteristics of the major types of land forms plus an introduction to the oceans of the world and their relationship to man.

ESC 103 Cultural Geography / 4 cr. hrs. / 6 periods (3 lec., 3 lab)
This course is about people, where and how they live and some of the reasons why they live as they do. Race, language, religion and the physical environment are interwoven and changed by time to produce many different economic and settlement patterns. (Same as Anthropology 103.)

ESC 110 Geology of the Western United States / 3 cr. hrs. 4 periods (2 lec., 2 lab)
This course provides an introduction to physical and historical geology using samples from the western United States including national parks and monuments. (Formerly ESC 70.)

ESC 112 Geology for Education Majors / 3 cr. hrs 4 periods (2 lec., 2 lab)
☐ Prerequisite: Majoring in education.
The processes, characteristics, origin and evolution of the earth; development of life; and man's dependence upon the earth. Applicability to elementary education is stressed. Credit is not allowed for ESC 112 if student has credit for either ESC 120 or 121.

ESC 115 Human Ecology / 4 cr. hrs. / 5 periods (3 lec., 2 lab)
Focus is on the question of survival for mankind and other life forms, exploring both present problems and alternatives for the future. Included are lectures, discussions and field trips. (Same as Life Sciences and Sociology 115.)

ESC 120 Introductory Geology I / 4 cr. hrs. / 6 periods (3 lec., 3 lab)
An introduction to the physical aspects of the earth's crust; rock and minerals, their relationship to one another, and the surface and subsurface processes that operate on and in the earth.

ESC 121 Introductory Geology II / 4 cr. hrs. / 6 periods (3 lec., 3 lab)
This course traces the history of the earth and life on earth as indicated by the sequence of rock layers, the distribution of surface sediments, former geographic relationships, the fossil record and the nature of ancient environments.

ESC 151 Geology for Science Majors / 3 cr. hrs. / 5 periods (2 lec., 3 lab)
☐ Prerequisite: MTH 150.
Principles of physical geology for students majoring in science, engineering and agriculture.

ESC 299 Cooperative Earth Sciences Training / 3 cr. hrs. 15 periods (lab)
A supervised cooperative work program for students in an earth sciences occupation for a minimum of 15 hours per week. Course may be repeated.

ECONOMICS

ECO 100 Introduction to Microeconomics / 3 cr. hrs. 3 periods
The role of prices in the allocation of economic resources with an emphasis on how individual consumers and producers make economic decisions.

ECO 101 Introduction to Macroeconomics / 3 cr. hrs. 3 periods
The determinants of the level of national income, employment and the price level are analyzed from the viewpoint of an economic policy maker.

ECO 298 Topics in Contemporary Economics / 3 cr. hrs. 3 periods
☐ Prerequisite: ECO 100 or 101.
Supervised independent study of economic topics determined by student interest.

ELECTRONICS

ETR 1 Introduction to Electronics / 4 cr. hrs. / 6 periods (2 lec., 4 lab)
☐ Prerequisite: MTH 70 series or concurrent enrollment.
A pre-program course for students who have not had previous training in electronics or for those who require some knowledge of electronic principles to support their major program. Includes DC circuits, use of multimeters, oscilloscopes and basic radio theory.

ETR 100 Fundamentals of Electronics / 6 cr. hrs. 8 periods (4 lec., 4 lab)
☐ Prerequisite: ETR 1 or equivalent, and MTH 130, or MTH 115, or concurrent enrollment.
Topics include fundamentals of direct current and alternating current, passive circuit elements and their interaction with active circuit devices such as diodes, transistors and vacuum tubes.

ETR 105 Electronics Circuits and Systems I / 6 cr. hrs. 8 periods (4 lec., 4 lab)
☐ Prerequisite: ETR 100, and MTH 150 or MTH 125, or concurrent enrollment.
The fundamentals of circuit analysis; power supplies; regulators; class A, B, AB and C amplifiers; introduction to feedback amplifiers. May be taken concurrently with ETR 110.

ETR 110 Digital Electronics / 3 cr. hrs. / 4 periods (2 lec., 2 lab)
☐ Prerequisite: ETR 100, and MTH 150 or MTH 125, or concurrent enrollment.
The fundamentals of digital electronics, binary, octal and hexadecimal arithmetic, digital logic, discrete and integrated circuits; and programming of PDP-8L computer in the BASIC language. May be taken concurrently with ETR 105.

ETR 140 Television Repair I (Black and White) / 6 cr. hrs. 8 periods (4 lec., 4 lab)

☐ Prerequisite: ETR 100, and MTH 115 or MTH 130, or equivalent.

The fundamentals of television circuits, tubes and transistors; theory, alignment and repair of black and white television receivers.

ETR 145 Television Repair (Color) / 6 cr. hrs. / 8 periods (4 lec., 4 lab)

☐ Prerequisite: ETR 140 or practicing TV technician.

Color television theory, alignment and repair; picture tube convergence, IF amplifiers, tuner alignment, remote control automatic tuning, sync and high-voltage circuits.

ETR 150 Home Entertainment Equipment Repair / 6 cr. hrs. 8 periods (4 lec., 4 lab)

☐ Prerequisite: ETR 140.

The repair of home entertainment equipment other than television receivers. Course includes theory and repair of audio amplifiers, AM-FM-MPX receivers, tape decks, cassette decks, turntables, dolby and other noise reduction devices.

ETR 230 Advanced Circuits and Systems / 6 cr. hrs. 8 periods (4 lec., 4 lab)

☐ Prerequisite: ETR 105 and ETR 110, plus MTH 155 or MTH 205, or concurrent enrollment.

Advanced circuit analysis, primary signal sources, filters, R.F. amplifiers, AM and FM modulation systems.

ETR 235 Communications / 6 cr. hrs. / 8 periods (4 lec., 4 lab)

☐ Prerequisite: ETR 230.

Communications systems from low through microwave frequencies; FM, AM and PM modulation and multiplexing methods and antenna systems; troubleshooting and system alignment techniques.

ETR 250 Digital Devices / 4 cr. hrs. / 6 periods (2 lec., 4 lab)

☐ Prerequisite: ETR 105, and ETR 110 or equivalent experience; plus MTH 155 or MTH 205 or concurrent enrollment.

Digital integrated circuit applications, construction and maintenance; specific applications of TTL logic family in a multiplexed digital communications system.

ETR 255 Digital Systems / 6 cr. hrs. / 8 periods (4 lec., 4 lab)

☐ Prerequisite: ETR 250.

Minicomputer maintenance, interfaces, assembly and machine languages, MOS logic, operational amplifiers, A/D-D/A converters, pulse modulation, modems, digital transmission lines, unijunction transistors and SCR/TRIAC control of AC circuits.

ETR 275 Industrial Electronics and Instrumentation 6 cr. hrs. / 8 periods (4 lec., 4 lab)

☐ Prerequisite: ETR 230.

Principles of industrial electronics, pneumatics and hydraulics, transducers, control devices and feedback loops.

ETR 290 Second Class F.C.C. License / 3 cr. hrs. 6 periods

☐ Prerequisite: ETR 230 or equivalent experience.

Preparation for Federal Communications Commission second class radiotelephone license examination and review of circuit analysis, laws and regulations.

ETR 299 Cooperative Electronics Training / 3 cr. hrs. 15 periods (lab)

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

EMERGENCY MEDICAL TECHNOLOGY

EMT 51 Emergency Medical Technology / 6 cr. hrs. 6 periods (4 lec., 2 lab)

☐ Prerequisite: Consent of instructor.

A 114-hour course covering all techniques of emergency medical care currently considered as responsibilities of the emergency medical technician. Skills are developed in recognizing symptoms of illness and injuries and proper procedures of emergency care.

ENGINEERING

ENG 110 Construction Surveying / 3 cr. hrs. / 6 periods (2 lec., 4 lab)

☐ Prerequisite: MTH 110 or consent of instructor.

Course covers the use of surveying instruments, measurement of horizontal distances, leveling, angle measurements, traversing, locating details, stadia surveys, topographic mapping and grade staking.

ENG 120 Engineering Graphics / 3 cr. hrs. / 7 periods (1 lec., 6 lab)

☐ Prerequisite: DFT 150 or equivalent.

Freehand technical sketching, instrument working drawings, principles of projection, descriptive geometry, applications to engineering space problems.

ENG 130 Elementary Surveying / 3 cr. hrs. / 6 periods (2 lec., 4 lab)

☐ Prerequisite: MTH 150 and 155, or MTH 160.

Measurement of horizontal distances, use of surveying instruments, angle measurements, traverse surveys and computations, topographics, government land surveys and solar observations.

ENG 210 Engineering Mechanics-Statics / 3 cr. hrs. 3 periods

☐ Prerequisite: PHY 210, MTH 215 — may be taken concurrently.

Vector algebra, equilibrium, momentum, couples, centroids, trusses, machines, friction and equivalent force systems.

ENG 220 Engineering Mechanics-Dynamics / 3 cr. hrs. 3 periods

☐ Prerequisite: ENG 210.

Rectilineal motion, curvilinear motion, kinetics of particles, translation, moment of inertia and plane motion of rigid bodies.

ENG 230 Mechanics of Materials / 3 cr. hrs. / 3 periods

☐ Prerequisite: ENG 210.

Material behavior, external forces on rigid and elastic bodies, stress, strain, load analysis and design factors.

ENG 240 Basic Circuits and Electronics / 4 cr. hrs. 8 periods (4 lec., 4 lab)

☐ Prerequisite: MTH 180 and one of the following: ETR 1, PHY 122, PHY 132, PHY 216.

Steady state AC and DC circuit analysis, phasor methods, vacuum and semiconductor electronic devices, and basic electronic circuits.

ENG 299 Cooperative Engineering Training / 3 cr. hrs. 15 periods (lab)

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

ENGLISH AS A SECOND LANGUAGE

ESL 50 Series is offered for foreign and bilingual students. The ESL Program is a special program designed for bilingual and foreign students in order to develop proficiency in oral and written English. Students will be placed in the program according to language tests results.

Placement tests and teacher evaluation determine each student's entry level. ESL is an intensive study for acquiring and improving basic skills in listening, speaking, reading and writing Americanized English.

ESL 50 Elementary Grammatical Patterns — Level 1 and 2 6 cr. hrs. / 8 periods (6 lec., 2 lab)

Elementary grammatical patterns has, as its main goal, the development of listening and speaking skills in the patterns of Americanized English. Reading and writing exercises are introduced to reinforce the above mentioned patterns.

ESL 51 Intermediate Grammatical Patterns — Level 1 and 2 3 cr. hrs. / 4 periods

Intermediate grammatical patterns has, as its main goal, the development of listening and speaking skills in the patterns of Americanized English. Reading and writing are introduced to reinforce the above mentioned patterns.

ESL 52 Intermediate Reading and Writing — Level 1 and 2 3 cr. hrs. / 4 periods

The reading components of ESL have, as their main goal, the development of vocabulary and cultural awareness gained from reading various types of American literature written on low intermediate level. To reach this end, basic word recognition, comprehension and study skills will be introduced. The writing component of ESL has, as its main goal, the development of skills in writing basic word order, certain tenses and parts of speech and mechanics in various types of writing.

ESL 53 Advanced Grammatical Patterns / 3 cr. hrs. 4 periods

This course has, as its main goal, the development of listening and speaking skills in the patterns of Americanized English. Reading and writing are introduced to reinforce the above mentioned patterns.

ESL 54 Advanced Reading / 3 cr. hrs. / 4 periods

Advanced reading has, as its main goal, vocabulary development and the development of cultural awareness gained from reading various types of American literature written on an advanced level. To reach this end, more advanced word recognition, comprehension and study skills will be introduced.

ESL 55 Advanced Writing / 3 cr. hrs. / 4 periods

Advanced writing has, as its main goal, the development of skills in writing advanced sentence patterns using advanced word order, certain tenses, parts of speech and basic methods of paragraph development in various types of writings.

ESL 57 Composition I / 3 cr. hrs. / 3 periods

ESL composition I is a first semester English composition course at the freshman level designed to help the foreign and bilingual students with their special needs. It offers possible equivalence with WRT 101.

ESL 58 Composition II / 3 cr. hrs. / 3 periods

ESL composition II is a second semester freshman composition designed to help foreign and bilingual students with their special needs. It offers possible equivalence with WRT 102.

EXPLORATORY

EXP 51 Social Science Survey / 4 cr. hrs. / 4 periods

Includes units from the social or behavioral sciences selected by the student.

EXP 60 People / 1 cr. hr. / 1 period

Learning teams give members a chance to explore ideas and experiences in many different areas of study, work, cultural awareness and community development.

EXP 60 La Gente / 1 cr. hr. / 1 period

Grupos de aprendizaje ofrecen a los participantes la opportunidad de explorar nuevas ideas y experiencias en las areas del estudio, trabajo, conocimiento cultural y participacion en la comunidad.

EXP 87 Music Appreciation / 3 cr. hrs. / 3 periods

This course is designed for non-music majors and surveys the formal development of musical ideas and their relationship to culture.

EXP 88 Political Involvement / 3 cr. hrs. / 3 periods

Survey of local, state, and national government campaigns, running for political office, and effective campaign management. To aid persons who wish to become involved in the political process.

EXP 89 Funding Projects / 3 cr. hrs. / 3 periods

A practical course designed to assist agency and business employees in the preparation of proposals for federal funds and an analysis of United States government interests and federal agencies. The student will be able to write elementary proposals for federal grants.

EXP 90 Picture Framing / 2 cr. hrs. / 3 periods (1 lec., 2 lab)

A basic course in selecting molding, matte materials, and construction of picture frames; and instruction in the safe operation of power and hand tools. This course is intended for students who are employed or seek employment in galleries or framing shops.

EXP 91 Professional Modeling / 0 cr. hrs. / 3 periods (2 lec., 1 lab)

This basic course in professional modeling includes instruction in beauty care, body carriage, and personality projection; and capitalizing on the individual's natural assets. Techniques of fashion and photographic modeling are emphasized.

EXP 99 How to Study / 3 cr. hrs. / 3 periods

Course emphasizes skills necessary for effective reading, note-taking, remembering, report writing, listening, preparing for and taking exams, and planning your study time.

FINANCE

FIN 101 Savings and Loan Business Operations / 3 cr. hrs. 3 periods

A view of the role of savings associations in the country's economy; also, a detailed exposure of the asset-liability structure as well as the needs and uses of accounting and other statistical reports. Course content includes association tax regulations, using reports to analyze savings flows and lending processes, savings associations and the social environment.

FIN 102 Principles of Bank Operations / 3 cr. hrs. 3 periods

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

FIN 103 Savings and Time Deposit Banking / 3 cr. hrs. 3 periods

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.

FIN 104 Insurance of Savings Accounts / 3 cr. hrs. 3 periods

Course content includes insurance of accounts, proxies, loans secured by savings accounts, decedent accounts, liquidity, terminology, policy regarding legal advice, classification of ownership and basic theory of savings.

FIN 105 Fundamentals of Bank Data Processing / 3 cr. hrs. 3 periods

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

FIN 106 Teller Operations — Public Relations / 3 cr. hrs. 3 periods

Course develops the teller to provide accurate and efficient service and introduces fundamental principles of public relations. Topics include handling of cash and checks, savings accounts, how images are created, public relations practices and reports on attitudes and customer relations.

FIN 131 Credit Union Basics / 3 cr. hrs. / 3 periods

The credit union idea is explained in detail. Course also provides information and training to prepare persons as credit union executives. Students learn details of credit union operations, how to conduct an annual meeting and what preparations are needed, and how to present the credit union idea at a public meeting.

FIN 132 Credit Union Management / 3 cr. hrs. / 3 periods

Prerequisite: FIN 131.
Designed for the potential credit union office manager. Topics include policy formulation, personnel practices, growth management, counseling and lending, account servicing, fund management, and the responsibilities of elected and appointed officials.

FIN 134 Life Insurance Law & Comapny Operations 3 cr. hrs. / 3 periods

This course is designed to prepare the student with the knowledge and capacity to apply this knowledge to actual family and business situations. Content includes: 1) legal aspects of contract formation; 2) policy provisions; 3) assignments; 4) ownership rights; 5) creditor rights; 6) beneficiary designations; 7) disposition of life insurance proceeds; 8) settlement options. Also, types of insurers, risk selection, temporary investments, financial statements, and regulation and taxation of companies.

FIN 136 Investments & Family Financial Management 3 cr. hrs. / 3 periods

Students receive a broad understanding of investment and family financial management concepts and practices. Included are the subects of yields, limited income securities, growth factors, and analysis of financial statements. Other topics include family budgeting, property insurance, mutual funds, variable annuities, and aspects of other investment media.

FIN 201 Trust Department Organization / 3 cr. hrs. 3 periods

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

FIN 202 Trust Department Services / 3 cr. hrs. / 3 periods

Designed for personnel of trust departments in commercial banks and trust companies, the course presents a complete picture of services offered by institutions engaged in the trust business.

FIN 203 Bank Management / 3 cr. hrs. / 3 periods

A working knowledge of bank management is provided along with new trends which have emerged in the philosophy and practice of management. Case study also is introduced.

FIN 204 Credit Administration / 3 cr. hrs. / 3 periods

Aimed at the executive level, this course reviews factors influencing and determining loan policy. Discussed are credit investigation and analysis, credit techniques, specific credit problems, and regular and unusual types of loans.

FIN 205 Home Mortgage Lending / 3 cr. hrs. / 3 periods

The viewpoint of the home mortgage loan officer is taken in this course. The mortgage market picture is presented first, then the acquisition of a mortgage portfolio; also mortgage plans and procedures, mortgage loan processing and servicing, and obligations of the mortgage loan officer.

FIN 206 Bank Public Relations and Marketing / 3 cr. hrs. 3 periods

The basis of public relations, both internal and external, is discussed.

FIN 207 Bank Letters and Reports / 3 cr. hrs. / 3 periods

For bank officers, supervisors and employees who dictate or review correspondence: not only mechanical forms of bank letters, but psychological principles that help the writer achieve best results. The course covers letter forms, different kinds of bank letters, and principles underlying modern correspondence.

FIN 208 Installment Credit / 3 cr. hrs. / 3 periods
Presented are techniques of installment lending with emphasis on credit, obtaining and checking information, servicing the loan and collecting amounts due. Other topics covered are inventory financing, special loan programs, business development and advertising, and the public relations aspect of installment lending.

FIN 209 Bank Investments / 3 cr. hrs. / 3 periods
This course describes the nature of primary reserves and loanable funds and how their uses are determined, and analyzes 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.

FIN 210 Money and Banking / 3 cr. hrs. / 3 periods
Stressed are practical aspects of money and banking, and the basic monetary theory needed by banking students. Emphasis also is on economic stabilization, types of spending, the role of gold, limitations of central bank control, government fiscal policy, balance of payments and foreign exchange.

FIN 211 International Banking / 3 cr. hrs. / 3 periods
The basic framework and fundamentals of international banking are introduced along with how money is transferred from one country to another, how trade is financed, what the international agencies are and how they supplement the work of commercial banks, and how money is changed from one currency to another.

FIN 212 Financial Institutions / 3 cr. hrs. / 3 periods
Content includes the role of finance, money and the money supply, banking, monetary roles of the Federal Reserve and Treasury, financial objects of corporate organization, the financing of business, securities, markets, small business finance, farm credit institutions and capital markets.

FIN 213 Business Finance / 3 cr. hrs. / 3 periods
☐ Prerequisite: ACC 102.
A basic course dealing with the methods of securing and managing fixed and working capital funds of individual business units. Special problems encountered by minority enterprises in obtaining funds are highlighted.

FIN 214 Agricultural Finance / 3 cr. hrs. / 3 periods
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 agricultural finance to help satisfy credit needs of modern agriculture.

FIN 215 Business Administration / 3 cr. hrs. / 3 periods
Emphasis is on the managerial responsibility of coordinating the many facets of a business enterprise. The background of administration, financial management, production, labor-management relations, and public relations problems also are stressed.

FIN 216 Insurance / 3 cr. hrs. / 3 periods
☐ Prerequisite: BUS 200.
This course explores the theory of risk and reviews the insurable risks faced by business and individuals. Content includes risk and insurance, contracts, property and liability insurance, homeowner's programs, general liability insurance programs, excess and umbrella liability contracts, special multi-peril contracts, planning and buying insurance.

FIN 217 Analyzing Financial Statements / 3 cr. hrs. 3 periods
Characteristics of financial statements and their analysis are covered. There also is a review of basic accounting principles for those who have studied accounting. For those who have not, there is a minimum accounting background provided for financial statement analysis.

FIN 218 Formulation of a Commercial Loan Decision 3 cr. hrs. / 3 periods
☐ Prerequisite: Lending officer experience.
This course is for the professional lending officer who wishes to improve his ability to critically analyze a commercial loan application. The development of a formal written recommendation is stressed.

FIN 233 Intermediate Banking Operations / 3 cr. hrs. 3 periods
☐ Prerequisite: Two years banking experience.
A study of bank operations at a level appropriate for students who possess an overview knowledge. Relationships among departments and their functions are stressed. The creation of credit and the need for external controls are reviewed in depth.

FIN 234 Loan Officer Development / 3 cr. hrs. / 3 periods
Students are prepared to perform the various critical functions of a commercial loan officer. Topical content includes the initial interview, loan development decisions and techniques, documentation for the credit file, problem loans, conveying unpleasant information, and in-basket and loan portfolio games.

FIRE SCIENCE

FSC 50 Basic Training — Fire Fighter / 3 cr. hrs. 10 periods (1 lec., 9 lab)
☐ Prerequisite: Employment with Tucson Fire Department.
At least 12 weeks of classroom and field practice is spent at the Tucson Fire Department Training Center under the direction of instructors and in close liaison with the college's fire science coordinator.

FSC 51 Introduction to Fire Science / 3 cr. hrs. / 3 periods
A historical and scientific background of the fire protection field; its development and future in America; governmental, industrial and private fire protection organizations and agencies; employment and promotional opportunities.

FSC 52 Fundamentals of Fire Prevention / 3 cr. hrs. 3 periods
Fire prevention surveys; "selling" the service to businessmen; helping the business man to stay in business; public relations; and the application of fire prevention codes.

FSC 53 Hazardous Materials I / 3 cr. hrs. / 3 periods
☐ Prerequisite: FSC 52, MTH or consent of instructor.
A study of basic chemical concepts and their applications to the field of fire science.

FSC 54 Advanced Fire Prevention / 3 cr. hrs. / 3 periods
Fire prevention in high risk and industrial occupancies; application of codes in the installation, operation, storage and transportation of dangerous materials; investigation and determination of fire causes; legal aspects of fire prevention and prosecution of violations.

FSC 61 Hazardous Materials II / 3 cr. hrs. / 3 periods

☐ Prerequisite: FSC 53 or consent of instructor.
A study of chemical use expansion in the field of fire science; how to identify, classify, research and handle under hazardous and safe conditions most flammable, explosive, reactive and toxic materials; where they are likely to be found, shipped, used, and the special problems they cause.

FSC 62 Hydraulics and Fire Suppression / 3 cr. hrs. 3 periods

☐ Prerequisite: MTH 70. PHY 101 recommended.
Physical laws affecting the movement of water through pipes, hydrants, pumpers, hoses, etc.; functions and limitations of mechanical equipment to overcome these restrictions; effect of friction loss, head and pressure, water system; fire flow requirements and organization for fire suppression.

FSC 63 Fire Apparatus and Equipment / 3 cr. hrs. 3 periods

☐ Prerequisite: PHY 101 recommended.
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.

FSC 64 Fire Protection Systems / 3 cr. hrs. / 3 periods

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

FSC 65 Building Construction for Fire Protection / 3 cr. hrs. 3 periods

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

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

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

FSC 67 Rescue Practices and First Aid / 3 cr. hrs. 3 periods

Basic training in handling emergency situations.

FSC 71 Public Safety Laws / 3 cr. hrs. / 3 periods

Laws relating to the public safety profession; legal duties and responsibilities of public safety employees.

FSC 299 Cooperative Fire Science Technician Training 3 cr. hrs. / 15 periods (lab)

A supervised cooperative work program for students in a fire science technician occupation for a minimum of 15 hours per week.

FRENCH

FRE 110–111 Elementary French I, II / 4–4 cr. hrs. 5 periods (4 lec., 1 lab)

An oral approach to French taught primarily through conversation. Reading and writing are introduced only after listening and speaking skills have been acquired. Only French is used.

FRE 210–211 Intermediate French I, II / 4–4 cr. hrs. 4 periods

☐ Prerequisite: FRE 110-111.
A review of basic French skills supplemented by regular assignments of compositions, in French, and a variety of readings. As in the introductory course, only French is used.

GENERAL BUSINESS

GEB 53 Hotel-Motel Management-Law / 3 cr. hrs. 3 periods

Students learn the basic legislation that has been passed in Arizona relating to the hotel-motel industry. Contracts, torts and employee laws are discussed. Students study landmark cases and discuss them in class.

GEB 54 Hotel-Motel Management/Front Office Procedures 3 cr. hrs. / 3 periods

Students are acquainted with the front desk management in a typical hotel or motel. Public relations, customer appreciation and reception, reservation management, supervision of employees, and basic room accounting is taught.

GEB 60 Planning Your Retirement / 3 cr. hrs. / 3 periods

Course surveys the psychological aspects of retirement, health care, legal affairs, money management, benefits for the retired, community services, leisure-time planning, and continuing education for senior citizens.

GEB 70 Fundamentals of Freight Transportation / 3 cr. hrs. 3 periods

A survey of freight transportation procedures and regulations with emphasis on the application of classification system, freight rates, routing and claims.

GEB 84 Public Relations / 3 cr. hrs. / 3 periods

All categories of public relations problems and practices are covered: corporate, business, association, government, education and other agencies. Includes good media relations as well as writing news releases, newsletters, speeches, memos and the step-by-step operation of a public relations campaign. Course also provides an understanding of the place of public relations in an efficient organization.

GEB 86 Tax Problems of the Independent Businessman 3 cr. hrs. / 3 periods

Emphasis is on tax problems common to small businesses and industries: retail, service and manufacturing. Course also surveys accounting systems beneficial to the small businessman.

GEB 96 Applied Accounting / 3 cr. hrs. / 3 periods

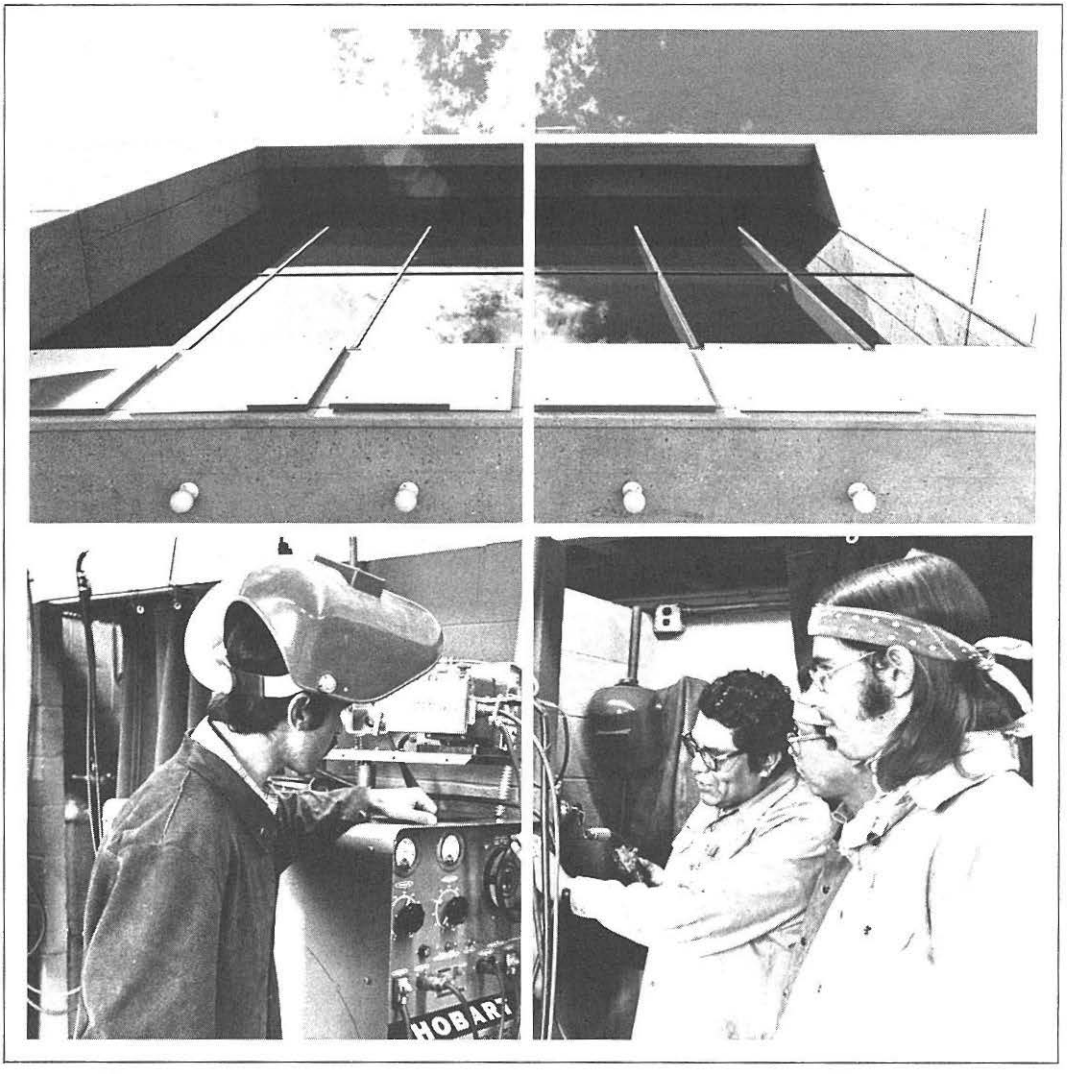
A basic course with emphasis on establishing and maintaining records of accounts receivable and payable, preparing operating statements, balance sheets and tax forms. Prepares students for entry level jobs requiring some bookkeeping knowledge.

GEB 97 Television Advertising / 3 cr. hrs. / 3 periods

An introduction to the principles of television advertising with emphasis on the use of visual and oral techniques in preparing advertisements. Prepares students for entry level jobs in the television advertising field.

GEB 98 Introduction to Hotel-Motel Management 2 cr. hrs. / 2 periods

A critical examination of the principles, methods and procedures used in the hotel-motel management field. Introduces students to employee supervision, hotel-motel law legislation, customer relations, financial policies and records.


HOBART

GEB 99 The Stock Market / 3 cr. hrs. / 3 periods
The study of stocks, bonds, speculative investments, mutual funds and commodities.

GENERAL MACHINE SHOP

GMC 50 General Machine Shop / 3 cr. hrs. / 4 periods (1 lec., 3 lab)
The student is taught to safely use the engine lathe, horizontal and vertical mill, horizontal grinder, drill press, and power saw.

GENERAL OFFICE EDUCATION

GOE 90 Typing Refresher / 3 cr. hrs. / 3 periods (2 lec., 1 lab)
A review course for students having some typing skills. Emphasis is on the practice of using the keyboard, speed drills, practice letters and manuscripts.

GOE 91 Shorthand Refresher / 3 cr. hrs. / 3 periods
A review of the shorthand alphabet, basic theory and brief forms of Gregg shorthand with emphasis on the ability of applying the shorthand theory to new words. Concentration is on taking dictation up to at least 80 words per minute.

GENERAL TECHNOLOGY

GTC 51 Carpentry Foundation and Forms / 5 cr. hrs. 6 periods (4 lec., 2 lab)
The construction and use of foundations, concrete forms and rough framing are discussed.

GTC 52 Carpentry Blueprint Reading and Cost Estimating 4 cr. hrs. / 6 periods (4 lec., 2 lab)
☐ Prerequisite: GTC 51.
The fundamentals of construction blueprint reading and the methods of estimating costs of building from blueprints.

GTC 53 Forms and Heavy Construction / 5 cr. hrs. 6 periods (4 lec., 2 lab)
☐ Prerequisite: GTC 52.
The use of interior form construction and the methods of heavy construction.

GTC 54 Carpentry — Roof Framing / 5 cr. hrs. / 6 periods (4 lec., 2 lab)
☐ Prerequisite: GTC 53.
Taught are the techniques of framing residential and commercial roofs. Types of roof covering, insulation and finishes are included.

GTC 55 Carpentry — Interior Finishing / 5 cr. hrs. 6 periods (4 lec., 2 lab)
☐ Prerequisite: GTC 54.
Interior finishing, stains, lacquers and varnishes are discussed. Topics also include trim and finish cabinet work and the installation of windows, doors and flooring.

GTC 56 Carpentry — Stair Building and Cost Estimating 5 cr. hrs. / 6 periods (4 lec., 2 lab)
☐ Prerequisite: GTC 55.
Units cover stair construction and layout.

GTC 57 Carpentry — Cabinet Making and Mill Work 5 cr. hrs. / 6 periods (4 lec., 2 lab)
☐ Prerequisite: GTC 56.
Cabinet making including jointing assembly, workmanship, machine tools and safe practices.

GTC 60 Building Materials / 3 cr. hrs. / 3 periods
A study of the properties, grading and cost of materials, hardware and supplies commonly used in the construction of commercial and residential structures.

GTC 62 Occupational Safety and Health Act (OSHA) 3 cr. hrs. / 3 periods
A practical approach to the requirements of OSHA, its application in the workplace, and its impact upon the employee and employer. Students develop an awareness of safety and health programs essential in the workplace for compliance with the Act.

GTC 63 Techniques of Reinforcing Structures / 3 cr. hrs. 3 periods
Methods of using steel and iron for reinforcing commercial and residential buildings. This course is primarily for ironworker apprentices.

GTC 64 Techniques of Rigging for Ironworkers / 3 cr. hrs. 4 periods (3 lec., 1 lab)
A study of rigging devices, cable and rope splicing, and the safe handling of structural steel used in commercial building.

GTC 68 General Welding / 2 cr. hrs. / 4 periods (1 lec., 3 lab)
The techniques and practices of joining metals by electric arc welding as applied to the ironworker trade.

GTC 71 Beginning Bricklaying / 5 cr. hrs. / 6 periods (4 lec., 2 lab)
The general principles and procedures of erecting brick and masonry structures.

GTC 73 Advanced Bricklaying / 5 cr. hrs. / 6 periods (4 lec., 2 lab)
☐ Prerequisite: GTC 71.
A continuation of GTC 71 including special procedures and practices in constructing brick and masonry structures. Erecting decorative and curved walls also is practiced.

GTC 80 Building Maintenance / 2 cr. hrs. / 2 periods
An upgrading course covering the methods and procedures of public and commercial buildings. Includes minor repairs usually performed by custodial and maintenance personnel.

GTC 83 Equine Animal Science / 3 cr. hrs. / 3 periods
Course includes anatomy and physiology, reproduction, health maintenance, disease prevention, and general care of horses. Course prepares persons for entry level jobs with large animal veterinarians.

GTC 86 Aviation Ground School — Commercial / 3 cr. hrs. 3 periods
This civil aviation ground school course provides the necessary background in theory of flight, weather, navigation and procedures to become a commercial pilot.

GTC 87 Aviation Ground School — Instruments / 3 cr. hrs. 3 periods
A lecture course designed to familiarize the student with various aircraft instruments. Emphasis is on instrument flight rules.

GTC 89 Aviation Ground School — Private / 3 cr. hrs. 3 periods
An introductory civil aviation ground school course which provides the necessary background in theory of flight, weather, navigation and procedures for the student to become a private pilot.

GTC 90 Landscape Gardening / 3 cr. hrs. / 3 periods
Problems in design, elementary principles of botany, environmental considerations and commonly used materials with special emphasis on landscaping in the Southwest.

GTC 91 Institutional Building Maintenance Management 3 cr. hrs. / 4 periods (2 lec., 2 lab)
The proper techniques of floor, carpet, wood, metal, and drapery maintenance and cleaning are taught; also, the evaluation and demonstration of cleaning and maintenance chemicals.

GTC 92 Woodshop I / 3 cr. hrs. / 5 periods (2 lec., 3 lab)
Techniques of wood preparation and finishing with emphasis on functional design, drawing and reading project plans. Course includes safety practices and use of shop equipment. Prepares students for custom woodworking.

GTC 93 Elementary Television Repair / 3 cr. hrs. 6 periods (2 lec., 4 lab)
A basic course in television repair designed to assist students in diagnosing common television receiver difficulties. Instruction includes simple tests to locate common receiver malfunctions, fundamentals of reading electronic circuit blueprints, and safety practices in routine repair. This course can be used for exploring the electronics field. More serious electronics students should select other courses.

GTC 94 Introduction to Motorcycle Safety & Maintenance 3 cr. hrs. / 6 periods (3 lec., 3 lab)
An introductory course acquainting students with safe operational procedures and evasive and defensive techniques. Routine maintenance and emergency repairs are taught with emphasis on diagnosing two and four cycle engine malfunctions will be discussed.

GTC 96 Floor Covering / 3 cr. hrs. / 4 periods (1 lec., 3 lab)
Instruction to the various types of floor coverings, floor treatment, mathematics involved in proper layout, tools, sales, management, estimating and blueprint reading.

GTC 97 Ornamental Iron Construction, Repair, Installation 3 cr. hrs. / 3 periods
The techniques of constructing, repairing and installing metal door frames, windows and walls in commercial and residential buildings. This course applies to the ironworker trade.

GTC 98 Animal Genetics / 3 cr. hrs. / 3 periods
Primarily for persons interested in breeding small animals. Emphasied are the practical applications of genetic principles. This is a general interest course.

GTC 99 Blueprint Reading / 3 cr. hrs. / 3 periods
The study of symbols and language of blueprints to provide students with the ability of interpreting construction and engineering drawings.

GERMAN

GER 110–111 Elementary German I, II / 4–4 cr. hrs. 4 periods
☐ Prerequisite: GER 110 or one year high school German for GER 111.
Simple conversations, reading and writing short compositions introduce the beginner to the German language. Readings and audio-visual materials are selected on the basis of revealing the life and culture of German-speaking countries. Qualified students may register for GER 111.

GER 210–211 Intermediate German I, II / 4–4 cr. hrs. 4 periods
☐ Prerequisite: GER 111 or equivalent for GER 210, GER 210 or equivalent for GER 211.
Intensive reading, small group discussions and frequent instruction to develop a deeper understanding of the German language and culture.

GER 240 Independent Study in German / 1–4 cr. hrs. 1–4 periods (lab)
☐ Prerequisite: Consent of instructor.
Students pursue independent study in literature and grammar under the guidance of a faculty member.

GRAPHICS

GRC 70 Offset Printing / 3 cr. hrs. / 5 periods (2 lec., 3 lab)
Practical experience in offset layout, camera work, stripping, platemaking, press work and bindery work.

GRC 85 Silkscreen Printing / 3 cr. hrs. / 5 periods (2 lec., 3 lab)
Principles of silkscreening for commercial purposes with emphasis on hand-cutting film and photographic film. Students learn to work on various materials including fabric, metal and cardboard. Students successfully completing the course will be qualified for apprenticeship in the silkscreening industry.

HEALTH EDUCATION

HED 136 Introduction to Health Science / 3 cr. hrs. 3 periods
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 and abortion. The focus is on preventive health measures and public health services.

HED 137 Preparation for Teaching Personal and Public Health / 3 cr. hrs. / 3 periods
☐ Prerequisite: HED 136 or consent of instructor.
Course content may be similar to HED 136, but the focus is on learning to use methods and materials in teaching health topics to different age groups.

HEALTH SCIENCES

HCA 50 Skills for Allied Health Services / 5 cr. hrs. 10 periods (2 lec., 8 lab)
A one semester course providing training in skills for various health services. Upon completion, students may seek employment at a beginning level in health care facilities as a nurses aide, nurses assistant, etc.

HCA 54 Introduction to Health Care / 3 cr. hrs. / 3 periods
☐ Prerequisite: Consent of Instructor.
An introductory health course representing the nucleus of the health sciences programs. It spans the entire pattern of the health care delivery system and how it relates to the patient as a person. Students also learn health science fundamentals.

HCA 99 Independent Studies in Health Sciences 1–6 cr. hrs. / 3–18 periods (lab)
For special health-related projects, permitting students to conduct research and experimental work. Results of projects must be presented in manuscript form.

HISTORY

HIS 76 Ghost Towns of the Southwest / 3 cr. hrs. 3 periods
A survey of the socio-cultural heritage of the Southwest through its past communities — mining, milling, smelting, lumbering, ranching, farming, railroading and military — between the years of 1854 and 1917.

HIS 101–102 Introduction to Western Civilization I, II 3–3 cr. hrs. / 3 periods
Surveys the historic development of Western man, going through the prehistoric age, ancient Greece, Rome, early Middle Ages and Renaissance to the Twentieth Century.

HIS 141–142 History of the United States I, II / 3–3 cr. hrs 3 periods
A review of history from Jamestown to the present, includes the founding and development of American democracy, minority participation in making of the country, and the role of the United States in world affairs.

HIS 143–144 American Civilization I, II / 3–3 cr. hrs. 3 periods
A broad look, through many units, at the American experience with an emphasis on the cultural aspects.

HIS 145 Papago History and Culture / 3 cr. hrs. / 3 periods
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 145.)

HIS 147 History of Arizona / 3 cr. hrs. / 3 periods
A look at Arizona history as a part of the Arizona-Sonoran Desert area, moving from the pre-Colombian period through the Spanish conquest, Mexican Republic, U.S. Territory and statehood.

HIS 148 History of Indians of North America / 3 cr. hrs. 3 periods
Origin and distribution of native populations of North America; and the historical development and interrelations of cultures. (Same as Anthropology 148.)

HIS 149 History and Culture of the Mexican-American in the Southwest / 3 cr. hrs. / 3 periods
Who is the Mexican-American? What is his cultural heritage, and what has happened to it in the United States? (Same as Anthropology 149.)

HIS 150 Afro-American History and Peoples / 3 cr. hrs. 3 periods
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 150.)

HIS 160 History and Peoples of Latin America / 3 cr. hrs. 3 periods
The history of Latin America from the pre-Colombian period to the present with emphasis on the evolution of nationalism through the struggles for economic, cultural, political and social freedoms. (Same as Anthropology 160.)

HIS 165–166 History of Mexico I, II / 3–3 cr. hrs. / 3 periods
The student moves from the pre-Colombian era, through the Spanish conquest, a century of political and social upheaval, to the nation of social and economic stability.

HIS 165–166 Historia de Mexico I, II / 3–3 cr. hrs. 3 periods
Historia de Mexico. Se estudia una panoramica de la epoca precolonial, colonial y contemporanea.

HIS 170 History and Peoples of Africa / 3 cr. hrs. 3 periods
A survey of the political and cultural history of Africa, south of the Sahara. (Same as Anthropology 170.)

HIS 201 Independent Studies in History / 2–4 cr. hrs. 6–12 periods (lab)
☐ Prerequisite: Consent of instructor.
Independent history studies or projects arranged by the instructor.

HIS 201 Estudios Independientes en Historia / 2–4 cr. hrs. 6–12 periods (lab)
☐ Prerequisite: Consentimiento del instructor.
Consiste este curso, en estudios de historia, independientes, o proyectos de acuerdo con el instructor.

HIS 249 Mexican-American Culture and Thought / 3 cr. hrs. 3 periods
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."

HIS 249 Pensamiento y Cultura Del Mexico Americano 3 cr. hrs. / 3 periods
Historia del pensamiento del mexico americano desde su pasado Nahuatl y Europeo hasta el presente. Trae, hasta el presente, la evolucion de ambas culturas hasta los actuales conceptos de "Raza de Bronce" y "Aztlan."

HOME ECONOMICS

HEC 55 International Cuisine / 3 cr. hrs. / 5 periods (2 lec., 3 lab)
A study of international foods accompanied by preparation and appropriate service: an appreciation of the art of the various cultures through their foods.

HEC 99 Independent Studies in Home Economics 4 cr. hrs. / 18 periods (lab)
☐ Prerequisite: Consent of instructor.
Students pursue independent study under the guidance of an instructor.

HEC 111 Clothing Construction — Beginning I / 3 cr. hrs. 5 periods (2 lec., 3 lab)
The fundamental principles of clothing construction, selection of fabrics and styles, using commercial patterns. Proficiency test permitted.

HEC 111 Costura / 3 cr. hrs. / 5 periods (2 lec., 3 lab)
Construccion basica de ropa sencilla usando patrones comerciales y las bases fundamentales para construir ropa, estudio de textiles seleccion y cuidado de telas.

HEC 112 Alteration and Designing / 3 cr. hrs. / 5 periods (2 lec., 3 lab)
The coordinated method of flat pattern alterations and basic principles of alterations on ready-to-wear.

HEC 113 Food Study / 3 cr. hrs. / 5 periods (2 lec., 3 lab)
Composition and structure of foods using scientific principles in handling food, enhancement and/or presentation of quality.

HEC 114 Nutrition / 3 cr. hrs. / 3 periods
The principles of human nutrition and its relationship to diet, health and cultural patterns.

HEC 117 Home Management / 3 cr. hrs. / 3 periods
A study of individual and family resources designed for students interested in problems of management and the application to personal and family living.

HEC 121 Applied Dress Design / 3 cr. hrs. / 3 periods
The flat pattern method of pattern making is taught with emphasis on engineering, not fashion design.

HEC 122 History of Fashion / 3 cr. hrs. / 3 periods
The evaluation of fashion is combined with historical events and trends.

HEC 123 Nutrition in Growth and Development / 3 cr. hrs. 3 periods
The application of basic nutritional principles to meet the physical and emotional needs of children.

HEC 124 Foods for Children / 3 cr. hrs. / 5 periods (2 lec., 3 lab)
The selection, preparation and serving of foods considering the basic nutritional principles and child development theories for parents and day care personnel, using a multicultural child centered approach.

HEC 126 Textiles / 3 cr. hrs. / 3 periods
The technology of textile fibres, yarns, construction and cost, based on social, aesthetic and individual needs.

HEC 127 Marriage and Family Relations / 3 cr. hrs. 3 periods
A study of the individual, marriage and the family in today's social setting.

HEC 128 Home Economics Profession / 3 cr. hrs. 3 periods
The history of home economics, its purposes and trends plus an explanation of professional opportunities in the field.

HEC 131 Clothing Selection / 3 cr. hrs. / 3 periods
A consumer analysis of clothing design, construction and cost, based on social, aesthetic and individual needs.

HEC 132 Psychology of Dress / 3 cr. hrs. / 3 periods
A study of human behavior in relationship to clothing; the formal and informal aspects of dress; purposes and forces of society relative to dress.

HEC 137 Today's World / 3 cr. hrs. / 3 periods
A broad look at current issues on the international, national and local levels and the relationship to the individual and selected career area.

HEC 141 Fashion Design I / 3 cr. hrs. / 3 periods
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.

HEC 142 Alteration and Repair / 3 cr. hrs. / 5 periods (2 lec., 3 lab)
Techniques for lengthening the life and use of garments; methods of changing; minor fitting, repairing, reconditioning and restoring clothes.

HEC 211 Clothing Construction — Advanced II / 3 cr. hrs. 5 periods (2 lec., 3 lab)
☐ Prerequisite: HEC 111 or consent of instructor or proficiency exam.
Advanced clothing construction techniques, selection of fabrics and patterns. Commercial patterns are used.

HEC 212 Clothing Construction — Tailoring III / 3 cr. hrs. 5 periods (2 lec., 3 lab)
☐ Prerequisite: HEC 211 or consent of instructor or proficiency exam.
Course stresses custom and semi-commercial tailoring techniques with an emphasis on natural fibres. Experiments with recent developments in construction methods are included.

HEC 213 Meal Management / 3 cr. hrs. / 3 periods
☐ Prerequisite: HEC 113 or consent of instructor.
The planning, preparing and serving of meals with emphasis on cultural patterns and management of resources.

HEC 214 Professional Food Services / 3 cr. hrs. / 3 periods
☐ Prerequisite: HEC 113 or consent of instructor.
Quantity food service methods and techniques as applied to institutions. Special emphasis is on equipment and management of time.

HEC 241 Fashion Design II / 3 cr. hrs. / 3 periods
☐ Prerequisite: HEC 111, 121, 141.
Students design a pattern, select materials and construct an original garment.

HEC 299 Cooperative Home Economics Training / 3 cr. hrs. 15 periods (lab)
A supervised cooperative work program for students in any home economics occupation for an average of 15 hours per week. Course may be repeated.

HUMANITIES

HUM 60 Early Chinese Views of Social Change / 3 cr. hrs. 3 periods
This course, through a study of I Ching and Taoism, takes an unusual approach to social change.

HUM 110–111 Humanities I, II / 4–4 cr. hrs. / 4 periods
An introduction to man's expressions in art, architecture, drama, music, literature, religion and philosophy. The first semester treats man's ideas and art from the rise of civilization through the Renaissance. The second semester continues with the rise of modern science through the present.

HUM 130 Independent Studies in Humanities / 3 cr. hrs. 3 periods
Study areas to be arranged with instructor.

HUM 131 Great Ideas / 3 cr. hrs. / 3 periods
Course is designed to respond to student interest for study of particular topics in humanities. Past studies have included Zen meditation, mythology and mysticism.

IRONWORKING

IRW 64 Intermediate Combination Welding / 3 cr. hrs. 5 periods (2 lec., 3 lab)
This course is one of a series in the Ironworkers Apprenticeship Program. The student will be able to join metals by electric arc welding at an intermediate level.

IRW 66 Advanced Combination Welding / 3 cr. hrs. 5 periods (2 lec., 3 lab)
This course is one of a series in the Ironworkers Apprenticeship Program. The student will be able to satisfactorily complete advanced iron welding projects.

JOURNALISM

JRN 57 Journalism Workshop / 3 cr. hrs. / 10 periods (lab)
A laboratory course in which students gather, write and edit material for the college's weekly student newspaper.

JRN 101 Basic Reporting / 3 cr. hrs. / 3 periods (2 lec., 1 lab)
An introduction to evaluation of news, news gathering methods, writing leads, organization of stories, and experience in interviewing and writing various types of news stories. Course work requires considerable amount of writing.

JRN 110 Exploring Mass Media / 3 cr. hrs. / 3 periods
An evaluation of today's mass communications, the nature, function and the impact on society. Study includes a review of important journalists' work and a broad overview of performances by newspapers, radio, television, advertising and magazines. One major writing project is required of each student.

JRN 201 Advanced Reporting / 3 cr. hrs. / 3 periods (2 lec., 1 lab)
☐ Prerequisite: JRN 101.
Weekly writing assignments, investigative reporting, feature and editorial writing, copy-editing and headline writing, make-up and advertising. A required course for journalism majors.

LEISURE TIME

LTS 1 Practicum I / 1 cr. hr. / 2 periods (1 lec., 1 lab)
Students experience on-the-job supervised training.

LTS 9 Restricted Sports and Games / 1 cr. hr. / 2 periods (1 lec., 1 lab)
Students select, under advisement of Human Resources faculty members, sports and games of a low motor level.

LTS 14 Adaptive and Corrective Programs / 3 cr. hrs. 3 periods
A study of various programs and routines of physical rehabilitation in recreation and physical education. Different techniques of instruction and the recovery from disabilities are surveyed.

LIBRARY TECHNICIAN

LMT 50 Library Resources / 3 cr. hrs. / 3 periods
An introduction to the basic library resources: catalogs, bibliographies, indices and reference materials. Also an introduction to periodicals and microforms.

LMT 51 Library Technical Services / 4 cr. hrs. / 4 periods
Ordering and processing procedures; cataloguing and classification; records maintenance (shelf list, card catalog, order files); simple book repair; bindery records and procedures.

LMT 52 Library Public Services / 3 cr. hrs. / 3 periods
This course provides an introduction to public services. It includes circulation procedures and problems; charging systems and hardware; physical maintenance of library shelves; information services and reference assistance; public service ethics and relations.

LMT 299 Cooperative Library Technician Training 3 cr. hrs. / 15 periods (lab)
A supervised cooperative work program for students in a library technician occupation. Second year level.

LIFE SCIENCES

LSC 22 Modern Concepts of Desert Ecology / 1 cr. hr. 1 period
This course shows the exciting relationship among living things of the Arizona-Sonoran Desert. It also illustrates the need to understand how our desert ecological systems function and the symptoms of our failure to maintain their integrity.

LSC 50 Principles of Human Anatomy and Physiology 4 cr. hrs. / 6 periods (3 lec., 3 lab)
Designed for non-transfer health occupation programs. A brief survey of the structure and function of the body.

LSC 76 Federal Lands and Management / 1 cr. hr. 1 period
☐ Prerequisite: Students must be enrolled in the park/forest service option of the recreation program.
Students are acquainted with the historical development of federal resources protection agencies and the implementation of policy.

LSC 77 Federal Lands and Urbanization / 1 cr. hr. 1 period
☐ Prerequisite: Students must be enrolled in the park/forest service option of the recreation program.
Students are provided with some insight into potential problems concerning utilization of federal lands near major population centers.

LSC 78 Federal Lands and Fire Control Policy / 2 cr. hrs. 2 periods
☐ Prerequisite: Students must be enrolled in the park/forest service option of the recreation program.
This course covers the use of tools, safety gear, communications equipment, and techniques in the control of fires on federal lands.

LSC 79 Federal Lands Facility Planning and Visitor Services / 1 cr. hr. / 48 periods (32 lec., 16 lab)
☐ Prerequisite: Students must be enrolled in the park/forest service option of the recreation program.
This is a sequential four-day session during the spring recess at which time the student is introduced to materials in park operations, communications, environmental interpretation, and search and rescue techniques as they apply to federal lands.

LSC 80 Advanced Federal Lands Facility Planning and Visitor Services / 1 cr. hr. / 48 periods (32 lec., 16 lab)
☐ Prerequisite: Second-year status in the park/forest service option of the recreation program.
This also is a sequential four-day session during the spring recess. Students are introduced to the National Park Service basic law enforcement techniques, facility maintenance and planning, and environmental interpretation.

LSC 90 Range and Livestock Management / 3 cr. hrs. 3 periods
A practical course covering the infection, symptoms and treatment of livestock diseases, animal nutrition, and animal breeding. Range management techniques including fertlization, reseeding, and pasture rotation methods are discussed. Methods of range improvement, water structure, and range pest eradication are examined.

LSC 99 Anatomy and Physiology Review / 1–3 cr. hrs. 1–3 periods

A review of basic anatomy and physiology. This course is primarily for students who have taken a traditional course but may need a review and additional information about anatomy and physiology.

LSC 103 General Biology I / 4 cr. hrs. / 6 periods (3 lec., 3 lab)

An introductory biology course. Satisfies four units of Liberal Arts lab science requirements. Not for biology majors. This course provides the student with a macroscopic and microscopic view of his surroundings. Emphasis is on the cell and its function, reproduction, systems and ecology.

LSC 104 General Biology II / 4 cr. hrs. / 6 periods (3 lec., 3 lab)

☐ Prerequisite: LSC 103 recommended.

This course continues a survey of the living world. Areas of study include origin of life, genetics, evolution, behavior and populations.

LSC 112 Biology for Education Majors / 3 cr. hrs. 4 periods (2 lec., 2 lab)

General biological principles are stressed as to their applicability to education majors and general interest students.

LSC 115 Human Ecology / 4 cr. hrs. / 5 periods (3 lec., 2 lab)

Focus is on the question of survival for mankind and other life forms, exploring both present problems and alternatives for the future. Included are lectures, discussions and field trips. (Same as Earth Sciences 115 and Sociology 115.)

LSC 117 Introduction to Infectious Diseases / 3 cr. hrs. 3 periods

Designed for students in health occupations and open to others interested in the cause and control of infectious and communicable diseases. Epidemiology is emphasized.

LSC 120 Human Anatomy and Physiology I / 4 cr. hrs. 6 periods (3 lec., 3 lab) (3 cr. hrs. for lec., and 1 cr. hr. for lab)

☐ Prerequisite: REA 100 series and CHM 110 or equivalent.

A study of the structure and function of the body, emphasizing cellular and biochemical aspects. Includes an introduction to cells and tissues and to the skeletal muscular, endrocine and reproductive systems. Designed for students in health careers.

LSC 121 Human Anatomy and Physiology II / 4 cr. hrs. 6 periods (3 lec., 3 lab) (3 cr. hrs. for lec., and 1 cr. hr. for lab)

☐ Prerequisite: LSC 120 or consent of instructor.

A continuation of the study of the systems of the body. Includes the circulatory, respiratory, digestive, urinary and nervous systems.

LSC 150 Ecology I / 4 cr. hrs. / 6 periods (3 lec., 3 lab)

☐ Prerequisite: LSC 103–104, or one year of biology, or consent of instructor.

Emphasis on basic principles and concepts. Includes the development of an ecological vocabulary, learning methodology and techniques of ecological study, understanding relative position of groups of organisms with respect to food chains, predator-prey relations, energy cycles, and physical and biological factors. (Formerly LSC 101.)

LSC 151 Ecology II / 4 cr. hrs. / 6 periods (3 lec., 3 lab)

☐ Prerequisite: LSC 150.

A quantitative and qualitative study of geographical biomes. Includes a survey of evolution, distribution, speciation, specific niches and size of population in each biome. (Formerly LSC 102.)

LSC 156 Independent Studies in Life Sciences / 1–4 cr. hrs. 1–4 periods

Subject matters and approaches vary with student interests and reasons for enrolling. The range is from exploratory students wanting to gain insights into biology to honors biology majors wishing to do advanced work.

LSC 170 Conservation of Natural Resources / 3 cr. hrs. 3 periods

☐ Prerequisite: Enrollment in natural resources or park/forest service options of the recreation program, or consent of instructor.

The historical basis for current problems in the conservation of natural resources and the application of basic ecological concepts toward the solution of wise utilization and preservation. (Same as Recreation 170.)

LSC 171 Survey of Western Flora / 3 cr. hrs. / 5 periods (2 lec., 3 lab)

A survey of western flora with emphasis on local plants. Plant adaptation, distribution and environmental implications are stressed. (Same as Recreation 171.)

LSC 172 Survey of Western Land Vertebrates / 3 cr. hrs. 3 periods

☐ Prerequisite: Enrollment in natural resources or park/forest service option of the recreation program, one year in college biology (Biology, Organismic Biology, Ecology, etc.), 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 172.)

LSC 173 Introduction to Game Management / 3 cr. hrs. 5 periods (2 lec., 3 lab)

☐ Prerequisite: LSC 150–151 or consent of instructor.

Basic biological and ecological principles are explored as they relate to compatible methods of managing wildlife populations under range and forest conditions. (Same as Recreation 173.)

LSC 174 Introduction to Watershed Problems / 3 cr. hrs. 3 periods

☐ Prerequisite: Enrollment in natural resources or park/forest service option of the recreation program or consent of instructor.

How biological agents of forest diseases and insects are related to the physical factors of local soil type, topography and geology in describing the efficiency, development and management practices of watershed areas.

LSC 205 Organismic Biology I / 4 cr. hrs. / 6 periods (3 lec., 3 lab)

☐ Prerequisite: CHM 120 and concurrent enrollment in CHM 121, or concurrent enrollment in CHM 120 with consent of instructor.

The study of plants and animal primarily at the organ-system of observation. Topics include chemical structure and functions of cells and tissues. Emphasis is on plant structure and development. Intended for biology, pre-medical, pre-veterinary, science majors.

LSC 206 Organismic Biology II / 4 cr. hrs. / 6 periods (3 lec., 3 lab)

☐ Prerequisite: LSC 205.
A continuation of LSC 205 with emphasis on animal physiology and development. Topics include comparative anatomy, physiology, embroyology, phylogeny and systematics of plant and animal taxa.

LSC 207 Microbiology I / 4 cr. hrs. / 7 periods (3 lec., 4 lab)

Emphasis is on the characteristics of microbes; the influences both of microbes on man and his environment and of man on the microbial environment.

LSC 208 Microbiology II / 4 cr. hrs. / 6 periods (3 lec., 3 lab)

☐ Prerequisite: LSC 207.
This course has a medical orientation. Topics cover infection and immunity by a variety of microbial agents on a variety of hosts.

LSC 210 General Genetics / 4 cr. hrs. / 6 periods (3 lec., 3 lab)

☐ Prerequisite: LSC 205–206, CHM 120–121, CHM 240 and concurrent enrollment in CHM 241.
The student planning to major in biology is introduced to the basic principles and concepts of genetics.

LSC 220 Botany I / 4 cr. hrs. / 6 periods (3 lec., 3 lab)

☐ Prerequisite: LSC 103–104, or one year of biology, or consent of instructor.
A comparative survey of each system of the plant kingdom emphasizing morphology, physiology, systematics, growth and propagation. Special section on "plants useful to man."

LSC 299 Cooperative Natural Resource Management Technician Training / 3 cr. hrs. / 15 periods (lab)

A supervised cooperative work program for students in a natural resource management technician occupation for a minimum of 15 hours per week. Course may be repeated.

LITERATURE

LIT 80 Papago Literature Workshop / 3 cr. hrs. / 3 periods

☐ Prerequisite: Some knowledge of Papago or concurrent enrollment in PGO 50.
An exposure to Papago tales and legends in the native language. Tales are studied in both written and oral form. Those in oral form will be written down and translated into English. Tales from different villages also are compared and contrasted both in content and dialect variation. Can be taken for more than one semester of credit.

LIT 130 Afro-American Literature / 3 cr. hrs. / 3 periods

A survey of Afro-American literature, its cultural and historical roots, and its relationship to other ethnic literature in America.

LIT 131 Introduction to Shakespeare / 3 cr. hrs. / 3 periods

This course familiarizes the student with eight of Shakespeare's major dramas. The student is made aware of relevant history and social conditions as well as literary background. Some attention is given to plays as stage vehicles.

LIT 141–142 Introduction to World Literature I, II 3–3 cr. hrs. / 3 periods

☐ Prerequisite: WRT 101 and 102 for transfer credit.
An introduction to classic European literature with major authors studied in depth. The first semester deals with ancient and medieval works and the second semester with those since the Renaissance.

LIT 161 Introduction to Literature I / 3 cr. hrs. / 3 periods

☐ Prerequisite: WRT 101 and 102 for transfer credit.
An introduction to drama, fiction, and poetry to promote appreciation and understanding of these forms. Some major works are explored in depth through analysis and discussion.

LIT 162 Introduction to Literature II / 3 cr. hrs. / 3 periods

☐ Prerequisite: WRT 101 and 102 for transfer credit.
An exploration of a variety of literary treatments of a single theme or literary type. Possible areas of study include women in literature, folklore in literature, death and dying, science fiction, modern drama, mystery fiction. Emphasis is on works of high literary merit.

LIT 165 Major American Authors / 3 cr. hrs. / 3 periods

☐ Prerequisite: WRT 101 and 102 for transfer credit.
A semester long survey of selected literary works of major American authors from the colonial period to the present. Selections include short stories, poems, novels and dramas of major authors.

LIT 166 Themes in American Literature / 3 cr. hrs. 3 periods

☐ Prerequisite: WRT 101 and 102 for transfer credit.
A semester long study of American literature which deals with a specific theme such as individualism, or nature, or the outsider. Works of major authors are included plus a variety of genres including novels, drama, and poetry appropriate to the theme.

LIT 170 Survey of English Literature I / 3 cr. hrs. / 3 periods

☐ Prerequisite: WRT 101 and 102 for transfer credit.
A survey of English literature from the Anglo-Saxon period through the Eighteenth Century. Some major authors are studied in depth.

LIT 171 Survey of English Literature II / 3 cr. hrs. 3 periods

☐ Prerequisite: WRT 101 and 102 for transfer credit.
A survey of English literature from the Eighteenth Century to the present. Some major authors are studied in depth.

MACHINE TOOL TECHNOLOGY

MAC 110 Machine Shop for Technicians I / 4 cr. hrs. 8 periods (2 lec., 6 lab)

Covers preliminary machine shop, introduction to machine tools, their range of application and capacity.

MAC 120 Machine Shop for Technicians II / 4 cr. hrs. 8 periods (2 lec., 6 lab)

☐ Prerequisite: MAC 110, concurrent with MTH 120.
General shop practice including a thorough training in machine tool set-up, operation and cutting tool techniques.

MAC 130 Basic Metallurgy / 3 cr. hrs. / 3 periods

The study of steel classifications, heat treatment procedures, properties of ferrous and non-ferrous metals, and non-destructive testing.

MAC 135 Physical Metallurgy / 3 cr. hrs. / 4 periods (2 lec., 2 lab)

☐ Prerequisite: MAC 130.
The behavior of metals in their service to industry during heating, cooling, shaping, forming and stress. Mechanical properties and tests to determine values; heat treatment of steel; pure metals and manner of crystallization; theory of alloys; and non-ferrous metals.

MAC 210 Jig and Fixture Designing I / 4 cr. hrs. / 6 periods (3 lec., 3 lab)

☐ Prerequisite: MAC 120.
The design and application of tools, jigs and fixtures for basic metalworking and machine tools.

MAC 220 Jig and Fixture Designing II / 4 cr. hrs. / 6 periods (3 lec., 3 lab)

☐ Prerequisite: MAC 210.
Course enables the technician to lay out design of machine parts, working with government standards and the preparation of drawings for numerically controlled machines.

MAC 230 Quality Control / 3 cr. hrs. / 3 periods

☐ Prerequisite: MTH 120, MAC 120.
Students get a practical working knowledge of quality control methods and equipment. Theories of statistical quality control and true position dimensioning also are covered.

MAC 240 Manufacturing Processes I / 3 cr. hrs. / 3 periods

☐ Prerequisite: MAC 120.
Provides a background knowledge on various manufacturing materials and fundamental types of manufacturing methods. Automation is introduced to acquaint the student with modern practice of numerical control.

MAC 245 Manufacturing Processes II / 3 cr. hrs. / 3 periods

☐ Prerequisite: MAC 240.
A background in casting and foundry practices. The student becomes familiar with the production of simple molds, core and casting and in basic heat treatment inspection and testing, using both destructive and non-destructive methods.

MAC 250 Introduction to Numerical Control / 3 cr. hrs. 3 periods

☐ Prerequisite: MTH 120, MAC 120, or approval of instructor.
The student is introduced to numerical control and its application to machines, processes and manufacturing processes. The basics of manual programming for point-to-point and absolute position machines are covered. Occupational opportunities also are reviewed. (Same as Computer Science 250.)

MAC 255 Numerical Controlled Machines / 3 cr. hrs. 4 periods (2 lec., 2 lab)

☐ Prerequisite: MAC 120, 250.
This course starts continuous path programming and computer aided programming. Calculations are made manually and by computer for two and three axis numerical control machines. Numerical control languages are taught. (Same as Computer Science 255.)

MAC 299 Cooperative Machine Tool Training / 3 cr. hrs. 15 periods (lab)

A supervised cooperative work program for students in a machine tool occupation for a minimum of 15 hours per week.

MANAGEMENT

MAN 110 Human Relations in Business and Industry 3 cr. hrs. / 3 periods

Students study organization and how its functioning is affected by many human factors. Areas of interest are motivation, problem solving techniques, group process and organizational environment. (Formerly MAN 58.)

MAN 112 Supervision / 3 cr. hrs. / 3 periods

A study of the origin of personnel supervision; an analysis of the components of recruitment, training and evaluation of employees; elements of decision making; and the role of labor unions. (Formerly MAN 54.)

MAN 124 Small Business Management / 3 cr. hrs. 3 periods

☐ Prerequisite: ACC 101.
Analysis of the practical problems of organizing and managing a successful small business enterprise. Emphasis is on the managerial activities of the entrepreneur and their application to good business practice. Practical problems in quantitative analysis, causes of business failure, record keeping, sales promotion and marketing, budgeting, employee relations, and small business case studies are considered. (Formerly MAN 52.)

MAN 276 Personnel Management / 3 cr. hrs. / 3 periods

Covers practical aspects of managing personnel; includes recruiting, selection, testing, rating systems, promotion, discipline, training, labor relations, job evaluation and manpower planning. Intended for the practitioner in personnel management as well as the general manager.

MAN 278 Labor/Management Relations / 3 cr. hrs. 3 periods

Covers the history and development of American unionism, government of trade unions, collective bargaining, public policy, and bargaining power, with special emphasis on contemporary issues. Reviews basic legal framework regulating labor/management relations. A primary objective is consideration of the pragmatic issues involved in building a sound relationship between management and labor.

MAN 280 Business Organization and Management 3 cr. hrs. / 3 periods

☐ Prerequisite: ACC 101, ECO 100.
A study of the role of management in business and other human endeavors; management as a total system of functions utilizing resources within constraints imposed by society, the body politic, technology and ideology; management as a situational integration of diverse philosophies.

MAN 299 Cooperative Management Training / 3 cr. hrs. 15 periods (lab)

A supervised cooperative work program for students in a management occupation for a minimum of 15 hours per week. Course may be repeated.

MARKETING

MKT 111 Marketing / 3 cr. hrs. / 3 periods

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. (Formerly MKT 59.)

MKT 113 Salesmanship / 3 cr. hrs. / 3 periods
A study of the basic principles and techniques of selling and their practical application; types of customers, products, information and its presentation, determination of customer's wants and needs, meeting customer objections, and opportunities in selling. (Formerly MKT 50.)

MKT 125 Advertising / 3 cr. hrs. / 3 periods
A basic understanding of the various aspects of advertising, including its planning and creation. (Formerly MKT 53.)

MKT 127 Advertising Layout and Design / 3 cr. hrs. 3 periods
☐ Prerequisite: MKT 53.
A workshop in present day creative advertising with practice in all current media. Actual practice, criticism and field trips included. (Formerly MKT 56.)

MKT 139 Retailing / 3 cr. hrs. / 3 periods
The organization and operation of a retail store; trends in the field; problems involved in the retailing of goods and services. (Formerly MKT 51.)

MKT 141 Consumer Behavior / 3 cr. hrs. / 3 periods
A discussion and explanation of individuals deciding whether, what, when, where, how and from whom to purchase goods and services. (Formerly MKT 62.)

MATHEMATICS

(A satisfactory placement test score may be requested in lieu of, or in addition to, the listed prerequisites for any course. Students who have credit in any college mathematics course equivalent to or above MTH 60 will not receive credit for MTH 60 or any of its components — MTH 61, 62, 63 — without permission of the mathematics area.)

MTH 60 Introductory Mathematics / 3 cr. hrs. / 3 periods
Mathematics 61 through 63 collectively comprise MTH 60.

MTH 61 Introductory Mathematics — Whole Numbers (Module I) / 1 cr. hr. / 1 period
This is a five-week course and the schedule of classes should be checked for entry times. Topics include operations with whole numbers, placed value and order of operations.

MTH 62 Introductory Mathematics — Fractions and Decimals (Module II) / 1 cr. hr. / 1 period
☐ Prerequisite: MTH 61 or equivalent.
Course covers operations with common and decimal fractions, powers of ten and scientific notation.

MTH 63 Introductory Mathematics — Percent, Ratio and Measurement (Module III) / 1 cr. hr. / 1 period
☐ Prerequisite: MTH 62 or equivalent.
This also is a five-week course and the schedule of classes should be checked for entry times. Topics include percent, ratio and proportion, measures, metric system and applications.

MTH 65 Health Careers Mathematics / 3 cr. hrs. / 3 periods
This course provides the necessary mathematical skills for nursing and chemistry. It covers fractions, decimals, equations, scientific notation, apothecary and metric measures, dosages, concentrations and logarithms.

MTH 70 Algebra I / 3 cr. hrs. / 3 periods
☐ Prerequisite: MTH 60 or equivalent.
Mathematics 71 through 73 collectively comprise MTH 70.

MTH 71 Algebra I — Linear Equations and Graphs (Module I) / 1 cr. hr. / 3 periods per week for five weeks five weeks
☐ Prerequisite: MTH 60 or equivalent.
A five-week course and the schedule of classes should be checked for entry times. Topics include signed numbers, order of operation, inverse operation, linear equations and straight line graphs.

MTH 72 Algebra I — Binomials and Quadratics (Module II) 1 cr. hr. / 3 periods per week for five weeks
☐ Prerequisite: MTH 71.
A five-week course — the schedule of classes should be checked for entry times. Included are operations with first and second degree polynomials, factoring, quadratic equations and their graphs.

MTH 73 Algebra I — Algebraic Expressions and Fractions (Module III) / 1 cr. hr. / 3 periods per week for five weeks
☐ Prerequisite: MTH 72.
A five-week course – the schedule of classes should be checked for entry times. Included are algebraic fractions, fractional equations and integral exponents.

MTH 90 Elementary Geometry / 3 cr. hrs. / 3 periods
☐ Prerequisite: MTH 70 or equivalent.
A study of angles, parallel and perpendicular lines, triangles, quadrilaterals and circles, congruence, similar figures, geometric constructions and deductive proofs. Primarily for students who lack credit in high school geometry.

MTH 101 Slide Rule / 1 cr. hr. / 1 period
A programmed learning class — students may enter at any time. Students work at their own pace on scientific notation, estimation, multiplication, division, powers roots and trig scales.

MTH 102 Calculators / 1 cr. hr. / 1 period
Topics include H.P.-35, H.P.-45, Texas Instrument calculator and option. This is a programmed learning class and students may enter at any time. Students work at their own pace.

MTH 103 Computer Terminal / 1 cr. hr. / 1 period
Numerical calculation and program writing. This is a programmed learning class. Students may enter at any time and work at their own pace.

MTH 110 Technical Mathematics I / 3 cr. hrs. / 3 periods
☐ Prerequisite: MTH 60 or equivalent.
Includes basic algebra for solving equations and using formulas; basic geometry for layout of mechanical structures and computing areas and volumes.

MTH 115 Electronics Mathematics I / 3 cr. hrs. / 3 periods
Basic algebra, electronic calculator, slide rule, simultaneous equations, Kirchoff's law, trigonometry and AC circuit analysis.

MTH 120 Technical Mathematics II / 3 cr. hrs. / 3 periods
☐ Prerequisite: MTH 110.
Basic trigonometry, exponents, radicals, scientific notation, logarithms, slide rule and practical problem solving.

MTH 125 Electronics Mathematics II / 3 cr. hrs. / 3 periods
☐ Prerequisite: MTH 115.
Computer number systems, Boolean algebra, advanced AC circuit analysis, logarithms and decibels.

MTH 130 Algebra II / 3 cr. hrs. / 3 periods

☐ Prerequisite: MTH 70 or equivalent.
MTH 131 through 133 are five week modules that collectively comprise MTH 130. MTH 131, 132 and 133 are offered at two or three initial times in a semester. Schedule of classes should be checked for entry time.

MTH 131 Algebra II — Polynomials (Module I) / 1 cr. hr. 3 periods per week for five weeks

☐ Prerequisite: MTH 73 or equivalent.
This module includes operations of polynomials, linear equations, systems of linear equations, and inequalities including functional notation, graphing and determinants.

MTH 132 Algebra II — Factoring and Radicals (Module II) 1 cr. hr. / 3 periods per week for five weeks

☐ Prerequisite: MTH 131 or equivalent.
This module includes products, factoring, algebraic fractions, fractional equations, exponents and radicals.

MTH 133 Algebra III — Quadratic Equations and Logarithms (Module III) / 1 cr. hr. / 3 periods per week for five weeks

☐ Prerequisite: MTH 132 or equivalent.
This module includes quadratic equations, complex numbers, variation, and logarithms.

MTH 135 Survey of Math Thought / 4 cr. hrs. / 4 periods

☐ Prerequisite: MTH 63 or equivalent.
A study of the role of mathematics in society through the nature of mathematics and its historical, cultural and humanistic effects on civilization.

MTH 140 Math for Elementary Education Majors I 3 cr. hrs. / 3 periods

☐ Prerequisite: MTH 70 or equivalent.
Topics include sets, arithmetic operations and their properties, measurement, metric system, percent, decimals and fractions.

MTH 145 Math for Elementary Education Majors II 3 cr. hrs. / 3 periods

☐ Prerequisite: MTH 140.
Includes properties of the sets of integers, rational numbers and real numbers, algebra and geometry for elementary school students. Required for students majoring in elementary education.

MTH 150 College Algebra / 3 cr. hrs. / 3 periods

☐ Prerequisite: MTH 130.
Quadratic and higher degree equations, polynomial, exponential and logarithmic functions, determinants, matrices, systems of equations, sequences and the binomial theorem.

MTH 155 Trigonometry / 3 cr. hrs. / 3 periods

☐ Prerequisite: MTH 150 or concurrent enrollment.
Angular measure, trigonometric functions, graphs, identities, equations, inverse trigonometric functions, and solutions of right and oblique triangles.

MTH 160 College Algebra and Trigonometry / 5 cr. hrs. 5 periods

☐ Prerequisite: MTH 130.
Includes all topics in MTH 150 and 155. Recommended for students planning to take analytic geometry and calculus.

MTH 170 Finite Mathematics / 3 cr. hrs. / 3 periods

☐ Prerequisite: MTH 150.
Includes set theory, logic, partitions, permutations, combinations, probability, Bernoulli trials and Markov chains. For students majoring in business.

MTH 175 Topics in Calculus / 3 cr. hrs. / 3 periods

☐ Prerequisite: MTH 150.
Includes limits, continuity, differentiation and integration of algebraic functions, application to business and separable differential equations. For students majoring in business.

MTH 180 Analytic Geometry and Calculus I / 3 cr. hrs. 3 periods

☐ Prerequisite: MTH 150 and MTH 155 or MTH 160.
Straight lines, conic sections, limits, continuity, differentiation and integration of algebraic functions, applications of derivatives, areas and volumes.

MTH 185 Analytic Geometry and Calculus II / 3 cr. hrs. 3 periods

☐ Prerequisite: MTH 180.
A continuation of MTH 180. Includes differentiation and integration of trigonometric, logarithmic and exponential functions, conic sections, translation and rotation of axes, and methods of integration.

MTH 205 Electronics Mathematics III / 3 cr. hrs. / 3 periods

☐ Prerequisite: MTH 125.
Introduction to digital computer systems: introduction to Fortran; and trigonometric identities and their applications in electronics.

MTH 210 Introductory Statistics / 3 cr. hrs. / 3 periods

☐ Prerequisite: MTH 130.
Averages, standard deviation, frequency distributions, central limit theorem, confidence intervals, correlations, probability, normal curve and tests of hypothesis.

MTH 215 Analytic Geometry and Calculus III / 4 cr. hrs. 4 periods

☐ Prerequisite: MTH 185.
A continuation of MTH 185. Includes polar coordinates, solid geometry, two and three dimensional vectors, infinite series, moments, partial derivatives and multiple integration.

MTH 220 Linear Algebra and Differential Equations 4 cr. hrs. / 4 periods

☐ Prerequisite: MTH 215.
Vectors, bases, linear independence, matrices, linear transformations; differential equations of order one and degree one, linear equations, non-homogeneous equations, and series solutions.

MEDIA TECHNICIAN

MET 50 Communigraphics I / 3 cr. hrs. / 3 periods

Course covers the fundamentals of basic design in relationship to space, line and layout of elements for application to various types of media. Studied are commercial design, industrial design, typography, animation, design for television, design for printed media and special photography methods.

MET 53 Cinematography I / 3 cr. hrs. / 3 periods

Covered are the techniques of basic 8mm motion picture production; camera operation; techniques of animation application; film editing; and motion picture lab processes. The entire class is involved in the production and concept of one major film.

MET 70 Equipment Repair and Maintenance / 3 cr. hrs. 3 periods

Electrical and mechanical repair and also maintenance of instructional media technology equipment including tape recorders, projectors, and mechanical graphic arts devices.

MET 81 Instructional Media Technology I / 3 cr. hrs. 3 periods

Areas covered are still projection, motion picture projection, graphic arts, record players, tape recorders, broadcast sound systems, educational TV, programmed instruction, supporting equipment for instructional media, non-projected instructional media materials.

MET 82 Instructional Media Technology II / 3 cr. hrs. 3 periods

The functions and responsibilities of the media specialist in an industrial or educational audio-visual department; various procedures in ordering, inventory, maintenance and budgeting for media operation; the responsibilities and opportunities for media specialists. Media facilities are designed, and equipment evaluated. Discussed are legal aspects of media production involving copyright.

MET 84 Implications of Media Technology / 3 cr. hrs. 3 periods

The effects of media technology on the individual and his society, covering multi-media, computer-managed instruction, computer-assisted instruction, audio-tutorial systems, television, radio, film, programmed instruction, dial-access systems, man-machine relationships in systems approaches to solving teaching-learning problems.

MET 90 Telecommunications — Television Production 3 cr. hrs. / 3 periods

Students learn to function as part of television production crews. They learn to operate and work with all the basic tools, equipment and techniques used in television production.

MET 91 Telecommunications — Television Workshop 4 cr. hrs. / 6 periods (2 lec., 4 lab)

☐ Prerequisite: 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.

MET 299 Cooperative Media Technician Training / 3 cr. hrs. 15 periods (lab)

☐ Prerequisite: 14 hours in program or equivalent in general and technology courses, or consent of instructor.
A supervised cooperative work program for students in an instructional media technology occupation.

MILITARY SCIENCE

MSC 101 Introduction to ROTC / 2 cr. hrs. / 4 periods (1 lec., 3 lab)

Reviews the history, organization and mission of ROTC, and the military and civilian obligation of the citizen. There also is an introduction to weapons and the leadership laboratory.

MSC 102 Defense Establishment in National Security 2 cr. hrs. / 4 periods (1 lec., 3 lab)

The history, mission and organization of the defense establishment; the role of the military in cold, limited and general warfare. Leadership laboratory included.

MSC 203 American Military History / 2 cr. hrs. / 2 periods

Principles of war and a survey of American military history are studied from Colonial times to 1966. Leadership laboratory included.

MSC 204 Military Map Reading and Tactics / 2 cr. hrs. 2 periods

An introduction to maps, map reading and the Lensatic compass. Also an introduction to small unit tactics. Leadership laboratory included.

MUSIC

MUS 45 Applied Music — Private Instruction / 1 cr. hr. ½ period

Same as MUS 145, 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 52 Introduction to Music Theory / 2 cr. hrs. / 2 periods

An introductory course in fundamental music theory. Designed to develop basic literacy in music. The course consists of the study of notation, melody, harmony, rhythm and musical terminology in a format for those who have little or no background in music theory.

MUS 54 Jazz Improvisation / 1 cr. hr. / 2 periods (1 lec., 1 lab)

☐ Prerequisite: MUS 103.
The study of jazz improvisation on various instruments. Emphasis is on the ryhthmic, melodic and harmonic aspects of jazz styles. Membership is determined by audition with instructor.

MUS 91 Guitar Class I / 1 cr. hr. / 2 periods (1 lec., 1 lab)

Beginning instruction and development of basic skills for both hands. Emphasis is on fingering and picking styles, chords and melodic reading in first position.

MUS 92 Guitar Class II / 1 cr. hr. / 2 periods (1 lec., 1 lab)

Continuation of MUS 91 with more detailed study of chord structures, scales and melodic reading through the fourth position.

MUS 103 Music Theory I / 4 cr. hrs. / 5 periods (3 lec., 2 lab)

An integrated study of elementary standard structure of traditional music, the ordinary treatment and notation. Includes principles of harmony, melody and rhythm, developing the ability to notate what is heard and vice versa, and applying these principles on the piano in creative harmonization. Course consists of three parts: (a) theoretical concepts; (b) ear training; (c) keyboard harmony. These segments may be studied separately as non-transferable courses.

MUS 120 Band / 1 cr. hr. / 5 periods (1 lec., 4 lab)

Participation in regular band rehearsals and performances with membership determined by auditions with the director. Continued development of musical skills through interpretation of literature is stressed.

MUS 121 Jazz Band / 1 cr. hr. / 3 periods (1 lec., 2 lab)

Rehearsal and performance of many styles of music in the jazz idiom. Open to all students and offered both semesters. Membership is determined by audition with the director.

MUS 123 Instrumental Ensemble / 1 cr. hr. / 2 periods (1 lec., 1 lab)
Course offers an opportunity for supervised rehearsal and performance of literature for various instrumental combinations. It is open to all students through a conference and audition with the instructor.

MUS 130 Chorale (SATB) / 1 cr. hr. / 5 periods (1 lec., 4 lab)
A selected group of mixed voices, chosen by audition, for interpretation of a wide variety of styles of music in concerts throughout the academic year. May be taken for credit or as a non-credit elective.

MUS 131 College Singers (SATB) / 1 cr. hr. / 5 periods (1 lec., 4 lab)
A small choral ensemble chosen by audition. Repertory and performance includes best literature from all styles and periods. There are various performances throughout the academic year. Open to all qualified students in the college.

MUS 132 Women's Chorus / 1 cr. hr. / 5 periods (1 lec., 4 lab)
Rehearsal and performances of choral literature written for women's voices. A short audition is necessary for voice placement. Minimum of one performance per semester. Open to all qualified students in the college.

MUS 133 Concert Choir / 1 cr. hr. / 3 periods (1 lec., 2 lab)
The Concert Choir is chosen from those who wish to participate in choral music but for various reasons are not in Chorale. A short audition is necessary for voice placement. Open to all qualified students.

MUS 134 Vocal Ensemble / 1 cr. hr. / 2 periods (1 lec., 1 lab)
Course offers an opportunity for supervised rehearsal and performance of literature for various combinations. It is open to all students through a conference and audition by the instructor.

MUS 136 Voice Class I / 1 cr. hr. / 2 periods (1 lec., 1 lab)
Beginning instruction, introduction and development of basic skills, breathing, diction, tone, rhythm and sight-singing. Practical training in singing without specialization. Open to all students.

MUS 137 Voice Class II / 1 cr. hr. / 2 periods (1 lec., 1 lab)
☐ Prerequisite: MUS 136.
A continuation of MUS 136.

MUS 141 Piano Class I / 1 cr. hr. / 2 periods (1 lec., 1 lab)
Beginning instruction employing group and individual techniques in an electronic lab situation; introduction and development of elements of basic musicianship and keyboard skills. Open to all students.

MUS 142 Piano Class II / 1 cr. hr. / 2 periods (1 lec., 1 lab)
A continuation of MUS 141. Previous piano experience required.

MUS 143 Piano III / 1 cr. hr. / 2 periods (1 lec., 1 lab)
Advanced piano instruction utilizing group and individual techniques in an electronic lab situation. Continued development of keyboard skills and musical proficiency.

MUS 145 Applied Music — Private Instruction / 1 cr. hr. ½ period
Course offers a private weekly lesson with an instructor and participation in student recitals and jury exams. Maximum of one credit each semester.
Section 1 — Woodwinds
Section 2 — Brass
Section 3 — Percussion
Section 4 — Voice
Section 5 — Piano
Section 6 — Strings
Section 7 — Guitar

MUS 151 Exploring Music / 3 cr. hrs. / 3 periods
An introductory course in the study of various musical styles with an emphasis on listening and application of the basic elements of music (melody, rhythm, harmony, form, timbre) to each style. Open to all students.

MUS 201 History and Literature of Music I / 3 cr. hrs. 3 periods
☐ Prerequisite: MUS 103.
A study of music literature with emphasis on structure, period and style. This course is required of all music majors.

MUS 202 History and Literature of Music II / 3 cr. hrs. 3 periods
A continuation of MUS 201.

MUS 204 Music Theory II / 4 cr. hrs. / 5 periods (3 lec., 2 lab)
☐ Prerequisite: MUS 103.
The theory of music in the pre-tonal styles with emphasis on medieval and Renaissance works. Course consists of three parts: (a) theoretical concepts; (b) ear training; (c) keyboard harmony. These segments may be studied separately as non-transferable courses.

MUS 205 Music Theory III / 4 cr. hrs. / 5 periods (3 lec., 2 lab)
☐ Prerequisite: MUS 103.
The theory of music in tonal styles. Emphasis is on Baroque, Classical and Romantic period works, and on the development of hearing, singing and keyboard skills. Study concentrates on tertiary harmonic construction from seventh chord through borrowed, altered and eleventh/thirteenth chords, as well as melodic, rhythmic and formal aspects of styles involved. Course consists of three parts: (a) theoretical concepts; (b) ear training; (c) keyboard harmony. These segments may be studied separately as non-transferable courses.

MUS 206 Music Theory IV / 4 cr. hrs. / 5 periods (3 lec., 2 lab)
☐ Prerequisite: MUS 103.
The theory of music in post-tonal styles with emphasis on Twentieth Century composition and on the development of hearing, singing and keyboard skills. Course consists of three parts: (a) theoretical concepts; (b) ear training; (c) keyboard harmony. These segments may be studied separately as non-transferable courses.

MUS 211 Basic Conducting Techniques I / 3 cr. hrs. 3 periods
Development of fundamental conducting skills with emphasis on basic techniques, organizational problems, materials and interpretation of representative literature.

NURSING

NRS 50 Nursing Assistant / 5 cr. hrs. / 11 periods (2 lec., 9 lab)

☐ 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.

NRS 70 Nursing I/8 cr. hrs./16 periods (4 lec., 12 lab)

☐ 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 associate degree nurse programs.

NRS 72 Nursing II/9 cr. hrs./19 periods (4 lec., 15 lab)

☐ Prerequisite: NRS 70.
Highlighted are health needs and problems that occur frequently in pregnancy, infancy, childhood, adolescence and medical, surgical, and psychosocial health needs and problems of adults. The role of the nurse includes giving physical and emotional care, and helping clients identify and use their own and community resources.

NRS 80 A.D. Nursing III/9 cr. hrs./19 periods (4 lec., 15 lab)

☐ Prerequisite: NRS 72.
Emphasis is on increasingly complex care of clients of all ages with medical-surgical health needs or problems, and/or obstetric.

NRS 82 A.D. Nursing IV/9 cr. hrs./19 periods (4 lec., 15 lab)

☐ Prerequisite: NRS 80.
A continued emphasis on complex patient care and the individual's reaction to illness, covering all age groups. Management and leadership components are included. Seminars on the current trends in nursing, and the legal and ethical responsibilities of the nurse prepare the student for her role after graduation.

OFFICE EDUCATION

SPA 30 Commercial and Technical Spanish / 2 cr. hrs. 2 periods

☐ Prerequisite: Spanish proficiency in speaking and writing.
The Spanish language as a business skill. The course is specially planned for the bilingual secretary or office employee. Emphasis is on business terms and the Spanish language as used in the southwestern United States and in Mexico. Includes practice in taking dictation and transcribing in both languages.

SPA 30 Español Comercial / 2 cr. hrs. / 2 periods

Se enseña el español especializado para negocio para obtener aptitudes necesarias de secretaria bilingüe o trabajadora (trabajador) de oficina. El énfasis es sobre términos de negocios y el idioma español como se emplea en el suroeste de los Estados Unidos y México. Se practicará el dictado y la transcripción en ambos idiomas.

OED 60 Notehand / 2 cr. hrs. / 2 periods

An intensive course in a shorthand system to be used for personal notetaking. Practice in taking useful, well-organized lecture and conference notes is stressed.

OED 70 Upgrading Office Skills / 1–5 cr. hrs. / 1–5 periods

This course includes assessment and evaluation, review, improvement and new techniques in office skills and human relations. Designed for persons with previous office training who wish to re-enter the secretarial field or upgrade their present position.

OED 101 Shorthand I / 3 cr. hrs. / 5 periods (3 lec., 2 lab)

☐ Prerequisite: OED 111 or concurrent enrollment or one year of typing; OED 154 recommended.
A first-semester course in shorthand, using the Gregg method. Designed to develop skills in taking simple dictation and transcribing at the typewriter. Emphasis is on the mechanics of written English.

OED 102 Shorthand II / 3 cr. hrs. / 5 periods (3 lec., 2 lab)

☐ Prerequisite: One year high school shorthand or dictation speed of 50 wpm with typewriter transcription at minimum of 95 percent accuracy; OED 154 or concurrent enrollment.
A review of Gregg shorthand through dictation practice and emphasis on shorthand speed development and accuracy in typed transcription.

OED 103 Records Management / 3 cr. hrs. / 3 periods

The principles and procedures of filing and actual practice in the basic filing systems. Course also deals with methods of storing and retrieving information and plans for retention, transfer and disposal of records.

OED 111 Typing I / 1–3 cr. hrs. / 5 periods (3 lec., 2 lab)

A beginning course in the theory and practice of touch typing. Emphasis is on the mastery of the keyboard, speed drills and practice. Letters, manuscripts and tabulations are included.

OED 112 Typing II / 1–3 cr. hrs. / 5 periods (3 lec., 2 lab)

☐ Prerequisite: One year of typing or a typing speed of 30 wpm.
A further development of typing techniques, skills and knowledge. Accurate proofreading and a concept of mailability are stressed. Letters, manuscripts, tabulations, memorandums, and business forms.

OED 121 Calculating Machines / 2 cr. hrs. / 3 periods

☐ 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. Also a study of basic arithmetical processes and business application problems such as interest, percentage, commission, single and chain discounts, amount and percent of change, mark-up and prorating.

OED 122 Word Processing / 1–4 cr. hrs. / 6 periods (4 lec., 2 lab)

☐ Prerequisite: OED 112 or typing speed of 40 wpm and ability to type letters, manuscripts and tables; OED 154 recommended.
Specific procedures, methods and equipment used for transcription of written, verbal or recorded ideas into typewritten or printed form. Includes work on transcription equipment, proportional-spacing typewriters, composing machines and magnetic tape typewriters. Instruction in duplicating equipment includes photocopiers, the spirit and stencil duplicators and offset press.

OED 154 Business English / 3 cr. hrs. / 3 periods
An in-depth study of English fundamentals essential for modern business communication, including grammar, punctuation, spelling and word usage. Not a writing course. It deals with the parts of speech and application of rules concerning items such as capitalization, verb tenses, sentence structure, plurals, possessives, etc.

OED 158 Machine Shorthand / 3 cr. hrs. / 4 periods (3 lec., 1 lab)
☐ Prerequisite: OED 111 or concurrent enrollment or one year typing.
Basic touch shorthand theory with speed developed to 80 words per minute. Emphasis is on reading skills.

OED 166 Medical Office Procedures / 3 cr. hrs. / 3 periods
☐ Prerequisite: OED 112 or equivalent.
Designed for students planning to work in a physician's office, clinic or hospital. Includes instruction in keeping patient records, preparation and handling of insurance forms and medical reports, handling patients and other duties typical of an assistant in a medical office.

OED 250 Legal Secretarial Procedures I / 3 cr. hrs. 3 periods
☐ Prerequisite: OED 252 or equivalent.
Provides a knowledge and understanding of terminology and procedures of a law office, involving wills, domestic relations cases and foreclosures. Human relations and the code of ethics for legal secretaries are included. Typing proficiency is stressed.

OED 251 Legal Secretarial Procedures II / 3 cr. hrs. 3 periods
☐ Prerequisite: OED 250 or law office experience and typing.
Provides a knowledge and understanding of terminology and procedures for a law office including personal injury, probate, corporate and criminal law. Human relations and the code of ethics for legal secretaries are included. Typing proficiency is stressed.

OED 252 Typing III / 3 cr. hrs. / 5 periods (3 lec., 2 lab)
☐ Prerequisite: Two years of typing or 40 wpm; OED 154 recommended.
High level skills in techniques of touch typing are developed with a standard of mailability for all production work stressed. Office typing problems include manuscripts, correspondence, tables, business forms, executive and legal work. Independent performance is encouraged.

OED 253 Shorthand III / 3 cr. hrs. / 5 periods (3 lec., 2 lab)
☐ Prerequisite: Two years of shorthand or 70 wpm; OED 154 or concurrent enrollment.
A further development of shorthand skills and transcription techniques. Emphasis is on mailable letters, English, spelling and punctuation.

OED 255 Medical Terms / 3 cr. hrs. / 3 periods
Course provides an understanding of terminology essential to the medical business office. Emphasis is on understanding and ease in using medical terms.

OED 256 Medical Transcription / 3 cr. hrs. / 3 periods
☐ Prerequisite: OED 255 or knowledge of medical terminology and typing speed of 40 wpm.
Course develops speed and accuracy in typing, skill in using transcribing equipment and expansion of medical terminology. Practice in transcribing medical reports and correspondence is emphasized.

OED 257 Office Procedures / 3 cr. hrs. / 3 periods
☐ Prerequisite: OED 112 or equivalent.
A study of functions and procedures used in a wide range of office activities. Includes analysis of the secretarial profession, techniques to improve office efficiency and development of a secretarial personality.

OED 259 Business Communications / 3 cr hrs. / 3 periods
☐ Prerequisite: OED 154.
The general principles of effective communication as well as techniques pertinent to specific types of business correspondence. Social and business writing, claim and adjustment letters, interoffice memos, sales letters, credit letters, collection letters and letters of application and data sheet are covered.
(formerly BUS 259)

OED 264 Transcription / 3 cr. hrs. / 3 periods
☐ Prerequisite: OED 253 or equivalent or concurrent enrollment in OED 154.
A production course which offers an opportunity to develop techniques and skills of high quality. Course content includes shorthand, typewriting, spelling, punctuation, word usage, proofreading, editing and other related topics. A standard of mailability is stressed.

OED 299 Cooperative Office Education Training / 3 cr. hrs. 15 periods (lab)
A supervised cooperative work program for students in an office education occupation for a minimum of 15 hours per week. Course may be repeated.

OPERATING ENGINEERS

OEG 51 Diesel Engines II / 4 cr. hrs. / 5 periods (2 lec., 3 lab)
The functions of diesel engines, injectors, exhaust and intake valves, oil and cooling systems are discussed.

OEG 52 Equipment Structure and Function / 4 cr. hrs. 5 periods
Covered are basic functions of front loaders, backhoes, crawlers, cherry pickers, scrapers, muckers, 4-wheel drive trains, and transmissions.

OEG 53 Transmission of Power / 4 cr. hrs. / 5 periods (3 lec., 2 lab)
Discussed are the function and methods of transmitting power from the engine to the drive wheels; automatic and geared transmissions, universal joints, and chain and sprocket drives.

OEG 56 Grades, Plans & Earthwork I / 5 cr. hrs. / 5 periods
The comprehension of grade plans and charts, surveying and staking for earth removal or fill, the use of the hand level, transit, rod and chains.

OEG 57 Grades, Plans & Earthwork II / 5 cr. hrs. 5 periods
☐ Prerequisite: For indentured apprenticeship students who are employed in the trade.
Includes operation of the service truck, lectures on fuels, oils, lubricants, the servicing and maintenance of earth moving equipment, equipment starting, operating, stopping and minor repairs and adjustments.

OEG 58 Grades, Plans & Earthwork III / 5 cr. hrs. 5 periods

☐ Prerequisite: For indentured apprenticeship students who are employed in the trade.

The proper use of compaction equipment is taught. Also studied are rollers, compactors, loaders, conveyors, tractors, crawlers, soils, material testing and cost estimating.

OPERATING ROOM TECHNOLOGY

ORT 52 Basic Surgical Technology / 5 cr. hrs. / 12 periods (2 lec., 10 lab)

☐ Prerequisite: Satisfactory completion of core curriculum and consent of coordinator.

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.

ORT 53 Surgical Biology / 3 cr. hrs. / 3 periods

☐ Prerequisite: Satisfactory completion of core curriculum and consent of coordinator.

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.

ORT 54 Surgical Procedures / 3 cr. hrs. / 3 periods

☐ Prerequisite: Satisfactory completion of core curriculum and consent of coordinator.

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.

ORT 55 Surgical Anatomy / 4 cr. hrs. / 6 periods (3 lec., 3 lab)

☐ Prerequisite: Satisfactory completion of core curriculum and consent of coordinator.

A detailed regional review of human anatomy as encountered during surgery. Includes laboratory study.

ORT 91 Hospital Externship Practicum / 12 cr. hrs. 36 periods (4 lec., 32 lab)

☐ Prerequisite: ORT 52, 53, 54, 55 and consent of instructor.

A minimum of 500 hours of supervised clinical experience is spent in operating rooms of local affiliated hospitals utilizing acquired skills in actual surgical situations.

OPHTHALMIC DISPENSING

ODT 51 Optical Orientation I / 6 cr. hrs. / 8 periods (5 lec., 3 lab)

☐ Prerequisite: Consent of program coordinator.

This course covers the role of the ophthalmic laboratory, laboratory technician, dispensing optician, optometrist, ophthalmologist, etc.; and basic information on lenses, refractive errors, frame construction, repair and laboratory organization.

ODT 52 Optical Orientation II / 3 cr. hrs. / 3 periods

☐ Prerequisite: ODT 51.

Introduction to frame measurements, reading prescriptions and frame adjusting, types of single vision and multi-focal lenses, frames and manufacturers.

ODT 53 Optical Laboratory I / 2 cr. hrs. / 6 periods (lab)

☐ Prerequisite: ODT 51.

Lens surfacing, layouts, base curves, thickness, lens blanks, hardening, lense edging and insertion.

ODT 54 Optical Dispensing I / 6 cr. hrs. / 10 periods (4 lec., 6 lab)

☐ Prerequisite: ODT 51, 52, 53.

Facial measurements, adjusting, frame selection, vocational glasses, lens and frame design.

ODT 55 Contact Lens Anatomy and Physiology / 4 cr. hrs. 4 periods

☐ Prerequisite: ODT 51, 52, 53.

Basic information on the anatomy and physiology of the eye for contact lens fitting. Introduction to fitting procedures.

ODT 56 Ophthalmic Assistant / 3 cr. hrs. / 5 periods (2 lec., 3 lab)

☐ Prerequisite: ODT 51, 52, 53.

Optical instrumentation, field charting, visual skills, tangent screen, taking case histories, office procedures, etc.

ODT 57 Contact Lenses / 5 cr. hrs. / 7 periods (4 lec., 3 lab)

☐ Prerequisite: ODT 55.

The theory and practice of contact lens fitting optics, corneal measurements, lens check-outs, adjusting, bifocal and toric contact lenses and patient control.

ODT 58 Optical Dispensing II / 4 cr. hrs. / 10 periods (4 lec., 6 lab)

☐ Prerequisite: ODT 51, 52, 53, 54.

Cataract lenses, adjusting, styles, record keeping, problem prescriptions and optical dispensary organization.

ODT 59 Senior Seminar / 2 cr. hrs. / 2 periods

☐ Prerequisite: ODT 51 through ODT 56.

Ethics of the profession, complete review of all material for state board examination, state laws and program evaluation.

ODT 299 Cooperative Ophthalmic Dispensing Training 3 cr. hrs. / 15 periods (lab)

☐ Prerequisite: ODT 51 through ODT 56.

Realistic patient contact with students working in various professional offices and optical dispensaries. Second year level.

PAINTING

PNT 50 Beginning Painting and Decorating / 4 cr. hrs. 5 periods (3 lec., 2 lab)

The student learns the methods of preparing metal, wood, and masonry surfaces for different types of paint, along with the chemistry and manufacture of paint.

PNT 51 Advanced Painting and Decorating / 4 cr. hrs. 5 periods (3 lec., 2 lab)

Included are special applications for covering unusual surfaces and matching and hanging wallpaper, the theory of color mixing and the selection of wall coverings.

PAPAGO

PGO 50 Elementary Papago / 4 cr. hrs. / 4 periods

This is a conversation course with emphasis on listening and repetition. Designed for the non-Papago speaking students.

PGO 51 Papago for Native Speakers / 4 cr. hrs. / 4 periods
☐ Prerequisite: Knowledge of Papago.
Class needs will be determined, due to different speaking dialects.

PHILOSOPHY

PHI 101–102 Introduction to Philosophy I, II 3–3 cr. hrs. 3 periods
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 120 An Introduction to Logic / 3 cr. hrs. / 3 periods
The objective of this course is to increase the student's awareness of the requirements and processes of valid thinking, decision-making and communication.

PHI 130 Introductory Studies in Ethics and Social Philosophy / 3 cr. hrs. / 3 periods
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.

PHI 140 Philosophy of Religion / 3 cr. hrs. / 3 periods
An introduction to the philosophical study of religion. (Same as Religion 140.)

PHI 145 Historical Philosophy / 3 cr. hrs. / 3 periods
Course is designed to respond to student interest for study of particular topics in Philosophy. Past studies have included Plato, Hume and Aesthetics.

PHYSICAL EDUCATION

PED 1 Practicum I / 1 cr. hr. / 3 periods (lab)
The student experiences on-the-job supervised training as an aide. Assignments are in the service activity program, intramural program, or other related professional posts.

PED 2 Practicum II / 1 cr. hr. / 3 periods (lab)
The student experiences on-the-job supervised training as an aide. Assignments are in the service activity program, intramural program, or other related professional posts.

PED 3 Practicum III / 1 cr. hr. / 3 periods (lab)
The student experiences on-the-job supervised training as an aide. Assignments are in the service activity program, intramural program, or other related professional posts.

PED 4 Practicum IV / 1 cr. hr. / 3 periods (lab)
The student experiences on-the-job supervised training as an aide. Assignments are in the service activity program, intramural program, or other related professional posts.

PED 5 Field Work I / 1 cr. hr. / 1 period
Provides a cooperative educational experience involving the students in working with federal, state, county, municipal and private agencies under supervision.

PED 120 Facilities for Physical Education and Recreation 2 cr. hrs. / 2 periods
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 120.)

PED 125 Foundations of Athletic Training / 2 cr. hrs. 2 periods
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.

PED 130 Elementary School Physical Education / 3 cr. hrs. 3 periods
This is a skills/methods course providing the teacher with the basic skills and knowledge of materials and methods of teaching games, relays and modified activities in team and individual sports. Students also are introduced to the theoretical basis of using the movement education approach in teaching physical education in the elementary school.

PED 131–138 Professional Activities / 1–8 cr. hrs. 2–16 periods (1–8 lec., 1–8 lab)
A series of eight activities offered on a two year rotational basis, designed for physical education majors and minors. Two units of one credit each are taught each semester. These are skill oriented classes with emphasis on skill and strategy development beyond the beginning/intermediate level.

PED 131 Softball / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 132 Basketball / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 133 Tennis / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 134 Wrestling / Self Defense / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 135 Soccer / Field Hockey / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 136 Volleyball / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 137 Golf / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 138 Badminton / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 139 Introduction to Leisure Education / 3 cr. hrs. 3 periods
For prospective professionals in the fields of health, physical education and recreation — a survey of opportunities and qualifications as well as a general orientation on these fields.

PED 144 Dance / 2 cr. hrs. / 2 periods
Introduction to folk, square, modern and social dances for majors and minors. (Same as Recreation 144.)

PED 145 Sports Officiating / 2 cr. hrs. / 2 periods
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 145.)

PED 147 Intramural Sports and Equipment / 2 cr. hrs. 2 periods
A study of intramural organization and administration with practical experience in the Pima Community College intramural program. Students also are exposed to equipment purchasing procedures, inventory procedures, maintenance procedures and repair techniques.

PED 149 History of Physical Education / 2 cr. hrs. 2 periods
A historical look at the social, political, religious and cultural influences as they shaped the physical activities of man from prehistoric times to the present. Emphasis also is on the leaders of physical education in each major period of time.

PED 150 Beginning Archery / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 152 Badminton / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 156 Basketball / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 158 Folklore Dances / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 158 Bailes Folkloricos / 1 cr. hr. / 2 periods (1 lec., 1 lab)
Se enseñarán los más celebrados bailes tradicionales de diversas regiones de México. El desarrollo de las clases será desde ejercicios de calentamiento hasta la técnica del zapateado, progresivamente, según las aptitudes de los elementos; y como complemento del folklore, tendrán clases de técnica de danza moderna cuando sea necesario para que los elementos tengan mayor proyección hacia el público.

PED 159 Beginning Dance / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 160 Baseball / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 162 Bowling / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 164 Defensive Tactics / 2 cr. hrs. / 3 periods (2 lec., 1 lab)

PED 165 Deportes Bilingues / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 166 Beginning Fencing / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 168 Field Hockey / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 169 Flag Football / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 170 Beginning Golf / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 171 Gymnastics / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 172 Handball / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 174 Ice Hockey / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 175 Ice Skating / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 176 Beginning Judo / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 177 Physical Fitness / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 178 Scuba / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 179 Self-Defense for Women / 2 cr. hrs. / 3 periods (2 lec., 1 lab)

PED 180 Soccer / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 181 Softball / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 182 Square Dancing / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 183 Swimming / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 184 Life Saving / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 185 Water Safety Instructor / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 186 Beginning Tennis / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 187 Volleyball / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 188 Weight Training / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 189 Wrestling / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 200 Independent Activity / 1 cr. hr. / 2 periods (1 lec., 1 lab)
Independent activity in physical education under supervision of an instructor.

PED 250 Advanced Archery / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 256 Dance, Arabic / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 259 Advanced Dancing / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 266 Advanced Fencing / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 270 Advanced Golf / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 271 Advanced Gymnastics / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 276 Advanced Judo / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 286 Advanced Tennis / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 299 Cooperative Physical Education Training 3 cr. hrs. / 15 periods (lab)
A supervised cooperative work program for students in a physical education occupation for a minimum of 15 hours per week. Course may be repeated.

PHYSICS

PHY 101 Technical Physics I / 3 cr. hrs. / 4 periods (2 lec., 2 lab)
Designed for the technologist, the course is based on the specific applications of physics to the automotive, air conditioning and other technical fields. All math needed is developed concurrently.

PHY 102 Technical Physics II / 3 cr. hrs. / 4 periods (2 lec., 2 lab)
☐ Prerequisite: PHY 101, MTH 70.
A continuation of PHY 101. The course deals mostly with the application of the electro-magnetic theory to the technologies.

PHY 105 Fundamental Physics / 4 cr. hrs. / 6 periods (3 lec., 3 lab)
☐ Prerequisite: High school algebra.
Intended for health careers, this course offers a brief introduction to the phenomena occurring in the physical world. Units or topics are chosen according to special interests of students.

PHY 112 General Physics for Education Majors / 3 cr. hrs. 5 periods (2 lec., 3 lab)

☐ Prerequisite: High school algebra.
For education majors. A one-semester course offering an introduction to the subject matter of general physics, mechanics, heat, light, sound, electricity, magnetism and modern physics.

PHY 121 Introductory Physics I / 4 cr. hrs. / 7 periods (4 lec., 3 lab)

☐ Prerequisite: High school algebra.
Topics include mechanics, heat, waves and sound. A non-calculus, liberal arts course.

PHY 122 Introductory Physics II / 4 cr. hrs. / 7 periods (4 lec., 3 lab)

☐ Prerequisite: PHY 121.
Light, electricity and magnetism, atomic and nuclear physics.

PHY 131 Introductory Physics with Calculus I / 4 cr. hrs. 7 periods (4 lec., 3 lab)

☐ Prerequisite: Calculus or concurrent.
For mathematics and science majors. Topics include mechanics, heat, waves and sound.

PHY 132 Introductory Physics with Calculus II / 4 cr. hrs. 7 periods (4 lec., 3 lab)

☐ Prerequisite: PHY 131.
Light, electricity and magnetism, atomic and nuclear physics.

PHY 170 Practical Applied Physics / 1–3 cr. hrs. 1–3 periods

☐ Prerequisite: Certain topics may have a prerequisite.
Topics available include how things work, physics of musical instruments, science and society, holography, energy and independent study.

PHY 210 Introductory Mechanics / 4 cr. hrs. – 7 periods (4 lec., 3 lab)

☐ Prerequisite: Calculus and Analytic Geometry.
An introduction to mechanics. Recommended for physics and engineering majors. Kinematics, dynamics, energy, momentum, and harmonic motion.

PHY 216 Introductory Electricity and Magnetism / 4 cr. hrs. 7 periods (4 lec., 3 lab)

☐ Prerequisite: PHY 210.
Electricity and magnetism through Maxwell's equations. For physics and engineering majors.

PHY 221 Introduction to Waves and Heat / 3 cr. hrs. 6 periods (3 lec., 3 lab)

☐ Prerequisite: PHY 210.
Heat, fluids, sound and light, including optics and optical instruments.

PHY 230 Introduction to Modern Physics / 3 cr. hrs. 6 periods (3 lec., 3 lab)

☐ Prerequisite: PHY 210 and PHY 216 or PHY 131 and PHY 132, MTH 180, MTH 185.
Atomic and nuclear physics, relativity and radioactivity, quantum physics.

PIPEFITTING

PFT 51 Basic Heating for Pipefitters / 4 cr. hrs. / 5 periods (3 lec., 2 lab)

A study of steam, electrical and forced air heating systems; the basics of boiler and furnace construction and repair.

PFT 52 Advanced Steam Fitting / 4 cr. hrs. / 5 periods (3 lec., 2 lab)

Students learn techniques of designing pipelines to carry high pressure steam. Expansion, contraction, and measuring coefficient of expansion in various types of pipe also are discussed.

PFT 53 Technical Physics for Pipefitters and Boilermakers 4 cr. hrs. / 5 periods (4 lec., 1 lab)

Students are acquainted with the principles of physics that apply to the pipefitting and boilermaker trades.

PFT 54 Technical Math for Pipefitters and Boilermakers 4 cr. hrs. / 5 periods

Included are basic algebra, ratios, geometry, line equations, and elements of trigonometry.

PFT 55 Refrigeration Controls & Piping / 4 cr. hrs. 6 periods (3 lec., 3 lab)

Students learn the operation, repair and installation of pneumatic and electro/mechanical controls used in commercial and industrial refrigeration. The installation, repair and maintenance of refrigeration piping also are taught.

PFT 56 Mechanical Drawing for the Building Trade 4 cr. hrs. / 6 periods (2 lec., 4 lab)

Students learn the use of drafting tools, sketching, lettering, orthographic projection, dimensioning isometrics, sections and auxiliary views.

PLASTERERS AND CEMENT MASONS

PCM 50 Cost Estimating for Plasterers and Cement Masons 4 cr. hrs. / 4 periods (2 lec., 2 lab)

Methods and techniques of transmitting blueprints to building material needs, and computing costs of the materials needed in the construction of cement and masonry structures.

PLUMBING

PLB 50 Beginning Plumbing / 4 cr. hrs. / 5 periods (2 lec., 3 lab)

A study of the basics of pipe fitting, threading, leading and layout of residential and commercial plumbing. Building codes are considered and volumes and pressures of fluids are calculated.

PLB 51 Advanced Plumbing / 4 cr. hrs. / 5 periods (2 lec., 3 lab)

Plumbing layout, design and building codes are taught. The installation and application of plastic, copper, black and galvanized iron pipe are discussed.

POLITICAL SCIENCE

POL 50 Immigration Law and Practices / 3 cr. hrs. 3 periods

The legal and political status of immigrants from Mexico, the process of immigration and counseling for the immigrant.

POL 50 Derecho, Concepts y Procesos de Emigración 3 cr. hrs. / 3 periods

Se estudiará el derecho de imigración a los Estados Unidos, sus procesos y ramificaciones legales.

PED 147 Intramural Sports and Equipment / 2 cr. hrs. 2 periods
A study of intramural organization and administration with practical experience in the Pima Community College intramural program. Students also are exposed to equipment purchasing procedures, inventory procedures, maintenance procedures and repair techniques.

PED 149 History of Physical Education / 2 cr. hrs. 2 periods
A historical look at the social, political, religious and cultural influences as they shaped the physical activities of man from prehistoric times to the present. Emphasis also is on the leaders of physical education in each major period of time.

PED 150 Beginning Archery / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 152 Badminton / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 156 Basketball / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 158 Folklore Dances / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 158 Bailes Folkloricos / 1 cr. hr. / 2 periods (1 lec., 1 lab)
Se enseñarán los más celebrados bailes tradicionales de diversas regiones de México. El desarrollo de las clases será desde ejercicios de calentamiento hasta la técnica del zapateado, progresivamente, según las aptitudes de los elementos; y como complemento del folklore, tendrán clases de técnica de danza moderna cuando sea necesario para que los elementos tengan mayor proyección hacia el público.

PED 159 Beginning Dance / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 160 Baseball / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 162 Bowling / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 164 Defensive Tactics / 2 cr. hrs. / 3 periods (2 lec., 1 lab)

PED 165 Deportes Bilingues / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 166 Beginning Fencing / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 168 Field Hockey / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 169 Flag Football / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 170 Beginning Golf / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 171 Gymnastics / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 172 Handball / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 174 Ice Hockey / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 175 Ice Skating / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 176 Beginning Judo / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 177 Physical Fitness / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 178 Scuba / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 179 Self-Defense for Women / 2 cr. hrs. / 3 periods (2 lec., 1 lab)

PED 180 Soccer / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 181 Softball / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 182 Square Dancing / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 183 Swimming / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 184 Life Saving / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 185 Water Safety Instructor / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 186 Beginning Tennis / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 187 Volleyball / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 188 Weight Training / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 189 Wrestling / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 200 Independent Activity / 1 cr. hr. / 2 periods (1 lec., 1 lab)
Independent activity in physical education under supervision of an instructor.

PED 250 Advanced Archery / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 256 Dance, Arabic / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 259 Advanced Dancing / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 266 Advanced Fencing / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 270 Advanced Golf / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 271 Advanced Gymnastics / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 276 Advanced Judo / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 286 Advanced Tennis / 1 cr. hr. / 2 periods (1 lec., 1 lab)

PED 299 Cooperative Physical Education Training 3 cr. hrs. / 15 periods (lab)
A supervised cooperative work program for students in a physical education occupation for a minimum of 15 hours per week. Course may be repeated.

PHYSICS

PHY 101 Technical Physics I / 3 cr. hrs. / 4 periods (2 lec., 2 lab)
Designed for the technologist, the course is based on the specific applications of physics to the automotive, air conditioning and other technical fields. All math needed is developed concurrently.

PHY 102 Technical Physics II / 3 cr. hrs. / 4 periods (2 lec., 2 lab)
☐ Prerequisite: PHY 101, MTH 70.
A continuation of PHY 101. The course deals mostly with the application of the electro-magnetic theory to the technologies.

PHY 105 Fundamental Physics / 4 cr. hrs. / 6 periods (3 lec., 3 lab)
☐ Prerequisite: High school algebra.
Intended for health careers, this course offers a brief introduction to the phenomena occurring in the physical world. Units or topics are chosen according to special interests of students.

PHY 112 General Physics for Education Majors / 3 cr. hrs. 5 periods (2 lec., 3 lab)

☐ Prerequisite: High school algebra.
For education majors. A one-semester course offering an introduction to the subject matter of general physics, mechanics, heat, light, sound, electricity, magnetism and modern physics.

PHY 121 Introductory Physics I / 4 cr. hrs. / 7 periods (4 lec., 3 lab)

☐ Prerequisite: High school algebra.
Topics include mechanics, heat, waves and sound. A non-calculus, liberal arts course.

PHY 122 Introductory Physics II / 4 cr. hrs. / 7 periods (4 lec., 3 lab)

☐ Prerequisite: PHY 121.
Light, electricity and magnetism, atomic and nuclear physics.

PHY 131 Introductory Physics with Calculus I / 4 cr. hrs. 7 periods (4 lec., 3 lab)

☐ Prerequisite: Calculus or concurrent.
For mathematics and science majors. Topics include mechanics, heat, waves and sound.

PHY 132 Introductory Physics with Calculus II / 4 cr. hrs. 7 periods (4 lec., 3 lab)

☐ Prerequisite: PHY 131.
Light, electricity and magnetism, atomic and nuclear physics.

PHY 170 Practical Applied Physics / 1–3 cr. hrs. 1–3 periods

☐ Prerequisite: Certain topics may have a prerequisite.
Topics available include how things work, physics of musical instruments, science and society, holography, energy and independent study.

PHY 210 Introductory Mechanics / 4 cr. hrs. – 7 periods (4 lec., 3 lab)

☐ Prerequisite: Calculus and Analytic Geometry.
An introduction to mechanics. Recommended for physics and engineering majors. Kinematics, dynamics, energy, momentum, and harmonic motion.

PHY 216 Introductory Electricity and Magnetism / 4 cr. hrs. 7 periods (4 lec., 3 lab)

☐ Prerequisite: PHY 210.
Electricity and magnetism through Maxwell's equations. For physics and engineering majors.

PHY 221 Introduction to Waves and Heat / 3 cr. hrs. 6 periods (3 lec., 3 lab)

☐ Prerequisite: PHY 210.
Heat, fluids, sound and light, including optics and optical instruments.

PHY 230 Introduction to Modern Physics / 3 cr. hrs. 6 periods (3 lec., 3 lab)

☐ Prerequisite: PHY 210 and PHY 216 or PHY 131 and PHY 132, MTH 180, MTH 185.
Atomic and nuclear physics, relativity and radioactivity, quantum physics.

PIPEFITTING

PFT 51 Basic Heating for Pipefitters / 4 cr. hrs. / 5 periods (3 lec., 2 lab)

A study of steam, electrical and forced air heating systems; the basics of boiler and furnace construction and repair.

PFT 52 Advanced Steam Fitting / 4 cr. hrs. / 5 periods (3 lec., 2 lab)

Students learn techniques of designing pipelines to carry high pressure steam. Expansion, contraction, and measuring coefficient of expansion in various types of pipe also are discussed.

PFT 53 Technical Physics for Pipefitters and Boilermakers 4 cr. hrs. / 5 periods (4 lec., 1 lab)

Students are acquainted with the principles of physics that apply to the pipefitting and boilermaker trades.

PFT 54 Technical Math for Pipefitters and Boilermakers 4 cr. hrs. / 5 periods

Included are basic algebra, ratios, geometry, line equations, and elements of trigonometry.

PFT 55 Refrigeration Controls & Piping / 4 cr. hrs. 6 periods (3 lec., 3 lab)

Students learn the operation, repair and installation of pneumatic and electro/mechanical controls used in commercial and industrial refrigeration. The installation, repair and maintenance of refrigeration piping also are taught.

PFT 56 Mechanical Drawing for the Building Trade 4 cr. hrs. / 6 periods (2 lec., 4 lab)

Students learn the use of drafting tools, sketching, lettering, orthographic projection, dimensioning isometrics, sections and auxiliary views.

PLASTERERS AND CEMENT MASONS

PCM 50 Cost Estimating for Plasterers and Cement Masons 4 cr. hrs. / 4 periods (2 lec., 2 lab)

Methods and techniques of transmitting blueprints to building material needs, and computing costs of the materials needed in the construction of cement and masonry structures.

PLUMBING

PLB 50 Beginning Plumbing / 4 cr. hrs. / 5 periods (2 lec., 3 lab)

A study of the basics of pipe fitting, threading, leading and layout of residential and commercial plumbing. Building codes are considered and volumes and pressures of fluids are calculated.

PLB 51 Advanced Plumbing / 4 cr. hrs. / 5 periods (2 lec., 3 lab)

Plumbing layout, design and building codes are taught. The installation and application of plastic, copper, black and galvanized iron pipe are discussed.

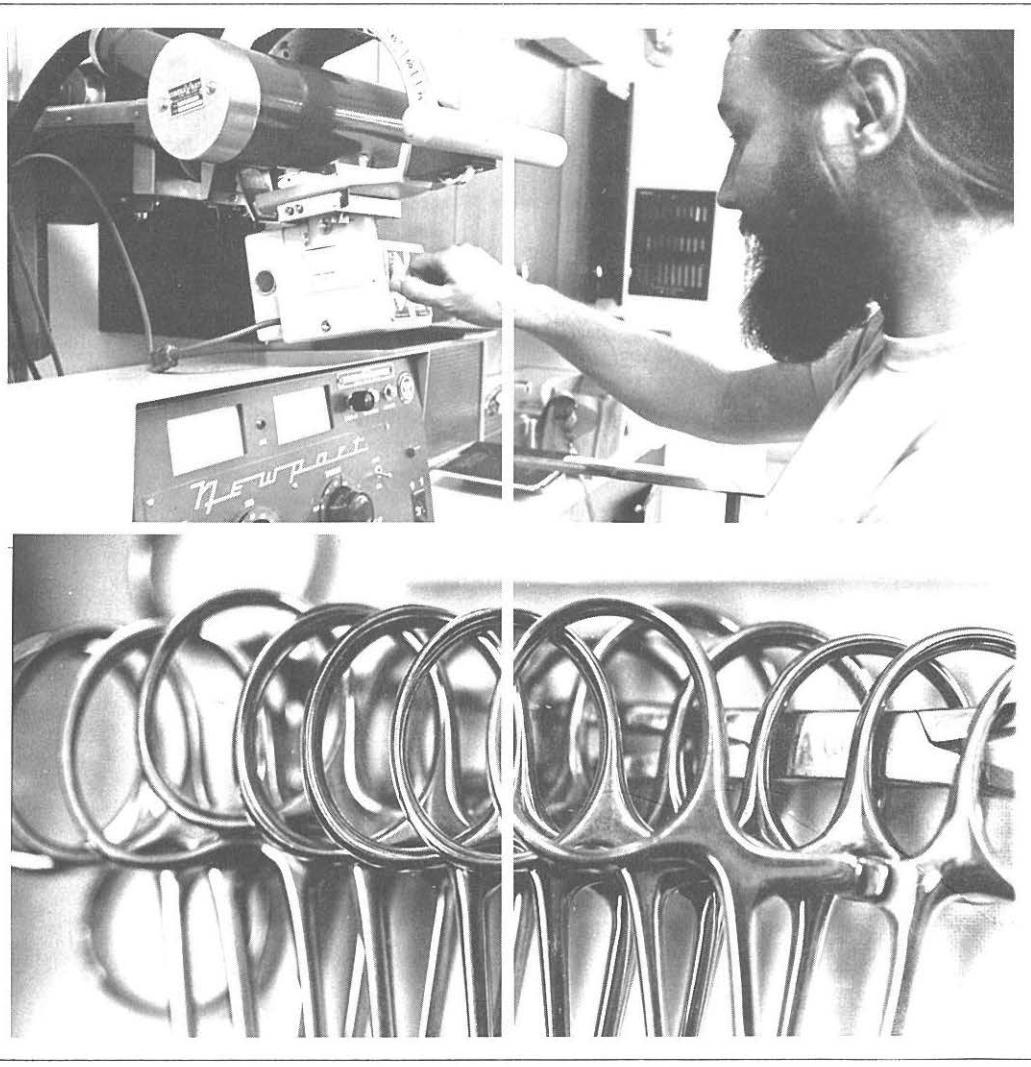
POLITICAL SCIENCE

POL 50 Immigration Law and Practices / 3 cr. hrs. 3 periods

The legal and political status of immigrants from Mexico, the process of immigration and counseling for the immigrant.

POL 50 Derecho, Concepts y Procesos de Emigración 3 cr. hrs. / 3 periods

Se estudiará el derecho de imigración a los Estados Unidos, sus procesos y ramificaciones legales.


Newport

POL 100 Introduction to Political Science / 3 cr. hrs. 3 periods
Politics. What is it? What is its significance in daily life? How do political systems change?

POL 110 American National Government and Politics 3 cr .hrs. / 3 periods
A survey of the institutions of American government and the evolution of our political system. Included are studies of the Constitution, roles of political parties, interest groups, public opinion and voting behavior. Special attention is given to positions of economic, ethnic and religious minorities in American society.

POL 111 American State and Local Governments and Politics / 3 cr. hrs. / 3 periods
Survey of state and local governments and politics with particular emphasis on the political culture of Arizona, the state's politically relevant economic and ethnic groups, and its current political trends.

POL 120 Introduction to Comparative Politics / 3 cr. hrs. 3 periods
An examination of the basic concepts and methods of comparative political analysis and their application to the political systems of Western Europe, the Soviet Union, Eastern Europe, and the developing areas.

POL 130 Introduction to International Relations / 3 cr. hrs. 3 periods
A general examination of international relations including the elements of national power; the economic, social and psychological determinants of international political behavior; formation of foreign policy; international law; and international and regional organizations.

POL 140 Minority Groups and the Political Process 3 cr. hrs. / 3 periods
An investigation of the position of various minority groups in the American political system, including their general political attitudes and voting behavior, patterns of political organization, party activity, and their role in the formation of public policy.

POL 149 Independent Study in Political Science 2–4 cr. hrs. / 2–4 periods
Independent readings or special projects to be arranged with the instructor.

POL 190 Political Revolution and Violence / 3 cr. hrs. 3 periods
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.

PSYCHOLOGY

PSY 100 Introduction to Psychology I / 3 cr. hrs. / 3 periods
Survey of psychology; growth of the individual, behavior disorders, introduction to social psychology, learning and history of the field.

PSY 101 Introduction to Psychology II / 3 cr. hrs. / 3 periods
Biological bases of behavior, sensation and perception, motivation, emotion and stress.

PSY 102 Introduction to Social Psychology / 3 cr. hrs. 3 periods
The basic theories and concepts of social psychology and the individual's experience in group situations.

PSY 103 Normal Personality I / 3 cr. hrs. / 3 periods
Psychological functioning and coping behaviors for normal personality development. Early adulthood is stressed.

PSY 203 Normal Personality II / 3 cr .hrs. / 3 periods
Further study of normal personality through participation in groups. Bioenergetics and Gestalt are among the group approaches available. For information regarding specific semester offerings, consult the behavioral sciences area.

PSY 296 Individual Studies in Psychology / 3–6 cr. hrs. 3–6 periods
☐ Prerequisite: Consent of instructor.
An exploration of special interest areas. Content to be determined by student and facilitator/instructor.

PSY 298 Social Psychology Practicum / 1–6 cr. hrs. 3–18 periods (lab)
☐ Prerequisite: Consent of instructor.
Students become familiar with some specific areas of social psychology through a review of pertinent research, directed observation, and personal participation in relevant experimental or natural settings.

PUBLIC ADMINISTRATION

PAD 105 Introduction to Public Administration / 3 cr. hrs. 3 periods
Public and private approaches to leading social issues, and the role of the public administrator in their resolution.

RADIOLOGIC (X-RAY) TECHNOLOGY

RAD 55 Skull Refresher / 2 cr. hrs. / 2 periods
☐ Prerequisite: Registered or registry eligible (A.R.R.T.)
This course is for registered or registry eligible radiologic technologists to review and practice radiographic-positioning for visualization of the bones of the skull, sinuses and mastoids. Radiographic phantoms are used to demonstrate the principles of exposure. Group process is used to demonstrate positioning and to critique films.

RAD 71 Radiographic Fundamentals / 4 cr. hrs. / 6 periods (3 lec., 3 lab)
☐ Prerequisite: Consent of program coordinator.
An introduction to radiologic technology as a profession and its application in the allied health professions. Included are the role and responsibilities of radiologic technologists, the theoretical knowledge and practice necessary for competence in the accurate utilization of X-ray and processing equipment for diagnosis.

RAD 72 Radiographic Processing and Technique / 4 cr. hrs. 6 periods (3 lec., 3 lab)
☐ Prerequisite: RAD 71 and consent of program coordinator.
Emphasizes the technical factors and processing techniques utilized in the formation of the diagnostic X-ray image. Included are the factors affecting and controlling radiographic quality, film characteristics, and manual/automatic film processing.

RAD 73 Radiographic Positioning I / 4 cr. hrs. / 6 periods (3 lec., 3 lab)
☐ Prerequisite: RAD 71 and consent of program coordinator.
Demonstration and practice of routine and special radiographic positioning for visualization of the bones of the skeleton, exclusive of those of the skull, and the viscera of the chest and abdomen. Radiographic phantoms are used to relate the principles of exposure and anatomical positioning. The group process is used to evaluate all radiographs.

RAD 81 Radiographic Positioning II / 5 cr. hrs. / 7 periods (4 lec., 3 lab)

☐ Prerequisite: Satisfactory completion of required first-year courses.

Students learn the radiographic positions required to demonstrate the bones of the skull and the visceral organs. Class discussions include fluoroscopic procedures, movile radiography, the use of contrast media and patient care.

RAD 82 Radiologic Physics I / 5 cr. hrs. / 7 periods (4 lec., 3 lab)

☐ Prerequisite: Satisfactory completion of required first-year courses.

Students learn the function of x-ray machines, the electronic components of the x-ray circuit and special accessory equipment required to produce diagnostic radiographs. Emphasis is on accurate radiographic principles and technical factors, the demonstration and application of x-ray equipment, and the methods of protecting the patient and personnel from ionizing radiation.

RAD 83 Clinical Procedures I / 2 cr. hrs. / 6 periods (lab)

☐ Prerequisite: Satisfactory completion of required first-year courses.

Students apply their acquired skills of routine radiographic procedures and related studies in clinical situations under the direct supervision of staff radiologists and/or registered radiologic technologists of affiliated hospitals. Please note that students must register for two lab sections for a total of six lab hours per week in the affiliated hospital assigned to them.

RAD 84 Radiation Therapy, Biology and Nuclear Medicine 3 cr. hrs. / 3 periods

☐ Prerequisite: Satisfactory completion of required first-year courses.

An introduction to radiation-oncology and nuclear medicine which utilize ionizing radiation for the diagnosis and treatment of benign and malignant diseases. Emphasis is on the effects of radiation on human tissues, and the equipment and technology utilized in radiotherapy and nuclear medicine.

RAD 85 Radiographic Positioning III / 5 cr. hrs. / 7 periods (4 lec., 3 lab)

☐ Prerequisite: Satisfactory completion of required third-semester courses.

Demonstration and practice of special radiographic procedures and such specialties as contrast media studies, pediatric radiography, nursing and surgical procedures.

RAD 86 Clinical Procedures II / 2 cr. hrs. / 6 periods (lab)

☐ Prerequisite: Satisfactory completion of required third-semester courses.

A continuation of RAD 83. Students apply advanced skills in emergency and specialized radiology procedures in clinical situations under direct supervision of staff radiologists and/or registered radiologic technologists of affiliated hospitals. Please note that students must register for two lab sections for a total of six lab hours per week in the affiliated hospital assigned to them.

RAD 88 Radiologic Physics II / 5 cr. hrs. / 7 periods (4 lec., 3 lab)

☐ Prerequisite: Satisfactory completion of required third-semester courses.

A continuation of RAD 82 with special emphasis on the equipment utilized in mobile radiography, body-section radiography, special procedures, ultrasound, xeroradiography, thermography and image intensification.

RAD 91 Hospital Externship Practicum I / 12 cr. hrs. 40 periods (lab)

☐ Prerequisite: Satisfactory completion of the first four semesters of program and consent of coordinator.

All students must spend an appropriate time as an extern in an affiliated approved hospital radiology department to obtain additional practical training. Such approved radiology departments must be under the direct supervision of a radiologic technologist registered by the American Registry of Radiologic Technologists, and a radiologist.

RAD 92 Hospital Externship Practicum II / 12 cr. hrs. 40 periods (lab)

☐ Prerequisite: RAD 91.

A continuation of RAD 91.

RAD 93 Hospital Externship Practicum III / 12 cr. hrs. 40 periods (lab)

☐ Prerequisite: RAD 92.

A continuation of RAD 92.

READING

REA 52 Bilingual Reading / 3 cr. hrs. / 3 periods

☐ Prerequisite: Some reading ability in English and Spanish.

Laboratory methods and techniques are used to improve reading in English and Spanish. There are side-by-side readings in English and Spanish, independent readings and vocabulary development in both.

REA 52 Lecturas Bilingues / 3 cr. hrs. / 3 periods

Para estudiantes que desean mejorar su habilidad en el uso del español, o los dos idiomas. Escritos originales en español coincidirán con su traducción en inglés; escritos en inglés, coincidirán con su traducción en español. Finalmente, escritos en inglés, todavía no traducidos, serán comparados con escritos en español del mismo tema. El laboratorio permitirá trabajos individuales además de en grupo.

REA 100 Reading 100 Series / 4 cr. hrs. / 4 periods

All students should register for the REA 100 series which is composed of three levels. Level placement for each student is determined by diagnostic testing and teacher evaluation after enrollment. Day classes meet for four hours a week but special schedules can be arranged for students who would otherwise have a class conflict* Non-native speakers of English should see English as a Second Language. Group and individual instruction is emphasized in vocabulary, comprehension, study skills and reading speed in each of the three levels which are REA 100 — Reading Improvement; REA 101 — Developmental Reading; REA 102 — Critical Reading. (formerly REA 60 series)

*Afternoon and evening classes meet two hours twice a week.

REAL ESTATE

RLS 65 Real Estate Principles / 4 cr. hrs. / 4 periods

This course prepares students for the state salesman's licensure qualifying examination. In addition, it provides familiarity with real estate and associated rules and regulations.

RLS 66 Real Estate Practices / 4 cr. hrs. / 4 periods

☐ Prerequisite: RLS 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.

RLS 67 Real Estate Law / 3 cr. hrs. / 3 periods

☐ Prerequisite: RLS 66 or consent of instructor.

This course provides real estate students with the basic concepts and application of the general principles of real estaate law. Legal topics include freehold estates, landlord and tenant, concurrent ownership, easements, profits, licenses, deeds and conveyances, and recording.

RLS 68 Real Estate Appraisals / 3 cr. hrs. / 3 periods

☐ Prerequisite: RLS 65 or consent of instructor.

Real estate students are acquainted with the basic principles and practical application of real estate appraisals. Topics include valuation terms, market, analysis and classification of data, income and cost factors.

RLS 69 Real Estate Practicum / 3 cr. hrs. / 9 periods (lab)

☐ Prerequisite: RLS 68 or consent of instructor.

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.

RECREATION

REC 51 Arts and Crafts / 3 cr. hrs. / 3 periods

Focuses on the practical experience in creative craft projects. Included are ceramics, metal, weaving, woodworking and junk art.

REC 52 Recreation Systems and Management / 3 cr hrs. 3 periods

An introduction to national, state, county, city and private parks and the recreational systems offered in each.

REC 59 Park Administration / 3 cr. hrs. / 3 periods

The administrative procedures and techniques of various park systems.

REC 74 Public Relations and Communigraphics / 3 cr. hrs. 3 periods

The development of flyers, brochures and pamphlets; problems of dealing with the public and providing information on the agency's functions and activities.

REC 75 Water Recreation and Resources / 3 cr. hrs. 3 periods

Practices in managing outdoor water-oriented recreation on private and public lands.

REC 101 Introduction to Parks and Recreation / 3 cr. hrs. 3 periods

General surveys of the development and role of parks; their current roles and functions in modern society; a survey of recreation, including theories of leisure, changing recreation use and activities due to changes in time, income and mobility factors; and models of general recreation experiences.

REC 102 Group Leadership / 2 cr. hrs. / 2 periods

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.

REC 103 Recreation Administration and Finance / 3 cr. hrs. 3 periods

Covered are administration, financing and responsibility for parks and recreational areas, personnel selection, public relations, use of community resources and legal aspects of recreation administration.

REC 114 Program Planning and Organization / 3 cr. hrs. 3 periods

The essential elements and basic principles of organization, supervision, promotion and evaluation of various types of recreation programs and services.

REC 115 Outdoor Recreation-Education / 3 cr. hrs. 3 periods

An overview of the scope and magnitude of outdoor recreation, including history and development, conservation and organized camping. Camp craft skills are taught during field trips.

REC 116 Recreation for Special Groups / 3 cr. hrs. 3 periods

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.

REC 118 Survival / 2 cr. hrs. / 2 periods

The principles and techniques of survival. Students have an opportunity to enhance their ability to survive with the environment.

REC 119 Recreational Games / 2 cr. hrs. / 2 periods

Students gain an understanding of teaching children's games, both team and individual, in a recreational setting. This course is primarily for the recreation leader.

REC 120 Facilities for Physical Education and Recreation 2 cr. hrs. / 2 periods

(Same as Physical Education 120.)

REC 121 First Aid / 2 cr. hrs. / 2 periods

This course provides the recreation leader with the knowledge of drug abuse and first aid techniques leading to the standard Red Cross certificate.

REC 145 Sports Officiating / 2 cr. hrs. / 2 periods

(Same as Physical Education 145.)

REC 150 Camping and Hiking / 1 cr. hr. / 2 periods (1 lec., 1 lab)

A recreational activity offering students a lecture/lab experience in camping and hiking. Several field trips give students an exposure to camp cooking, camp selection and backpacking.

REC 152 Beginning Marksmanship / 1 cr. hr. / 2 periods (1 lec., 1 lab)

A lecture/lab course introducing students to firearms. Moral and legal aspects of firearms are emphasized along with firearms safety. Course includes range practice. (Same as Administration of Justice 152.)

REC 154 Mountaineering / 1 cr. hr. / 2 periods (1 lec., 1 lab)

Technical and free-climbing techniques are explained. Students learn techniques on campus and then are taken on several field trips to practice the techniques.

REC 156 Beginning Trapshooting / 1 cr. hr. / 2 periods (1 lec., 1 lab)
The history of shotguns, principles and techniques of instinct shooting, and the rules of trap and skeet shooting. Course is conducted on the range and includes extensive practice.

REC 252 Advanced Marksmanship / 1 cr. hr. / 2 periods (1 lec., 1 lab)
Course covers advanced techniques of competitive marksmanship and includes extensive range practice while emphasizing range safety.

REC 256 Advanced Trapshooting / 1 cr. hr. / 2 periods (1 lec., 1 lab)
Similar to REC 252.

REC 299 Cooperative Recreation Training / 3 cr. hrs. 15 periods (lab)
A supervised cooperative work program for students in a recreation occupation for a minimum of 15 hours per week. Course may be repeated.

RELIGION, COMPARATIVE

REL 120 Old Testament / 3 cr. hrs. / 3 periods
The major works of the Old Testament are studied with emphasis given to their religious, moral, historical and literary significance.

REL 121 New Testament / 3 cr. hrs. / 3 periods
The major works of the New Testament are studied with emphasis given to their religious, moral, historical and literary significance.

REL 125 Islam / 3 cr. hrs. / 3 periods
The history and literature of Islam are explored from the Prophet Mohammed to the present. Special emphasis is on the poetry and practices of the Sufis.

REL 130 Comparative Religions: Oriental / 3 cr. hrs. 3 periods
Hinduism, Buddhism, Zoroastrianism, Confucianism, Taoism, Shintoism and Zen Buddhism are explored through readings, discussions and movies. Christianity is compared through student knowledge and opinion in discussions.

REL 140 Philosophy of Religion / 3 cr. hrs. / 3 periods
An introduction to the philosophical study of religion. (Same as Philosophy 140.)

RESPIRATORY THERAPY

RTH 71 Introduction to Respiratory Therapy / 5 cr. hrs. 9 periods (3 lec., 6 lab)
☐ Prerequisite: Admission to the RTH core curriculum, concurrent enrollment in RTH 82.
A brief history of respiratory therapy, handling of medical gases, safety practices, basic nursing arts for the therapist, and general equipment used in the administration of medical gases are covered in this introductory course.

RTH 73 Clinical Medicine / 3 cr. hrs. / 3 periods
☐ Prerequisite: RTH 71, concurrent enrollment in RTH 86, 83 and 91.
Course emphasizes the study of microorganisms and control of pathogens related to cardiopulmonary disorders, and the basics of pharmacology and medications used in respiratory therapy.

RTH 82 Respiratory Physiology / 5 cr. hrs. / 5 periods
☐ Prerequisite: Concurrent enrollment in RTH 71.
An in-depth study of the cardiopulmonary system, associated structures and the principles involved in ventilation and gas transport.

RTH 83 Respiratory Care I / 5 cr. hrs. / 7 periods (4 lec., 3 lab)
☐ Prerequisite: RTH 71, concurrent enrollment in RTH 86, 73, and 91.
Students are introduced to the study of humidity/aerosol therapy and all of the clinical indications for such therapy. Also covered are methods and principles of cardiopulmonary resuscitation and monitoring of the critically ill patient.

RTH 84 Respiratory Care II / 5 cr. hrs. / 7 periods (4 lec., 3 lab)
☐ Prerequisite: RTH 83, concurrent enrollment in RTH 89 and 92.
Course covers the principles of all positive pressure breathing devices and clinical applications. Also studied are chest physiotherapy and rehabilitative respiratory therapy. Volume ventilators are explored with emphasis on proper selection of a ventilator and the assessment of a patient in need of assisted or controlled ventilation.

RTH 86 Diseases I / 4 cr. hrs. / 4 periods
☐ Prerequisite: RTH 82, concurrent enrollment in RTH 73, 83 and 91.
Course covers cardiopulmonary diagnostic procedures and studies, and begins the study of common pulmonary disorders.

RTH 89 Diseases II / 4 cr. hrs. / 4 periods
☐ Prerequisite: RTH 86, concurrent enrollment in RTH 84 and 92.
A continuation of the study of pathophysiology of cardiopulmonary disorders and treatment.

RTH 91 Clinical Procedures I / 5 cr. hrs. / 15 periods (lab)
☐ Prerequisite: Concurrent enrollment in RTH 83.
This course is the laboratory portion and clinical practicum of the program. Students begin application of clinical principles in a hospital setting after suitable laboratory experience.

RTH 92 Clinical Procedures II / 5 cr. hrs. 15 periods (lab)
☐ Prerequisite: Concurrent enrollment in RTH 84.
An extension of RTH 91 with more in-depth clinical work and responsibility.

SHEET METAL

SML 110 Sheet Metal I / 4 cr. hrs. / 6 periods (3 lec., 3 lab)
Students learn to lay out and fabricate metal items for air conditioning fittings under proper instruction given on the use of hand and machine tools.

SML 120 Sheet Metal II / 4 cr. hrs. / 6 periods (3 lec., 3 lab)
☐ Prerequisite: SML 110.
A continuation of layout and fabrication of fittings for air conditioning. Students learn to build and create these objects.

SML 130 Sheet Metal Pattern Layout I / 3 cr. hrs. / 3 periods
☐ Prerequisite: Consent of instructor.
Students learn all phases of laying out sheet metal work including pattern making, cutting, shop methods and procedures of development. This course is designed for all metal trades and follows a sequence of parallel lines, radial lines and triangulation.

SML 135 Sheet Metal Pattern Layout II / 3 cr. hrs. 3 periods

☐ Prerequisite: SML 130.
A continuation of SML 130.

SML 210 Sheet Metal Pattern Layout III / 3 cr. hrs. 3 periods

☐ Prerequisite: SML 135.
A continuation of SML 135.

SML 220 Architectural Sheet Metal / 3 cr. hrs. / 4 periods (2 lec., 2 lab)

☐ Prerequisite: SML 120, 210.
Students are supervised in fabricating gutterwork, valleys, range hoods, flashing and ornamental work. They also are exposed to different designing problems in sheet metal.

SML 299 Cooperative Sheet Metal Training / 3 cr hrs. 15 periods (lab)

A supervised cooperative work program for students in a sheet metal occupation for a minimum of 15 hours per week. Course may be repeated.

SOCIAL SERVICES

SSE 115 Drugs in American Society / 3 cr. hrs. / 3 periods

A general introduction to the current drug situation in the United States. Content includes philosophical exploration of the drug situation, interpretation within the social context, the physical and psychological effects of drugs, and a review of current drug programs and research. Emphasis is on dealing with stereotypes so that students can profit from additional information on the drug situation.

SSE 127 Political and Legal Aspects of Drug Use / 3 cr. hrs. 3 periods

An overview of the political and legal aspects of drug use and abuse including historical perspectives on the drug situation, the influence of political pressures on the interpretation of the problem, the economics of drug abuse, civil liberties, court decisions and current thinking in the field.

SSE 133 Introduction to Social Welfare / 3 cr. hrs. 3 periods

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.

SSE 134 Casework Methods / 3 cr. hrs. / 3 periods

☐ Prerequisite: SSE 133.
The theory and practice of casework within the context of the Southwest. Also included are interviewing, case history and review, and how to develop a helping relationship. Case examples from various social service settings are examined.

SSE 216 Community Organization and Development 3 cr. hrs. / 3 periods

Course reviews the theory of organizing groups to effect change, and the role of the professional organizer; provides an examination of institutions showing why they change or fail to change; and provides different strategies for effecting change. Students become involved, under guidance, in formal and informal groups within the Tucson community for observation purposes.

SSE 217 Evaluation and Support of the Drug User / 3 cr. hrs. 3 periods

Course provides students with information and skills necessary to thoroughly and accurately evaluate an individual client, including understanding the specific drug-related behaviors as well as other aspects of the social milieu surrounding the addict, such as family, legal and social situation. When combined with SSE 218, students can make an accurate matching of treatment modality to the needs of the client. This course should be taken jointly with SSE 218 or subsequent to SSE 218.

SSE 218 Treatment of the Drug Abuser / 3 cr. hrs. 3 periods

A comprehensive course leading to student skills in the treatment of the drug abuser. Content includes the various treatment modalities in use, including therapeutic communities, day-care programs, methodone maintenance and detoxification and psychotherapy models.

SSE 235 Group Work / 3 cr. hrs. / 3 periods

An understanding of group dynamics including personal growth, leadership and organization development in different economic and cultural settings; the role of the leader in groups and techniques of working with groups. Case examples are examined and observed.

SSE 299 Cooperative Social Services Training / 3 cr. hrs. 15 periods (lab)

A supervised cooperative work program for students in a social service occupation for a minimum of 15 hours per week. Course may be repeated.

SOCIOLOGY

SOC 99 Introduction to Cities and Community Planning 3 cr. hrs. / 3 periods

An introductory course helping 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.

SOC 100 Introduction to Sociology / 3 cr. hrs. / 3 periods

What this society is, how we live in it and what we can do with it.

SOC 101 Current United States Social Problems / 3 cr. hrs. 3 periods

☐ Prerequisite: SOC 100 for University of Arizona transfer.
How individuals get constructively involved.

SOC 103 Explorations in Prejudice / 3 cr. hrs. / 3 periods

☐ Prerequisite: SOC 100 for University of Arizona transfer.
Why we hate each other. What we, as participants in this course, do about our own prejudice and prejudice in the community.

SOC 105 World Population / 3 cr. hrs. / 3 periods

Basic concepts of population studies; analysis of social trends, problems and solutions in relation to environmental factors with reference to both advanced and developing nations.

SOC 201 Ghetto Society / 3 cr. hrs. / 3 periods

☐ Prerequisite: SOC 100 for University of Arizona transfer.
A study of minority socialization and the life of urban disadvantaged groups.

SOC 202 Introduction to Civil Rights Practices / 3 cr. hrs. 3 periods

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 149.)

SOC 203 Sociology of Utopia / 3 cr. hrs. / 3 periods

Included are the study of "Alternative Life Styles" and the history of the communal movement in America with special emphasis on the literature of Utopia and modern communal experimentation.

SOC 204 Women in Society / 3 cr. hrs. / 3 periods

A study of the legal, social, economic, political, religious and psychological statuses of women in society.

SOC 289 Individual Studies in Sociology / 3–6 cr. hrs. 3–6 periods

☐ Prerequisite: Consent of instructor.
An exploration of special interest areas. Content to be determined by student and facilitator-instructor.

SOC 298 Topics in Community Involvement / 1–3 cr hrs. 1–3 periods

☐ Prerequisite: Consent of instructor.
Direct, constructive student involvement in community problems. Students work individually or in small teams through guidance and periodic consultations with faculty advisors. Special activities also will be determined by the advisors. Students employed or working as volunteers with agencies or groups may get credit for those activities under this course.

SPANISH

SPA 30 Commercial and Technical Spanish / 2 cr. hrs. 2 periods

☐ Prerequisite: Spanish proficiency in speaking and writing.
The Spanish language as a business skill. The course is specially planned for the bilingual secretary or office employee. Emphasis is on business terms and the Spanish language as used in the southwestern United States and in Mexico. Includes practice in taking dictation and transcribing in both languages.

SPA 30 Español Comercial / 2 cr. hrs. / 2 periods

Se enseña el español especializado del negocio para obtener aptitudes necesarias de secretaria bilingüe o trabajadora (trabajador) de oficina. El énfasis es sobre términos de negocio y el idioma español como se emplea en el suroeste de los Estados Unidos y México. Se practicará el dictado y la transcripción en ambos idiomas.

SPA 50 Conversational Spanish I / 4 cr. hrs. / 4 periods

Practice in speaking Spanish, emphasizing current usage and ease in expressing ideas.

SPA 55 Conversational Spanish II / 4 cr. hrs. / 4 periods

☐ Prerequisite: SPA 110 or 50 or knowledge of Spanish.
A continuation of SPA 50 with study on a more advanced level.

SPA 101 Intensive Spanish for Native Speakers I / 4 cr. hrs. 4 periods

Grammar instruction is designed to meet the particular needs of native speakers of Spanish; reading and writing in increasing difficulty to prepare for advanced composition and introductory courses in Spanish literature.

SPA 101 Español Intensivo Para Estudiantes de Habla Hispana I / 4 cr. hrs. / 4 periods

Es un curso planeado especialmente para responder a las necesidades del estudiante de habla hispana. Se empieza con el sistema básico, enseñar a leer y a escribir. Por efecto de conocimientos ya adquiridos previamente los estudiantes asimilan las enseñanzas con extraordinaria rapidez. Para leer se usan particularmente lecturas con fondo cultural mexicano.

SPA 102 Intensive Spanish for Native Speakers II / 4 cr. hrs. 4 periods

☐ Prerequisite: SPA 101.
This is a continuation of Intensive Spanish for Native Speakers I.

SPA 102 Español Intensivo Para Estudiantes de Habla Hispana II / 4 cr. hrs. / 4 periods

☐ Prerequisite: SPA 101.
En Español 102 se continúa el curso 101 del primer semestre con mayor participación en la literatura y en la gramática.

SPA 110 Elementary Spanish I / 4 cr. hrs. / 5 periods (4 lec., 1 lab)

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.

SPA 111 Elementary Spanish II / 4 cr. hrs. / 5 periods (4 lec., 1 lab)

☐ Prerequisite: SPA 101 or equivalent.
A continuation of Elementary Spanish I.

SPA 205–206 Imaginative Writing I, II / 3–3 cr. hrs. 3 periods

The course is designed to develop creative writing abilities.

SPA 205–206 Literatura Creativa I, II / 3–3 cr. hrs. 3 periods

Literatura creativa es un curso que ayudará técnicamente a los estudiantes que tengan vocación de escritores, propiciando el desarrollo de sus facultades creativas. Se tratará de publicar los trabajos más sobresalientes.

SPA 210 Intermediate Spanish I / 4 cr. hrs. / 5 periods (4 lec., 1 lab)

☐ Prerequisite: SPA 111 or equivalent.
An intensive review of grammar fundamentals and a continued practice in speaking. Students also read selected authors and write short compositions.

SPA 211 Intermediate Spanish II / 4 cr. hrs. / 5 periods (4 lec., 1 lab)

☐ Prerequisite: SPA 210 or equivalent.
This is a continuation of Intermediate Spanish I with emphasis on practical usage.

SPA 220 Novel of the Mexican Revolution / 3 cr. hrs. 3 periods

☐ 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.

SPA 220 Novela de la Revolución Mexicana / 3 cr. hrs. 3 periods

En la Novela de la Revolución Mexicana se lee a los autores más importantes de la Revolución. Paralelamente se muestra el panorama histórico de la Revolución. Se estudiarán los motivos y hechos más sobresalientes de la época revolucionaria.

SPA 225 Intermediate Spanish Composition and Conversation I / 3 cr. hrs. / 3 periods

☐ Prerequisite: SPA 211 or equivalent.
This course gives students a firmer command of spoken and written Spanish. Includes preparation of themes and conversations from suggested topics and discussions of current issues and events.

SPA 225 Composición y Conversación en Español I 3 cr. hrs. / 3 periods

El curso está diseñado para lograr mayor facilidad en el español hablado y escrito. Se prepararán discusiones sobre tópicos actuales de toda naturaleza para practicar el hablar y para ensanchar el vocabulario. Para la parte escrita se estudiarán trozos de cuento, para análisis de estilo y después para hacer imitaciones en ensayos.

SPA 226 Intermediate Spanish Composition and Conversation II / 3 cr. hrs. / 3 periods

A continuation of Intermediate Spanish Composition and Conversation I.

SPA 240 Independent Study in Spanish Language 1–4 cr. hrs. / 1–4 periods

☐ Prerequisite: Consent of instructor.
Students pursue an independent course of study under the supervision of an instructor.

SPA 249 Cultura Chicana / 3 cr. hrs. / 3 periods

Este curso incluye los siguientes temas Chicanos: proceso histórico; el fenómeno social, creación literaria.

SPEECH

SPE 102 Introduction to Oral Communication / 3 cr. hrs. 3 periods

An introduction to the basic concepts and skills of oral communication in interpersonal and public address situations; and a study of communication barriers, research techniques, and norms of speech delivery.

SPE 102 Comunicacion Para Hispano Parlantes / 3 cr. hrs. 3 periods

Una introducción de los conceptos básicos de comunicación oral y el desarrollo de los varios modos de comunicación interpersonal y de discurso público con el estudio de problemas de comunicación, la técnica de investigar temas de discurso público, y las normas de comunicación oral.

SPE 105 Voice and Diction / 2 cr. hrs. / 2 periods

Study and training in the aspects of basic voice production including speech and personality, the physiological system, and general speech standards.

SPE 110 Public Speaking / 3 cr. hrs. / 3 periods

Study and training in public speaking with emphasis on audience adaptation. Reading and speech assignments focus on research, organization and logic, analysis and delivery as techniques of audience adaptation.

SPE 115 Voice and Articulation for the Stage / 2 cr. hrs. 2 periods

Study and training in the aspects of basic voice production as required by the stage; norms and techniques of stage diction, characterizations, dialects and sight-reading.

SPE 120 Business and Professional Communication 3 cr. hrs. / 3 periods

Study and training in communication situations and problems within the organizational complex. Basic assignments include oral reports, interviewing, problem-solving and conference groups, listening and persuasion.

SPE 125 Forensics / 1 cr. hr. / 1 period

Individualized instruction and practice in speech competition skills including debate, oral interpretation, and persuasive, extemporaneous and impromptu speaking. Each student must participate in at least one intercollegiate speech tournament. May be repeated.

SPE 130 Small Group Discussion / 3 cr. hrs. / 3 periods

Study and training in group participation and leadership, the nature, use and function of group discussion, problem-solving groups, norms of group interaction and group relations.

SPE 136 Oral Interpretation of Literature / 3 cr. hrs. 3 periods

Study and training in the techniques of analysis and presentation of the oral dimensions of literature; use of voice and body in the presentation of literature, the role of interpreter, characterization, literary conventions and oral interpretation modes.

SPE 149 Independent Study in Speech / 1–4 cr. hrs. 1–4 periods

Students may research some aspect of communication not available through regular course offerings, such as argumentation, non-verbal communication, communication theory, mass media, rhetorical criticism, etc.

SWAHILI

SWA 50–51 Elementary Swahili I, II / 4–4 cr. hrs. / 4 periods

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.

WELDING

WLD 50 Elementary Welding / 3 cr. hrs. / 6 periods (1 lec., 5 lab)
An elementary course in welding, designed to acquaint the student with theory and application of arc welding and oxyacetylene welding and cutting. Practical experience is provided in the making of typical butt, lap, corner, and fillet joints.

WLD 110 Combination Welding / 3 cr. hrs. / 5 periods (2 lec., 3 lab)
Basic techniques in arc welding and oxyacetylene welding.

WLD 110 Soldadura / 3 cr. hrs. / 5 periods (2 lec., 3 lab)
Tecnica basica de soldadura electrica y octogena e incluyendo soldadura de bronce.

WLD 115 Blueprint Reading / 3 cr. hrs. / 3 periods
The student, after successfully completing the course, can interpret blueprints as applied to the welding trade and should be familiar with welding symbols and their significance.

WLD 150 Oxyacetylene Welding / 4 cr. hrs. / 6 periods (2 lec., 4 lab)
Students learn set-up and operation of oxyacetylene welding equipment, how to weld flat, horizontal, vertical and overhead on standard alloys of steel; to braze and solder non-ferrous and ferrous metals and their alloys.

WLD 160 Arc Welding / 4 cr. hrs. / 6 periods (2 lec., 4 lab)
A study of joining metals by electric arc with the use of the electrode; techniques of basic steps essential to all position welding with all types of electrodes; equipment, current electrodes and all specified joint preparations used.

WLD 250 Pipe Welding / 4 cr. hrs. / 6 periods (2 lec., 4 lab)
☐ Prerequisite: WLD 150 and 160, SML 130.
Stresses the contraction and expansion of pipe, cutting, beveling, tackling, and welding miter joints, saddle joints, Y-joints, bull plugs, flanges, and cast iron fittings; methods of welding gas lines under pressure; danger and safety of welding in gas areas; welding alloys and non-ferrous tubing.

WLD 260 Inert Gas Welding / 4 cr. hrs. / 6 periods (2 lec., 4 lab)
☐ Prerequisite: WLD 250.
Students learn techniques and procedures of Tungsten Inert Gas welding (Heli-Arc). Techniques involve proper control settings, proper manipulation of TIG torch, and welding in all positions on non-ferrous and ferrous metals. Also a study and practice of metal inert gas welding (MIG welding).

WLD 299 Cooperative Welding Training / 3 cr. hrs. 15 periods (lab)
A supervised cooperative work program for students in a welding occupation for a minimum of 15 hours per week. Course may be repeated.

WRITING

WRT 5 Poetry Writing / 3 cr. hrs. / 3 periods
Offered concurrently with WRT 205 but not designed for transfer credit.

WRT 6 Short Story Writing / 3 cr. hrs. / 3 periods
Offered concurrently with WRT 206 but not designed for transfer credit.

WRT 62 Literary Magazine Workshop / 3 cr. hrs. / 3 periods
A laboratory course in which students edit, design, layout and produce at least one literary publication of student work in each semester. It is recommended that this course be taken for credit for two consecutive semesters.

WRT 70 Development Writing / 3 cr. hrs. / 3 periods
Offered concurrently with WRT 101M, this course consists of modules in fundamental skills including grammar and usage, organization and development as well as a variety of other modules to meet the personal or occupational needs of students. Arrangements may be made to earn WRT 70 credits through the Alternative Learning Center.

WRT 80 Manual Communication / 3 cr. hrs. / 3 periods
Intensive study of sign language used to communicate with the deaf, including the alphabet and commonly used words. The student learns to adequately use sign language to communicate with the deaf.

WRT 101 Writing I / 3 cr. hrs. / 3 periods
An introduction to the excitement of good writing with emphasis on the technique and practice of description, explanation and argument. Designed for transfer credit.

WRT 102 Writing II / 3 cr. hrs. / 3 periods
☐ Prerequisite: WRT 101.
A continued practice in writing with emphasis on longer and more analytical compositions, including a research paper or annotated papers. Readings may include fiction, poetry, drama or non-fiction. Designed for transfer credit.

WRT 101M–102M Writing IM, IIM / 3–3 cr. hrs. / 3 periods
These courses permit students to complete the two-semester freshman writing requirement by taking six one-hour modules. The Introduction module must be taken at the start of WRT 101M. The following modules must be included for transfer: Essay; Writing about Literature: and Research. Students may select two additional modules from the following list to complete the requirement. The Essay module must be taken before Writing about Literature or Research. Other modules may be taken in any sequence. Any three modules may be taken in a semester for WRT 70 credit. The modules are: (1) Introduction; (2) Sentences; (3) Paragraphs; (4) Essay; (5) Writing about Literature; (6) Research; (7) Reading Literature; (8) Dream Journal; (9) Individual Studies; (10) Journal; (11) Dialects; (12) Creative Writing.

WRT 150 Practical Communications / 3 cr. hrs. / 3 periods
Practice in effective everyday communication skills. Emphasis is on writing and other communication skills necessary in specific career fields. May transfer as an elective.

WRT 154 Technical Communications / 3 cr. hrs. / 3 periods
☐ Prerequisite: WRT 101 or 150 plus one year's experience or training in major vocational area.
Students develop writing skills used in formal and informal reports, form completion, letters, abstracts, reviews and other communication skills as prescribed by vocational areas.

WRT 205 Poetry Writing / 3 cr. hrs. / 3 periods
☐ Prerequisite: WRT 101 and 102.
An introduction to the techniques used in contemporary poetry; a study of selected poems as examples; practice in applying techniques by writing and discussing original poetry. For transfer, students must have completed WRT 102. This course may be taken as WRT 5 for non-transfer credit.

WRT 206 Short Story Writing / 3 cr. hrs. / 3 periods

☐ Prerequisite: WRT 101 and 102.
Introduction to the techniques used in contemporary short fiction, and study of selected short fiction with practice in separate elements of technique through short exercises and writing of original manuscripts. For transfer, students must have completed WRT 102. This course may be taken as WRT 6 for non-transfer credit.

WRT 215 Advanced Poetry Writing / 3 cr. hrs. / 3 periods

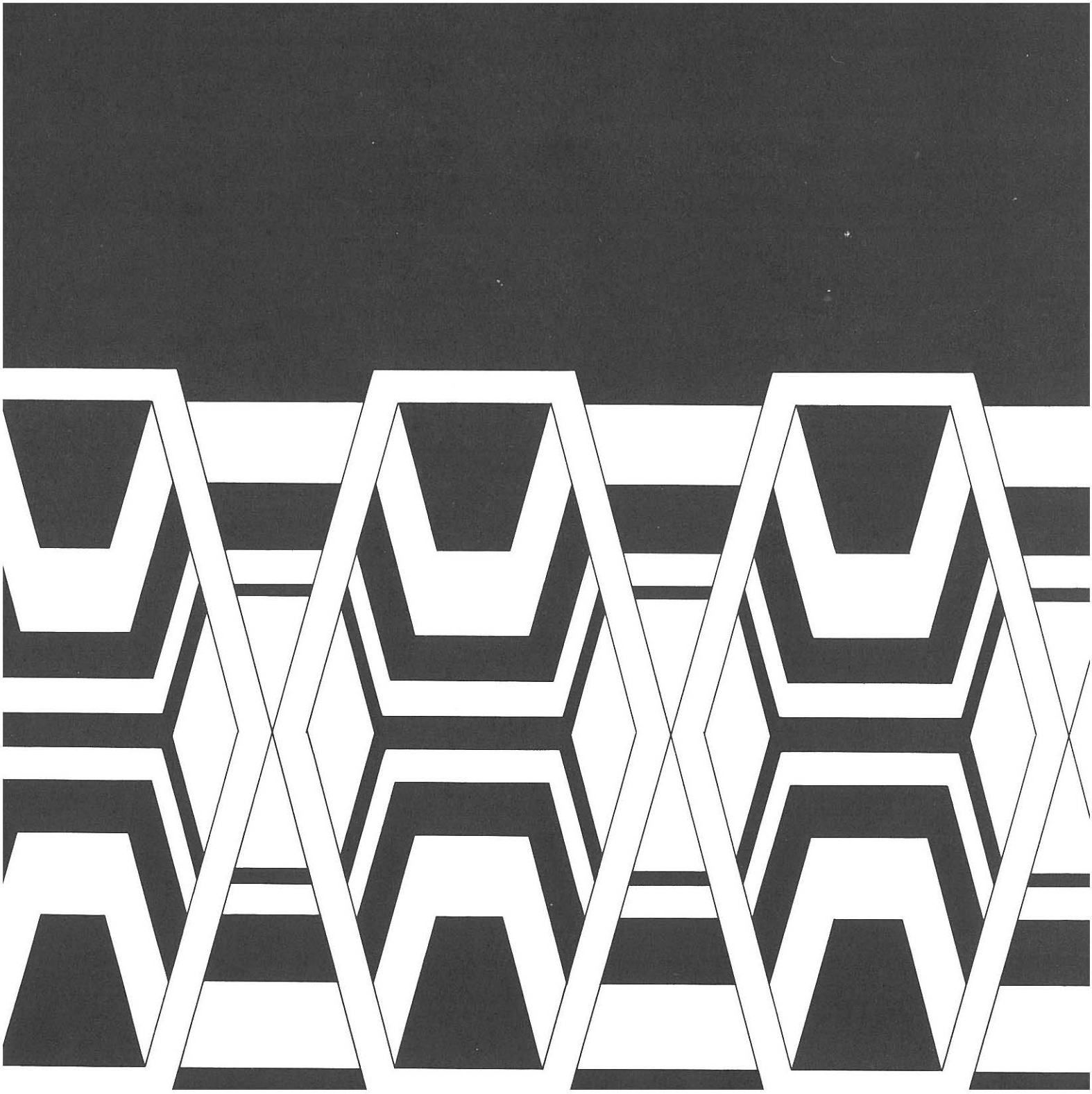
☐ Prerequisite: WRT 5 or 205 and consent of instructor.
A continuation of poetry writing, with increased emphasis on craft. Candid peer/instructor criticism of both published models and student poems. Offered both semesters. Transfers as an elective.

WRT 254 Technical Communications / 3 cr. hrs. / 3 periods

☐ Prerequisite: WRT 101, 102 and approval of major advisor and instructor.
Basic techniques of writing long and short reports, abstracts, memos, proposals and other forms required in scientific and technical occupations. The course is structured to allow students to work on writings and required in courses and in future occupations.

WRT 299 Cooperative Writing Training / 3 cr. hrs. 15 periods (lab)

A supervised cooperative work program for students in a writing occupation for a minimum of 15 hours per week. Course may be repeated.



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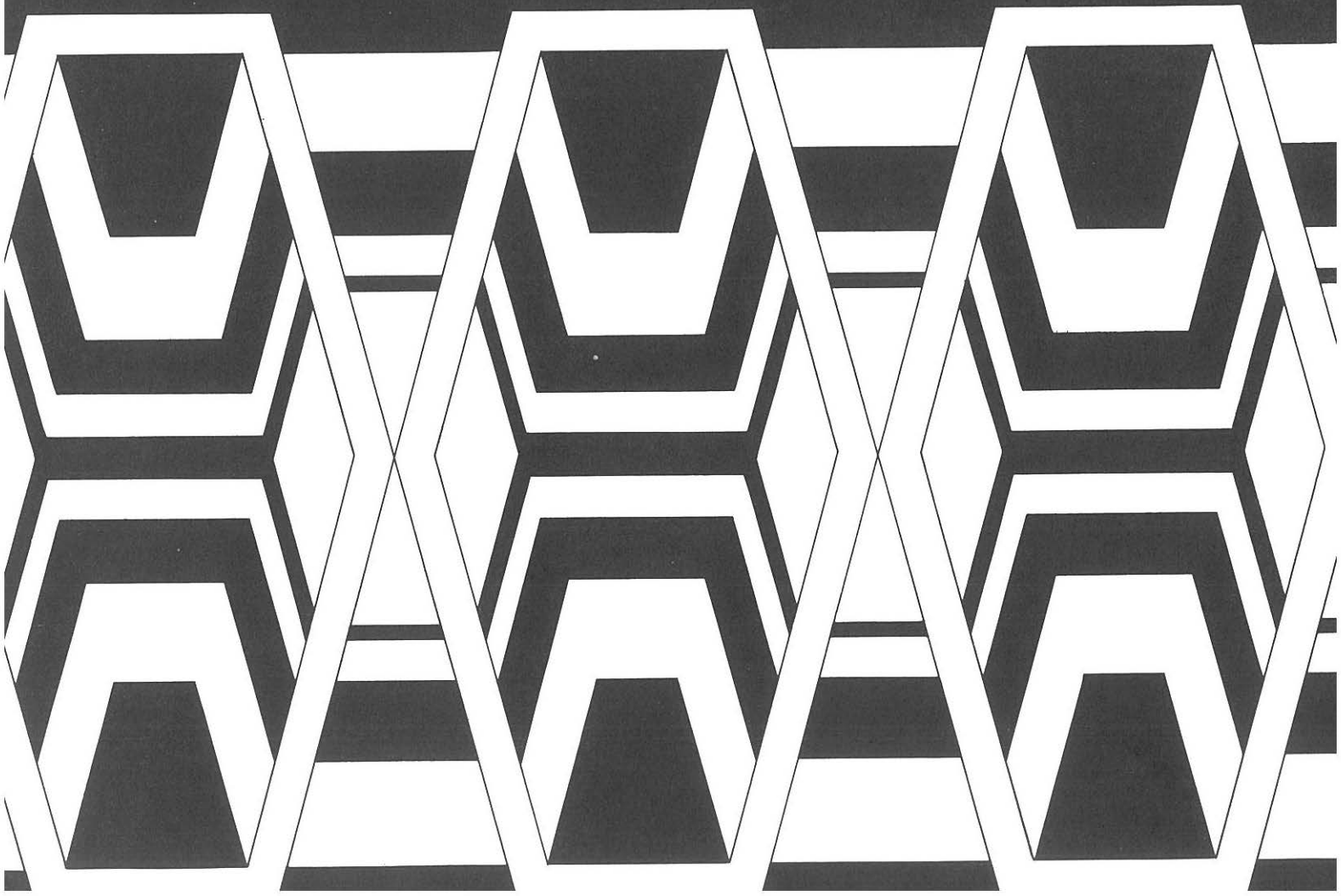

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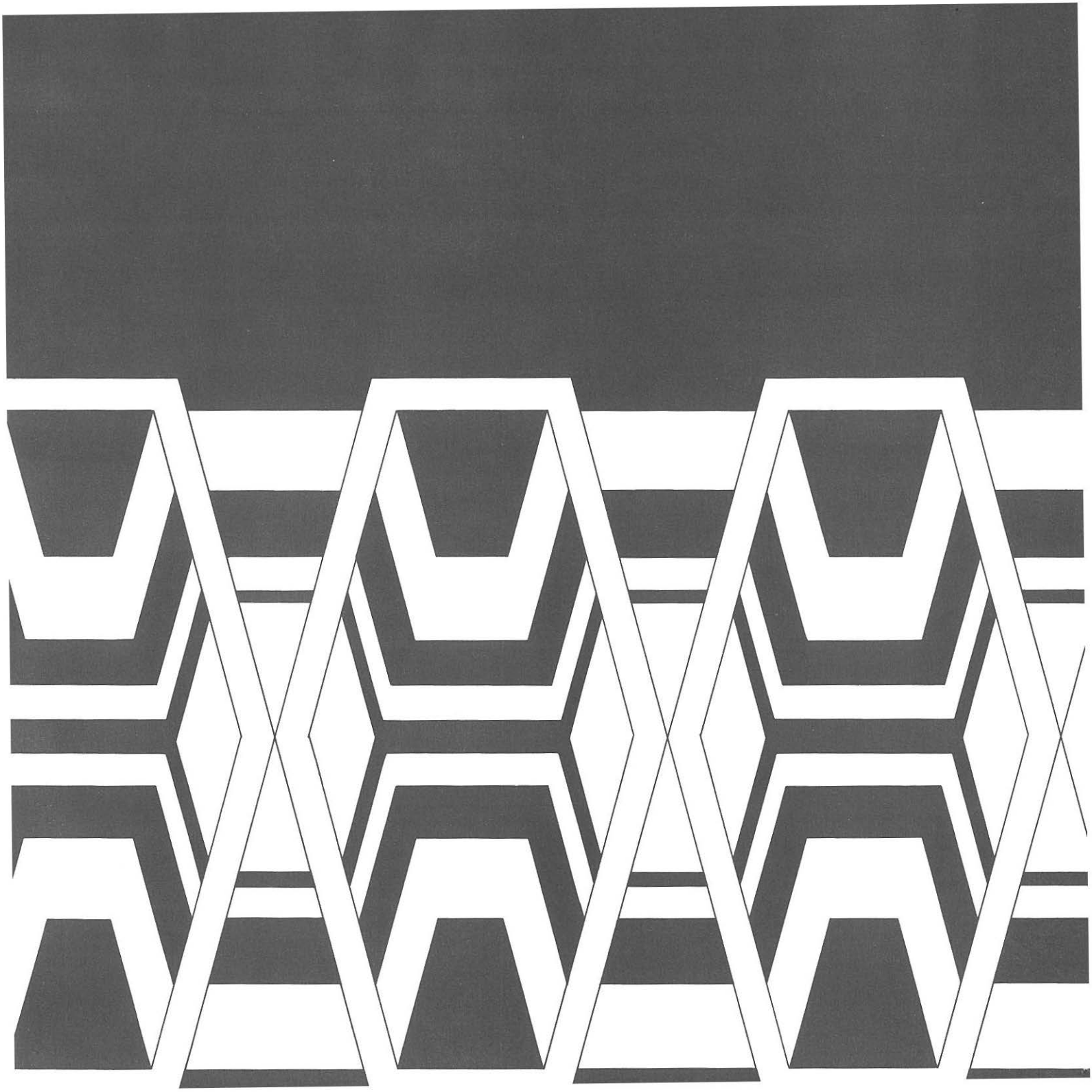

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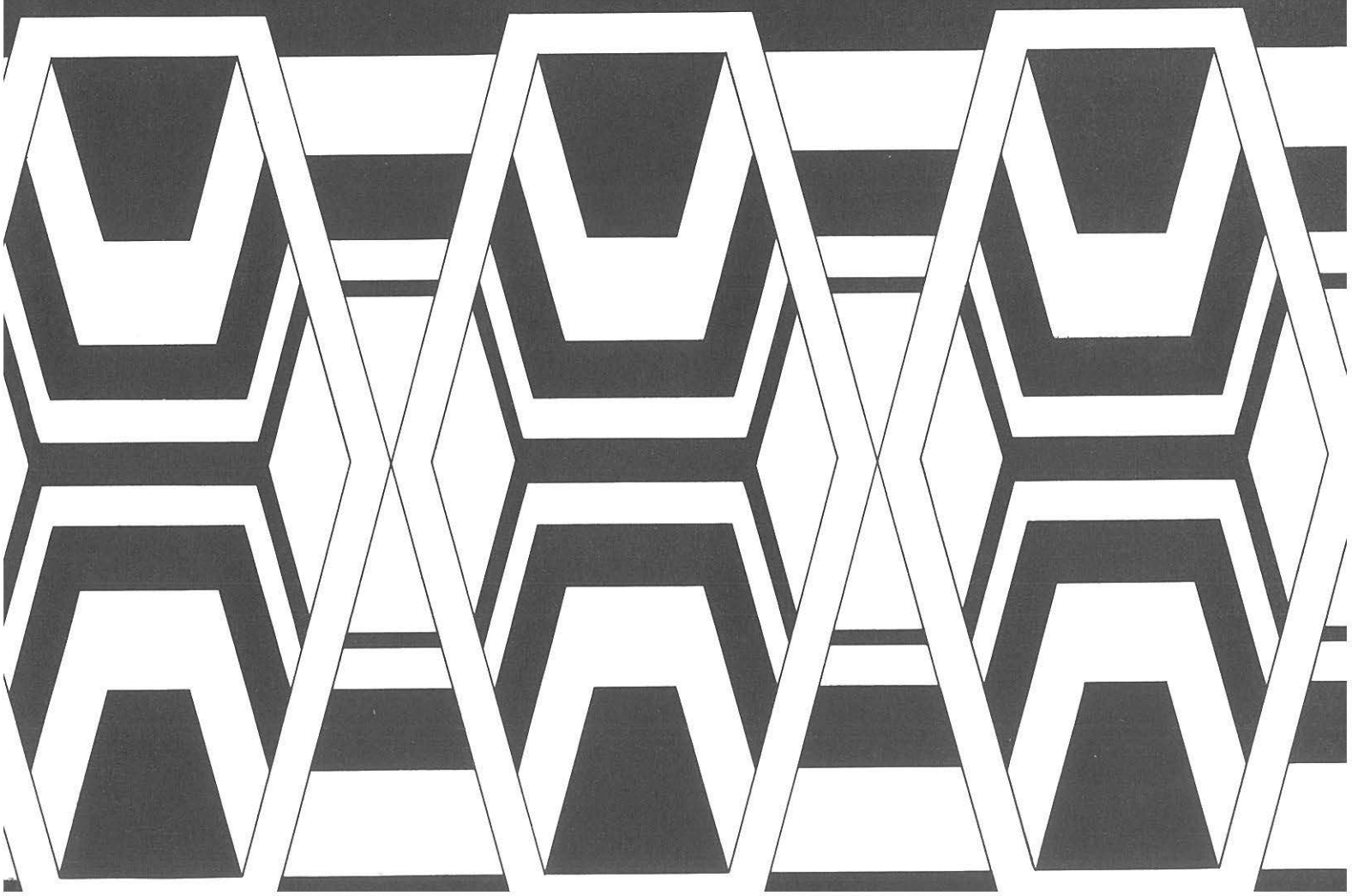

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