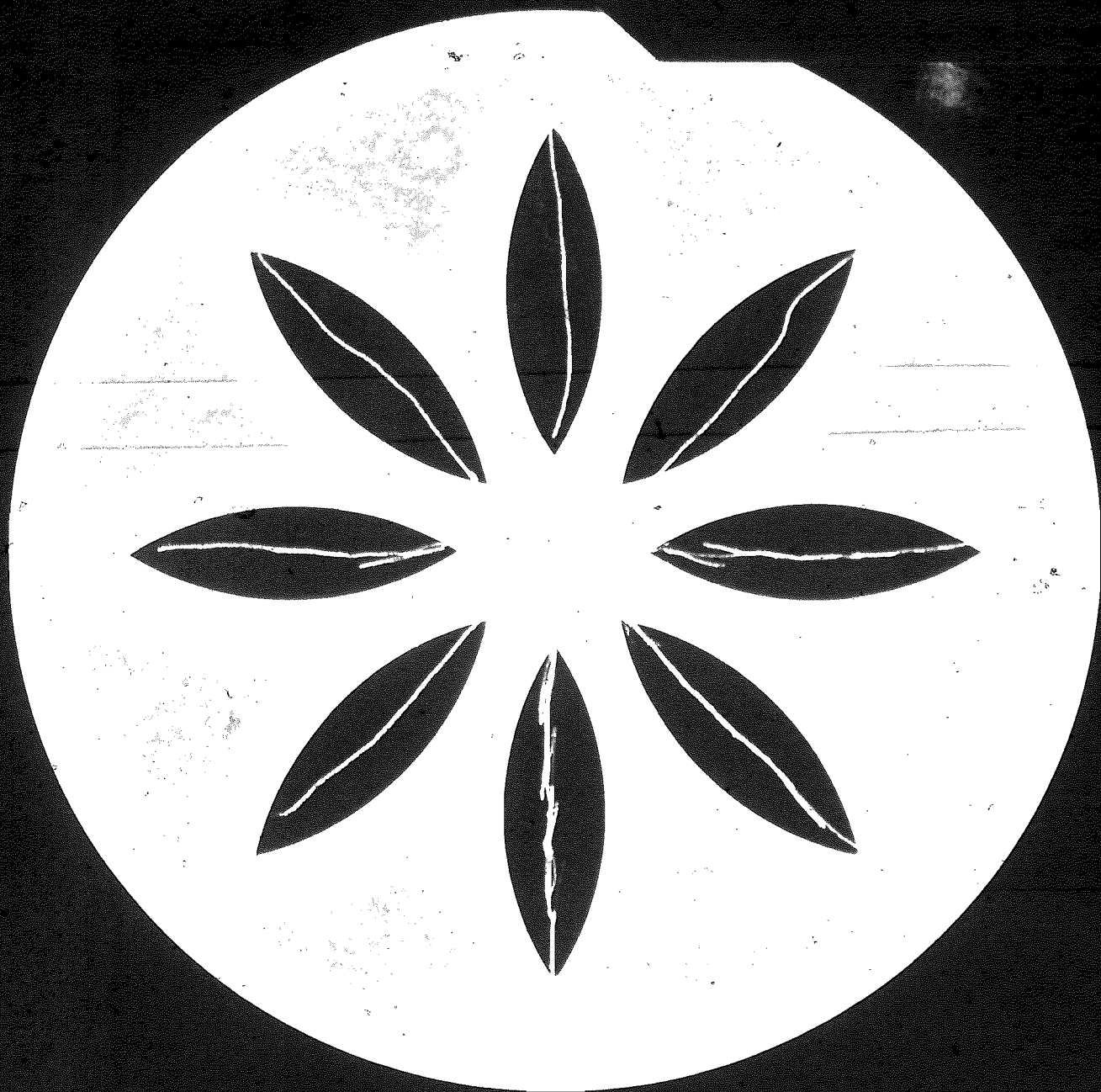


# COCHISE COLLEGE CATALOG 79/80

REGISTRAR'S OFFICE  
(DO NOT REMOVE)



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Cochise College is committed to the principles of equal opportunity in education and employment. No person, on the basis of race, color, creed, religion, sex, or national origin, will be denied the benefits of, excluded from or subjected to discrimination under any educational program or activity.

In compliance with the Family Education Rights and Privacy Act of 1974, Cochise College guarantees that the parents of dependent children will have a right to information about their offspring without having to gain the student's consent.

The Governing Board of Cochise College reserves the right to change or withdraw, without notice, courses, curricula, policies, tuition, fees, or any other matters contained in this catalog.

# General Information

## **Educational Philosophy**

Cochise College, a comprehensive community college, is dedicated to the service of its community. The College makes education beyond the high school level available to students interested in, and capable of, benefiting from programs of higher education.

The quality and effectiveness of instruction offered by the College is important to those interested in higher education; students, teachers, administrators, alumni and the general public. The administration of the College facilitates instruction and leads its staff and students to personal and group fulfillment in their educational endeavors. Free communication, a free flow of ideas and feelings among the administration, the faculty, the students, the governing board and the community is essential for the realization of personal and institutional goals.

## **Functions and Goals**

To provide a program of general education which encompasses the common knowledge, skills and attitudes needed by each individual to be effective as a person, a member of a family, a worker and a citizen in our democratic society.

To assist each student to orient himself to adult and college life by providing a program of counseling which enables him to discover aptitudes and interests and helps in the choice of a vocation or further formal education.

To provide educational opportunity in several occupations for students who wish to prepare for immediate employment upon completion of the appropriate program. The programs are designed to enable students to achieve occupational competence and to provide them with opportunities for achieving skills for living in a contemporary society.

To offer studies during the first two years of college which may be used in transfer for the purpose of securing a bachelor's degree (the candidate for a bachelor's degree can transfer to the institution of his choice with full junior standing, after having successfully completed appropriate lower division studies during the first two full years of college.)

To provide for the educational needs of mature and receptive adults whose interests and requirements lie in both cultural activities and occupational fields.

To make available other community services for the growth of the citizens of the county through lectures, forums, plays, concerts, art exhibits, and other cultural activities.

To provide a program of guided studies which will enable students in need of developmental work to pursue studies appropriate to individual needs and to promote honors study programs for students with superior academic capabilities.

To co-operate with other schools and colleges, with civic groups, with educational foundations and with private individuals and corporations in any proper endeavor likely to result in an educational advantage to the students of the College and the community.

### **Accreditation**

Cochise College is accredited by the Arizona State Board of Directors for Community Colleges, and the North Central Association of Colleges and Secondary Schools. The College also holds memberships in the Arizona Association of Junior Colleges, the Council of North Central Junior Colleges and the North Central Association of Colleges and Secondary Schools.

### **Goverance**

The College district is controlled by the 17-member Arizona State Board of Directors for Community Colleges and by a five-member Governing Board elected from precincts in Cochise County. It is financed by legislative appropriation and a county-wide tax levy.

### **Community Services**

Cochise College endeavors to extend its educational services to meet the needs of the entire county. Community Services is that phase of the educational program which provides educational, cultural and recreational services beyond formalized classroom instruction. Among these services are a College speaker's bureau, offering faculty lectures without charge; a program of public events and cultural activities including lectures and forums, art exhibits, film series, a program of non-credit courses and community use of the Learning Resources Center.

Other community services include institutes, workshops and lectures to meet special needs of business, industry and the professions; community recreation, campus tours, public information and community participation in the College program through citizens' committees.

### **The Cochise College Foundation**

The Cochise College Foundation, incorporated March 20, 1967, supports the educational objectives of Cochise College. It has a countywide membership of 62 general members and a group of 15 men and women serving as officers and directors.

The Foundation, having received Internal Revenue Service qualification, is a recognized avenue for receipt of money, property or other things of value bequeathed or given for the benefit of the College.

The Foundation has devoted some of such money received on a matching basis for construction of a rodeo complex on campus, as seed money for United Student Aid Funds for loans to college students, to Aviation Division for purchase of damaged airplanes from private owners to be rebuilt as part of the laboratory work by Airframe and Powerplant students, on a matching basis for construction of an Archaeology Resource Center, and for many \$300 scholarships given each fall semester.

### **Advisory Committees**

Occupational curricula leading directly to employment is developed in accordance with the needs of business, industry and the professions. Cochise College has invited a number of leaders in enterprises related to these curricula to advise the College staff on the nature and extent of employment needs, course content, facilities and equipment needed. The appropriateness of the curriculum content and the quality of the students receiving the degree or certificate.

As additional needs are identified, new advisory committees will be formed to assess the appropriateness of programs to meet these needs.

# The Douglas Campus

The Douglas campus of Cochise College is situated on the southern portion of a 500-acre site in southeastern Arizona on Highway 80, sixteen miles east of Bisbee and eight miles west of Douglas. The college was the second community college organized under the act of the 24th Arizona State Legislature providing for district or county two-year colleges. The establishment of the college district in 1961 and the funding for construction of the facility in 1962 represented a dedicated effort on the part of the citizens of Cochise County. The campus first opened its doors to resident and commuter students in September, 1964.

The 17-building campus complex, in addition to housing classrooms and laboratories for both occupational and arts and sciences programs, includes a student union, dormitory housing for men and women students, apartments for married students, a learning resources center, and a well-equipped physical education facility.

The Douglas campus offers courses for the first two years of four-year university transfer programs in such areas as communications, humanities and fine arts, science and mathematics, physical education and the social sciences. The campus also provides a variety of technical-vocational programs, such as business education, business management, professional pilot, airframe and powerplant mechanics, welding, nursing education, drafting, electronics, criminal justice, consumer education, surveying technology, and welding technology.

In addition to providing such transfer and occupational programs, the college has initiated a number of programs and services geared to special student needs such as intensive language programs in English and Spanish, a tutorial services center, a developmental skills program, an archaeological resources center, a career guidance center, and a cooperative education program that allows students to enter individual work-study programs.

The Student Affairs staff provides personal, academic, veterans and career counseling; diagnostic and vocational interest testing; financial aids advisement and job placement. Faculty members work with students as

academic advisors, assisting them in the development of learning contracts for their two years at the college on the basis of transfer curriculum guides and program guides.

The college also offers a varied student activities program, encouraging participation in student government, campus clubs and organizations, musical and dramatic presentations, the student newspaper and literary magazine and attendance at social and cultural events. Students also participate in intramural sports through the year, and student athletes compete intercollegiately in baseball, basketball, golf, tennis and volleyball.

## Learning Resources Center

The Learning Resources Center, one of the most modern resource buildings in the Southwest, was planned to meet the curricular needs of students and to provide optimum resources and facilities for college work. In addition to a large open-stack reading and reference room there are listening facilities, group study rooms, a lecture-exhibit room and an audio-visual section. The attractive facility is open:

7:30 a.m. to 9 p.m. Monday through Thursday  
7:30 to 5 p.m. Friday  
Also open one Sunday a month during the school year.

## COCHISE COLLEGE/DOUGLAS

A — Administration (100)  
B — Business Education (200)  
C — Learning Resources Center (300)  
D — Faculty Offices (400)  
E — Student Union (500)  
F — Huachuca Hall (1200, 1300, 1400)  
G — Chiricahua Hall (1500, 1600, 1700)  
H — Technical Center (1800)  
I — Anthropological Resource Center (1100)  
J — Science, Math, Social Science (1100)  
K — Apache Stronghold (Gymnasium) (900)  
L — Little Theater (800)  
M — Fine Arts (700)  
N — Liberal Arts (600)  
O — Student Affairs (1000)  
P — Maintenance ("M")  
Q — Art (1900)

# The Sierra Vista Campus

901 N. Colombo, Sierra Vista, AZ 85635  
458-7110/7113

The newly constructed Sierra Vista campus has been built to meet demonstrated needs in the Fort Huachuca-Sierra Vista area. It is located north of Charleston Road at the eastern edge of Sierra Vista, approximately one mile north-east of the junction of state highways 90 and 92.

The campus is situated on 40 acres of land donated by the Cracchiolo family. Three permanent buildings have been built which provide a student lounge, learning resource center, laboratories for chemistry, photography, criminal justice, art, typing, shorthand, reading and business machines in addition to general purpose classrooms. Two more classrooms and administrative offices are in relocatable buildings on the new campus.

A full schedule of day-time as well as night-time classes is offered. Students may enroll for full or part-time attendance and complete all requirements for the Associated degree in the following college programs at the Sierra Vista campus:

Banking	Fire Science
Business Education	General Studies
Business Management	Middle Management
Criminal Justice	Military Management
Electronics	University Transfer

Classes are also offered at Buena High School in Sierra Vista, at the Army Education Center at Fort Huachuca and other locations in the area as necessary to accommodate students and programs.

## Student Affairs — Sierra Vista

Full-time counselors are available at both the Sierra Vista campus and the Army Education Center to provide counseling services, testing, educational advisement and financial aid information. In addition to pursuing programs listed in the college catalog, students may enter into a "contract for degree" with the college, thus insuring that all degree requirements are understood. Students are urged to take advantage of these services.

The college encourages participation in extra-curricular activities, campus organizations, and cultural events to

promote leadership, student relationships and social development.

A bookstore, student lounge and vending machines are available for the convenience of students.

## Learning Resources Center — Sierra Vista

The new campus includes an expanded library staffed by professional librarians, and open the following hours:

8 a.m.-9 p.m. Monday through Thursday  
8 a.m.-4:30 p.m. Friday  
Also open two Sundays a month during the school year.

In addition to the library, the Learning Resources Center provides reading and listening facilities, audio-visual equipment and materials. Materials not on hand in the Sierra Vista facility may be requested through inter-library loan from the Douglas campus L.R.C.

## Serviceman's Opportunity College (SOC)

As a Serviceman's Opportunity College, Cochise offers the following kinds of special assistance to servicemen:

1. Advising, counseling and testing,
2. Granting of credit for appropriate educational experiences in the armed forces,
3. Transfer and reverse transfer of credits,
4. Contract for degree option,
5. Repository of records.

## Armed Forces Cooperative Admissions Program (AFCAP)

Cochise College provides open-door admission to Army personnel, maintains a full-time professional counselor at Fort Huachuca and recognizes non-traditional learning experiences.

## Flight Program — Sierra Vista

Cochise College operates an FAA and VA approved Flight School in Sierra Vista. Ground School courses are given in the Flight School Classroom, building 87852, at Libby Army Airfield. There is a complete Instrument Simulator co-located in this building. The Ground Instruction portion of the Flight Training courses is given in the Fort Huachuca Aviation Club flight planning room and Libby Army Airfield Flight Operations, in buildings 91276 and 91251. Flight Training uses the Libby Army Airfield-Sierra Vista Municipal Airport. The airport is operated under Air Traffic Control and has a control tower. There are 2 hardsurfaced

# Continuing Education

EducationHigh schools all over the county are ablaze with light. The day-time students have gone home, and another set of students has taken their place. Although some of them are high school students, most of these students are older, with a few approaching eighty years of age. Whether high school student, housewife, business man or retiree, they all have one thing in common: they are all part of the Cochise College Continuing Education Program.

Just as the ages of Continuing Education students vary, so do the subjects they study. Classes range from art to welding and include courses for college credit, job advancement, and self-improvement. Firemen study new rescue techniques, high school students get a head start on college level courses, senior citizens brighten their retirement by learning new skills and making new acquaintances, and mother leaves the children with dad so that she may work on a college degree.

Courses offered at off-campus centers directly parallel courses offered at the Douglas and Sierra Vista campuses. Classes that do not require special classroom or laboratory equipment may be offered at off-campus centers. Such course offerings are a significant part of the over-all Cochise College Program because they permit working adults and others to undertake college classes at night. Courses are rotated in such a way so as to enable a student to receive an associate degree or a certificate while attending college on a part-time basis. Hence, the primary purpose of the Continuing Education Program is to provide citizens of the Cochise College District an opportunity to continue their life-long formal education at convenient locations in their own communities.

At the beginning of each semester, a team from the Douglas Campus conducts registration in each community where classes are offered. The team consists of representatives of the Bookstore, Business Office, Counseling, Financial Aids, Registrar, and Veteran's Affairs. Provisions are made for students to drop and add classes during the first two weeks of classes, the same as for students attending the Douglas and Sierra Vista campuses. Some students register for classes at the Douglas Campus and the Sierra Vista Campus, as well as in their own communities. In this way, the entire Cochise College District becomes their campus.

Evening classes are usually offered in the communities of Benson, Bisbee, Douglas, Elfrida, Naco, Pearce-Sunsites, San Simon, St. David, Tombstone, Willcox, and occasionally in other communities where there is sufficient interest. Classes are held in animal hospitals, art centers, community centers, fire stations, golf courses, tennis courts, rodeo arenas, manufacturing conference rooms and cafeterias, and public school facilities including extensive use of libraries; media and reading centers; agriculture, automobile, drafting, and welding shops; biology, chemistry, geology, language, photography, and typing laboratories; wrestling and body conditioning facilities; and lecture rooms. With these vast facilities to draw from, the resources of the entire College District enrich the student's educational experiences.

Classes are taught by both full-time Cochise College instructors and part-time instructors academically and professionally well-prepared with varied backgrounds and experiences in such areas as art, business, criminal justice, fire science, and others.

## COCHISE COLLEGE CALENDAR 1979-80

### Fall Semester

Faculty return to campus	August 20
Fall registration at off-campus locations	August 20-23
Fall registration Sierra Vista Campus	August 21-22
Freshman Orientation	✓ August 22
Fall registration Douglas Campus	✓ August 23-24
Classes begin	August 27
Labor Day holiday	September 3
Last day for adding classes	September 7
Columbus Day holiday	October 8
Student Count date	October 10
Mid-semester exams	October 15-19
Last day to drop classes without penalty	October 26
Veterans Day holiday	November 9
Thanksgiving recess	November 22-23
Classes resume	November 26
Class sessions end	December 14
Final exams	December 17-20
Christmas recess	December 21- January 6

### Spring Semester

Faculty return to campus	January 7
Spring registration at off-campus locations	January 7-10
Spring registration - Sierra Vista Campus	January 8-9
Spring registration Douglas Campus	January 11
Classes begin	January 14
Last day for adding classes	January 25
Washington's Birthday holiday	February 18
Student Count date	February 27
Mid-semester exams	March 4-7
Last day to drop classes without penalty	March 14
Spring recess	March 17-21
Classes resume	March 24
Class sessions end	May 9
Final exams	May 12-15
Commencement	May 15

### Professional Pilot Technology

1979 - January 15 and July 16

1980 - January 14 and July 14

### Airframe-Powerplant Technology

1979 - January 15 and July 9

1980 - January 14 and July 7



# Admissions

## Policy

Prospective students are encouraged to visit the campus and discuss their educational objectives with the Admissions Officer. The Office of Admissions, in the Division of Student Affairs on the west side of campus, is open throughout the year, Monday through Friday, 8:00 a.m. to 4:30 p.m. An appointment is preferable though not required.

All high school graduates are admitted to Cochise College. Those who have not graduated from high school will be admitted if they have reached the age of 19 on or before the first day of classes for which application is being made. Others who have not graduated from high school and are under age 19 may be admitted with high school equivalency examinations such as the GED.

## Procedure

Applicants are admitted to Cochise College after the Office of Admissions has received and approved the following:

Application for Admission

\$5. application fee for out-of-state students.

Student Medical Record — Part I. This self-appraisal form is to be completed by the applicant and is required of all Classified-Full-Time and Classified Part-Time students planning to attend the main campus. The College reserves the right to require a physical examination when deemed necessary by the College Nurse or by a particular college instructional program.

High School Transcripts. Final high school transcripts are required of all applicants who have graduated from high school. Those who have not completed high school and who are age 19 or older are not required to submit transcripts. Applicants who are under the age of 19 and who have not graduated from high school are required to submit results of the GED examination or evidence of other high school equivalency. Persons applying for unclassified status need not submit high school transcripts. High school transcripts are to be sent directly by the sending institution to the Office of Admissions. Transcripts carried by the applicant will not be accepted.

College Transcripts. Applicants who have attended college elsewhere must submit a transcript of college work. College transcripts are to be sent directly by the sending institution to the Office of Admissions. Transcripts carried by the applicant will not be accepted.

Report of Physical Examination — Part II. Persons intending to enter the Nursing program, those planning to participate in intercollegiate athletics and those who are residents of foreign countries must have this form completed by a licensed physician. Professional Pilot students are required to have a Class I or II physical examination by an FAA-approved physician. Special FAA medical forms will be supplied and used by the physician.

College entrance examinations, such as ACT or SAT, are not required for admission. However, the College does administer the ACT on the national testing dates for October, December, February, April and June as a service to county students who wish to take the test.

## Placement Testing

All full-time, first semester freshmen must take placement tests in reading, English and mathematics. Those who score below the cut-off grades for any of the three tests will be registered in appropriate courses to improve basic skills. The Associate of Arts and Associate of Science degrees require transfer level English and mathematics courses. A maximum of six units of basic skills courses will be counted as institutional credit toward graduation from the college.

## Foreign Student Language Requirements

Full-time foreign students who test below 60 on the Michigan Proficiency Test are required to take at least four courses in the English Immersion Program at the appropriate level. Those full-time foreign students who do not want to take 20 hours a week in the Immersion Program can appeal to a Screening Committee before the end of the second week of the semester.

## Acceptance to the Nursing Program

Admission to Cochise College is the initial step for entrance into the nursing program. *Please note this does not guarantee acceptance into the Nursing Program.* Nursing is a limited enrollment curriculum which usually receives more applicants than can be accepted. Applicants who have applied for and gained admission to Cochise College must meet the following requirements:

Must have two out of three of the following courses:  
Chemistry, Algebra, and Biology at the high school or college level with a 2.0 (C) average.

Have maintained an overall high school or college GPA of 2.0 (C).

Attain a satisfactory score on the CEEB - Comparative Guidance Placement Test. This test will be given in March and April of each year at the College.

Submit a satisfactory medical examination. Parts I & II. A chest x-ray is mandatory.

Attend an interview with nursing faculty.

Complete a Math Proficiency Test with a score of 90%.

Be prepared to transport themselves to class and clinical agencies.

Further information on specific requirements is available from the Office of Admissions or the Nursing Department.

**Acceptance to Professional Pilot Program - Douglas Campus**

The Professional Pilot program requires a personal interview prior to acceptance to the program. Applicants must complete all appropriate requirements for admission to the college. Upon receipt of the Letter of Admission, applicants for this program should make arrangements for a personal interview. Contact:

Chief Flight Instructor  
Cochise College  
Douglas, Arizona 85607  
(602) 364-7943 or (602) 432-5737

Arrangements for interviews with the Chief Flight Instructor must be made well in advance of planned entrance to the program.

**Acceptance to Airframe and Powerplant Mechanics Program - Douglas Campus**

The Airframe and Powerplant program requires a personal interview prior to acceptance to the program. Applicants must complete all appropriate requirements for admission to the college. Upon receipt of the letter of admission, applicants for this program should make arrangements for a personal interview. Contact:

Chief A & P Instructor  
Cochise College  
Douglas, Arizona 85607  
(602) 364-7943 or (602) 432-5737

Arrangements for interviews with the Chief A & P Instructor must be made well in advance of planned entrance to the program.

**Nursing and Aviation Program Deposits**

Students accepted to these programs are required to submit non-refundable program deposits well in advance of program start dates:

Professional Pilot	\$ 90
Airframe-Powerplant Technology	\$ 58
Associate Degree Nurse	\$100

**Admission for Veterans**

Cochise College has been approved for veterans training under federal and Arizona statutes. By Arizona Statute, Cochise College will determine the admissibility of an honorably discharged veteran, who has served in the armed forces of the United States for a minimum of two years and who has previously enrolled at a university or community college in Arizona. No failing grades by such veteran at any Arizona university or community college prior to his military service may be considered. Specific information on veterans progress, attendance and prior training evaluation may be obtained from the Coordinator of Veterans Affairs.

A veteran student admitted or re-admitted to Cochise College under this statute is subject to progression, retention, graduation, and other academic regulations and standards in this catalog.

**Admission for Foreign Students**

A Letter of Admission and Immigration Form I-20 are sent to the applicant only after the Office of Admissions has received and approved the following

1. Application for Admission
2. \$5 Application Fee
3. Student Health Record - Part I
4. Report of Physical Examination - Part II
5. High School Transcripts
6. College Transcripts (if applicable)
7. Statement of Financial Guarantee

Foreign students should note that upon arrival at Cochise College, English proficiency testing will be required and the

student may be required to enroll in intensive English coursework.

### **Able and Ambitious Students**

Students who have completed a minimum of three (3) full years in a county high school and who are now attending high school as a classified senior, may attend Cochise College, subject to stipulations and policies of the respective high schools. Able and ambitious high school students wishing to attend college are required to complete an Application for Admission only. Applicants in this classification must be at least 16 years of age on or before the first day of classes.

### **Re-admission**

Students who have been absent from Cochise College for a regular semester or longer, must apply for re-admission prior to the opening of the semester for which they wish to enroll.

### **Counseling and Advising**

Counselors are available to assist students in planning their educational program and in their general growth and adjustments to college life. Career choice and related course sequence are of particular concern. Careful attention is offered to students so that they may implement a program of their choice.

An educational planning interview is available to the individual student before enrolling in the college and during each succeeding semester. Through preparation and experience, counselors are able to offer guidance and counseling services which include a carefully coordinated curriculum, advantageous registration procedures, advice on adjustments to college and assistance in solution of many other personal problems.

Students are assigned a faculty advisor according to their major interest. Faculty advisors assist the student in preparing a program of studies and advise on transfer and employment requirements. Students undecided as to a major will be assigned to a counselor.

### **Program Plan**

In order to assure that students meet graduation or certificate requirements and to also assure maximum transferability of courses, the faculty advisor and the student work out a Program Plan. The program plan will be developed by the student and the advisor according to the

degree and major the student has chosen. If a student has not chosen a major, the general AS or AA degree plan will be followed.

### **Testing**

Although educational and vocational testing does not constitute the final answer, testing is useful in helping the student explore educational and vocational choices as well as helping the student gain personal insight into individual strengths and abilities. To supplement the group and individual counseling, Cochise College has a testing program in the areas of academic ability, aptitude, achievement, skill, interest, and personality. Special testing is required for nursing applicants and for those students whose first language is not English. Students interested in testing should see a counselor in the Division of Student Affairs.

### **Career Information Services**

Cochise College has developed an extensive career information system. This includes broad coverage of colleges and universities (both state and national) to which a student may transfer. The service also encompasses military, vocational and trade schools. The information includes entrance requirements, majors offered, courses offered, expenses, and general information about the institutions. Career information is available in the Division of Student Affairs.

The main body of this service consists of job descriptions and related information for more than 36,000 occupations. Included are descriptions of work performed, working conditions, training requirements, personal qualifications, method of entry, employment outlook, earnings, social, and psychological factors and references for further information.

### **Placement**

The Office of Career Placement in the Division of Student Affairs will assist graduates in making contracts and arranging for interviews with prospective employers in respective fields of specialization. A counselor will assist students in making application for admission to a four-year college or university if the student is about to complete a transfer program.

### **STUDENT CLASSIFICATION**

CLASSIFIED Full-time students registered for 12 units or more.

CLASSIFIED: Part-time students registered for 1 to 11 units who intend to work toward a degree

UNCLASSIFIED: Part-time students registered for 1 to 11 units who do not plan on working toward a degree.

## **RESIDENCE REQUIREMENTS**

### **RESIDENCE IN LOCAL HIGH SCHOOL DISTRICT:**

Students whose residence is in one of the high school districts comprising the Cochise College District are qualified to enroll at Cochise College according to the admissions policies and procedures set forth in this catalog.

### **RESIDENCE IN HIGH SCHOOL DISTRICTS**

**NOT MAINTAINING A COMMUNITY COLLEGE:** Students who reside in a county not maintaining a community college are eligible to attend Cochise College. Students from such areas must complete a residence statement prior to registration. Their tuition will be paid by the county of residence.

### **RESIDENCE IN DISTRICTS**

**MAINTAINING A COMMUNITY COLLEGE:** Students who are residents of districts maintaining a community college are not charged out-of-county tuition.

**STUDENTS FROM OUT OF STATE:** Under an ordinance of the State Community College Board, tuition waivers are no longer available to assist non-residents of the state to attend an Arizona Community College. Out-of-State students are subject to payment of out-of-state tuition as set forth in this catalog.

## **RESIDENCY REGULATIONS**

The Arizona State Board of Directors for Community Colleges has established the following residency requirements of the community colleges of Arizona in accordance with Sections 15-791 through 15-795, Arizona Revised Statutes.

### **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 unemancipated 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 unemancipated 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.

### **PERSONS AGED 18 YEARS OR MORE**

A person aged 18 years 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 19th birthday. A person aged 18 years or more must present proof that domicile in the State of Arizona has been established (independently of the circumstance 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 student 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 unemancipated 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.

NOTE: The Office of Admissions may require that the applicant complete an Arizona Domicile for the purpose of making a final determination on legal residency.

## Tuition and Fees

The Cochise College Governing Board and the State Board of Directors for Community Colleges of Arizona have approved the schedule of charges for 1979-80 as shown below.

All semester fees must be paid in full at the time of registration, except that arrangements may be made to pay the room, board, and tuition on a two-payment basis

### Per Semester

#### FULL-TIME STUDENTS (12 units or more)

Residents of Cochise County	No Tuition Charge
Military personnel and their dependents living in Cochise County	No Tuition Charge
Residents of counties without community colleges (home county pays Cochise County \$625 per semester)	No Tuition Charge
Residents of counties with community colleges; Graham, Maricopa, Mojave, Navajo, Pima, Pinal, Yavapai, Yuma	No Tuition Charge
Residents of other states, foreign countries	\$650

#### PART-TIME STUDENTS (1-11 units)

County residents including military personnel and their dependents	No Tuition Charge
Residents of other counties, states and foreign countries	
1 - 6 units	\$2 per unit
7 - 11 units - Retroactive to one unit	\$55 per unit
Summer Session	\$20 per unit

### Registration Fee Per Semester

Students carrying 10 or more units	\$100
Students carrying 5 to 9 units	40
Students carrying 1 to 4 units	20
Summer Session	10

**Student Housing** Per Semester**ROOM AND BOARD**

Regular semester students (17 weeks)	\$600
A & P students (12 weeks)	426
Professional Pilot students	
July - December (23 weeks)	\$805
January - June (21 weeks)	735

All full-time resident students who are single are advised to live in college housing and have their meals in the college dining hall. This does not apply to the commuting student who lives in his own home or with legal guardian or relatives. The board payment provides a seven (7) day meal ticket for the semester with 20 meals each week when classes are in session.

**HOUSING DEPOSIT** \$40

The room deposit of \$40, which does not apply toward room and board fees, is payable before registration.

**ROOM AND BOARD PAYMENTS**

Students may make the full room and board payment for the semester at the time of registration or may pay on a two-payment basis as follows:

50% of the room and board payment due upon registration for classes.

Final 50% of the room and board payment due on or before the Monday of the sixth (6th) week of classes.

Apartments for married couples, (including utilities, per month)	\$125
Housing deposit	\$50

**Graduation Fee**

Every candidate for an Associate degree is required to pay a graduation fee of \$12. Those completing certificate programs are not required to pay the fee. The graduation fee is to be paid when the student registers for his final semester.

**Flight Training Fees****BASIC PROGRAM FEES** (Commercial License)

AT-101 Primary Flight and First Phase Commercial Pilot	\$880
AT-102 2nd Phase Commercial Pilot	935
AT-204 Instrument Pilot	1144
AT-103 3rd Phase Commercial Pilot	987
	<u>\$3,946</u>

**OPTIONAL FEES**

AT-208 Multi-Engine Pilot	\$638
AT-220 Flight Instructor	440
AT-90a Air Transport Pilot Training	TBA
AT-90b Air Transport Pilot Training	TBA
AT-240 Instrument Flight Instructor	440
AT-230 Multi-Engine Instructor	880

**Laboratory Fees**

Classes in Art, Science, Welding and others	\$10
Aviation Mechanics (per 10-week phase)	\$20
Welding	\$25
Individual Music Instruction	\$45

**Miscellaneous Fees**

Out-of-State Application Fee	\$ 5
(This fee must accompany the Application for Admission)	
Late Registration	\$ 5
Late Payment of Fees	\$ 5
Credit by Examination (per semester hour)	\$ 8
CLEP Subject Examination per test	TBA
Transcript fee - First free, each additional	\$ 1
Returned check fee (for each returned)	\$10
Nursing Insurance (subject to change)	\$16.45
Replacement of ID card or meal card	\$ 1

**Refunds of Fees**

**TUITION:** The following graduated scale for refunding of tuition for students who officially withdraw or are dismissed from the College applies to all students.

The refund schedule is:

75% if withdrawal is prior to the seventh calendar day after college scheduled classes commence.

50% if withdrawal is between the eighth and fourteenth

calendar day after college scheduled classes commence.  
0% if withdrawal is the 15th day or thereafter.

**REGISTRATION FEE:** Registration fee is non-refundable after the first week of classes. Fifty percent (50%) refund is allowed if withdrawal is completed prior to the end of the first week of classes.

**ROOM:** Students who voluntarily move from college housing or who are removed by administrative action, will receive a percentage of the unused portion of the full semester room payment as indicated on the following schedule. No refunds are made for meals missed at any time prior to the end of the charge period as indicated below, nor will any refunds be given on meals during the last two weeks of the semester.

If a legitimate medical excuse or other emergency circumstances prevent the student from remaining in college the amount of the room refund will be prorated through the end of the applicable semester with the approval of the Chairman of Student Affairs.

WITHDRAWAL PRIOR TO FRIDAY OF:	PERCENTAGE OF FULL SEMESTER ROOM REFUND:
1st week	85 %
2nd week	80 %
3rd week	75 %
4th week	70 %
5th week	65 %
6th week	60 %
7th week	55 %
8th week	50 %
After the 8th week	None

**APARTMENT AND ROOM DEPOSITS:** Apartment and/or room deposits will be refunded according to the conditions of the Housing Agreement and the conditions of the Apartment Lease after the apartment or room is vacated less any amounts due the College for damages or other charges.

**AVIATION STUDENTS:** Students (Airframe and Powerplant and Professional Pilot) who withdraw from the residence hall prior to the 5th (fifth) week of classes will receive refunds based on the following schedule:

WITHDRAWAL PRIOR TO FRIDAY OF:	PERCENTAGE OF 10 WEEK PHASE ROOM REFUND
1st week	85 %
2nd week	80 %
3rd week	75 %
4th week	70 %
5th week	65 %
After the 5th week	None

**FLIGHT FEES:** Unused flight fees will be refunded in full.

All refunds and deposits due students for any reason will be forfeited unless written application is submitted on or before June 15th of the academic year in which they are due.

# Financial Aid, Scholarships, and Grants

Cochise College offers a variety of financial aids to full-time and part-time students who have completed the appropriate applications. Types of financial aids available include scholarships, Grants-in-Aid, College Work Study\* (on and off campus), Non-Work Study, Athletic Grants-in-Aid, Fee Waiver Scholarships and Grants, Supplemental Educational Opportunity Grants (SEOG), Migrant Opportunity Program Grants, Bureau of Indian Affairs Grants, Basic Educational Opportunity Grants (BEOG), Cochise College Short-Term Loans, Nursing Loans and Scholarships, Federally-insured Student Loans, National Direct Student Loans, Law Enforcement Loans and Grants, Dougherty Foundation Loans and Grants.

\*Students must only carry six (6) units to be able to work on the college work-study program.

## Financial Aid Application Procedure

To apply for any type of financial aid, with the exception of LEEP grants and loans, the applicant must:

1. Complete the Family Financial Statement (FFS) of the American Testing Program (ACT) and the Arizona Student Data Form. The FFS is also the application for the BEOG when the appropriate box is marked. All students must apply for this if they are applying for financial aid. Designate Cochise College as a recipient (Code 0089), send the Family Financial Statement and the Arizona Student Data Form to ACT with the appropriate processing fee. Allow a minimum of six weeks for processing. Please forward all copies of the Student Eligibility Report to the Financial Aid Officer.
2. If you wish to be considered for general academic scholarships and financial need is not a factor, the Arizona Student Data Form is the only form that is necessary. You may obtain this form from your high school counselor or college financial aid officer.

The Financial Aids Committee has nine members including the Financial Aids Officer, who acts as chairman, the Coordinator of Counseling, the Comptroller, four faculty members, and two students appointed by the Student

Government. Its function is to screen certain specified applications and determine recipients of these awards as well as recommend procedures to be utilized in the financial aid process. Financial Aids Committee meetings are held prior to the awarding process each semester. Regular meetings are held during the school year.

## Grants and Scholarships

Both new and returning full-time students are eligible for scholarships and grants-in-aid. Scholarships are awarded to graduates of Cochise County high schools and are made possible by the support of interested groups and individuals.

Three methods of selection are utilized as follows:

1. Recipients are chosen by the donor.
2. Selection is made by the Financial Aids Officer.
3. Selection is made by the Financial Aids Committee of Cochise College.

## Grants-In-Aid

Grants-in-aid are available in the areas of athletics, art, music, and journalism. Athletic grant recipients are selected by the coaching staff and are administered by the Financial Aids Officer. Recipients of music and art fee waivers are selected by the Division of Humanities and Fine Arts. Awards are administered by the Financial Aids Officer.

## Fee Waiver Grants

Available to a limited number of freshmen applicants graduating from high schools throughout the state who express a desire to attend college. Grants are in the amount of the prevailing semester registration fee.

Grants are renewable the second semester for a total of two semesters, contingent upon continuous full-time enrollment and maintenance of a 2.0 (C) grade-point average. The only qualifications for eligibility are residency in the State of Arizona and a desire to attend college.

## Arizona State Student Incentive Grant Program

Available to undergraduate students who meet the eligibility requirement relating to very needy students.

## Supplemental Education Opportunity Grants (SEOG)

This is a continuation of the program formerly known as



the Educational Opportunity Grant (EOG) program. It consists of a federal program of grant aid (not repayable) to deserving students with exceptional financial need. A requirement of this program is that Supplemental Educational Opportunity Grants cannot be awarded in amounts of more than 50% of the total award given any student. This means the recipient must have received financial aid from another source at least equal to the SEOG amount. When recipients receive college work-study as a match for SEOG, they must work ALL of their work-study award.

### **Basic Educational Opportunity Grants (BEOG)**

This program is legislated to serve all undergraduate students who show financial need. To be eligible students must be a U.S. citizen or permanent resident and be enrolled at least half-time. The BEOG award is based on family financial assets and cost of education.

### **Nursing Scholarship Grants**

This program consists of grant aid (not repayable) to students pursuing a course of study leading to an Associate Degree in nursing. This aid is limited to students with exceptional financial need. Nursing students applying for financial aid are considered for both Nursing Student Loans and Nursing Scholarship Grants.

### **Academic Scholarships**

Available to state and county high school students who have graduated at the end of the spring semester immediately preceding entrance to Cochise College the following fall semester. Academic Scholarships are renewable the second semester for a total of two semesters, contingent upon continuous full-time enrollment and maintenance of a 2.5 (B-C) grade-point average. Qualifications for eligibility include a desire to attend college and rank within the top 40% of the student's graduating class. These scholarships are in the amount of the prevailing semester registration fee.

AIRESEARCH MFG. CO.: Number and amount vary.

AMERICAN CITIZENS SOCIAL CLUB: Provides one scholarship in the amount of \$200 per year. Recipient is selected by donor.

AMERICAN LEGION L.A. ENGLE, JR. POST No. 16: Provides one scholarship in the amount of \$200 per year. Recipient is selected by donor.

ARIZONA CATTLE GROWERS ASSOCIATION: Number and amount vary.

ARIZONA LUNG ASSOCIATION INC: Provides scholarships of up to \$300 each to this institution. Number and amount vary.

ARMED FORCES COMMUNICATION AND ELECTRONICS ASSOCIATION: Provides two \$250 grants-in-aid to pre-engineering or science-related majors. Applicants must have financial need and be residents of Southern Arizona.

ASSOCIATED STUDENT SCHOLARSHIPS — MIKE BREWSTER SCHOLARSHIP FUND: Scholarship established as a living memorial to Michael Brewster.

AVIATION SAFETY ADVISORY GROUP SCHOLARSHIP: Several scholarships in the amount of \$500, \$1,000, and \$1,500 will be awarded to high school graduates who will enroll for an Associate in Applied Science degree in Airframe and Powerplant Technology. Recipient selected on the basis of need and scholastic ability. Funds provided by the Hare Foundation and the Arizona Aerospace Education Association.

BENSON WOMAN'S CLUB: An annual award in the amount of \$300. Selection is made by the donor.

BISBEE AMERICAN LEGION AUXILIARY UNIT 16: Annual award of \$100-\$200 to a Bisbee High School girl graduate. Recipient must be majoring in any of the following fields: Nurse, Teacher, Business. Must be in top one-third of class and daughter of a Legionnaire or Veteran.

BISBEE BUSINESS AND PROFESSIONAL WOMAN'S CLUB: A \$120 scholarship to a Bisbee High School student. Financial Aids Committee chooses recipient with the following requirements set by donor: financial need, scholarship.

BISBEE HIGH SCHOOL STUDENT BODY ASSOCIATION: Number and amount vary.

BISBEE LIONESS CLUB: Number and amount vary.

BISBEE ROTARY CLUB No. 1681: Provides three scholarships in the amount of \$75 each.

BISBEE WOMAN'S CLUB: Annual award is made to a Bisbee High School girl graduate.

BISHOP SALPOINTE COUNCIL KNIGHTS OF COLUMBUS SCHOLARSHIP: Number and amount vary.

**DEL BOHMFALK MEMORIAL SCHOLARSHIP:** Scholarship has been provided as a memorial to one of Cochise County's veteran members of the Sheriff's department, the late Del Bohmfalk. Scholarship will be for \$100 per semester, to be awarded on recommendation of Cochise County Sheriff to person showing leadership potential who meets the following criteria: Criminal Justice major, resident of Cochise County, shows academic promise, maintains a cumulative grade point average of 2.8 or better.

**BUSHMASTERS CLUB OF BISBEE:** A scholarship presented to Cochise College for Bisbee High School graduates. Number and amount vary.

**BUSHMASTERS CLUB OF DOUGLAS:** Several scholarships of \$200-\$300 each awarded annually. Recipients must be graduates of Douglas High School. Applicant names proposed by Douglas High School Scholarship Committee.

**RAY DIAMOS BUSTAMANTE SCHOLARSHIP:** A memorial scholarship established by Mrs. A.D. Kerson in July 1971. Made to needy students. This is an endowed scholarship.

**CARL CAUDILL MEMORIAL SCHOLARSHIP FUND:** Number and amount vary.

**CLUB ALBA:** Number and amount vary.

**COCHISE COLLEGE ACTIVITIES SCHOLARSHIP:** Based on following criteria: Faculty advisors will recommend recipients, awarded at end of semester for activity during semester.

**COCHISE COLLEGE CLASSIFIED ASSOCIATION BOOK AWARDS:** Since spring semester 1974, this organization has awarded books to a deserving student each semester. The dollar amount depends on the cost of the student's books.

**COCHISE COLLEGE PROFESSIONAL ASSOCIATION AWARDS:** Two awards to outstanding sophomore graduates in the amount of \$150 each, based on scholastic ability, contributions to Cochise College and leadership.

**COCHISE COLLEGE FOUNDATION SCHOLARSHIPS:** Five scholarships are provided for the 1979-80 college year. Scholarships based solely on academic achievements (grade point average), through first 3½ years of high school. A list of students who meet minimum scholarship requirement of 3.2 (B+) submitted by high school

counselors to college Financial Aids Officer, who makes selection after review of applicants. The eligible recipients each awarded \$300 scholarship used in first semester at Cochise College. Recipients receive an additional \$300 scholarship in spring semester if final grades in fall semester are 3.2 or better.

**COUNTY INDEPENDENT INSURANCE AGENTS:** Provides several scholarships each in the amount of \$400 to needy, eligible applicants. Recipients selected by Cochise County Independent Insurance Agents. Applicants should apply for grant-in aid through Financial Aids Officer prior to March 15. Applicants must be Cochise County residents.

**COCHISE COUNTY MEDICAL SOCIETY:** Number and amount vary.

**COPPER CITY WOMAN'S CLUB:** Scholarship of \$100 to a Bisbee High School graduate.

**DOUGLAS AMERICAN LEGION FRED HILBURN UNIT No. 11:** An annual scholarship established for one boy and one girl graduate of Douglas High School. Amount of award is \$200 for each student to cover a two-year period. Recipients must receive highest grade score of achievement for Americanism.

**DOUGLAS ART ASSOCIATION:** A \$200 award made to a Douglas High School graduate. Amount varies from year to year. Recipient must be an art student chosen by the Douglas Art Association Board of Directors from a list of qualified students submitted by the Financial Aids Officer.

**DOUGLAS BUSINESS AND PROFESSIONAL WOMAN'S CLUB:** Scholarship in amount of \$175 provided.

**DOUGLAS ELKS LODGE No. 955:** Douglas Elks Lodge awards six scholarships of \$200 each.

**DOUGLAS EVENING LIONS CLUB:** Scholarship of \$150 established in July 1970. Following requirements stipulated: recipient must be a Douglas High School graduate, a sophomore at Cochise College, equal value placed on scholarship and need.

**DOUGLAS HIGH SCHOOL PRINT CLUB SCHOLARSHIP:** Number and amount vary

**DOUGLAS KIWANIS:** Scholarships of \$200 each awarded annually by Douglas Kiwanis Club. Number vary.

**DOUGLAS MUSIC CLUB:** Recipients chosen by donor. An annual scholarship with amount varying yearly

DOUGLAS REPUBLIC WOMEN SCHOLARSHIP: Number and amount vary.

DOUGLAS TELEVISION COMPANY: Annual awards are made by donor with recipients selected by Douglas High School counselors. Scholarships to Douglas High School graduates.

ELIZABETH GRAY MEMORIAL SCHOLARSHIP FUND: A scholarship fund established by Mr. and Mrs. Henry D. Clark as a living memorial to Mr. Clark's sister, Elizabeth Gray. Awards are made to sophomore students registered in the Associate Degree Nursing Program. This is an endowed scholarship.

ELKS LODGE OF BISBEE No. 671: Provides one scholarship in amount of \$250.

EMERGING WOMAN SCHOLARSHIP: Number and amount vary.

MEL ENGELSTAD BUSINESS SCHOLARSHIP FUND: Eligibility requirements as follows: student must be majoring in Business and willing to join Phi Beta Lambda before receiving the grant and remain a member in good standing, must be capable of maintaining GPA (grade-point average) of 2.5 or above. Sponsor of Phi Beta Lambda will interview and approve student before selection becomes final.

FACULTY WIVES ASSOCIATION — HAZEL MONNETT SCHOLARSHIP: Registration fee scholarships. Awarded to persons recommended by Cochise College Faculty Women's Association. Number and amount vary.

FIRST NATIONAL BANK OF ARIZONA: Three \$150 annual scholarships awarded by First National Bank. Requirements are: scholarship, need, resident of Arizona, majoring in Business.

FORT HUACHUCA OFFICERS AND CIVILIANS WIVES' CLUB: Number and amount vary.

GARDANIER SCHOLARSHIP: Number and amount vary. This is an endowed scholarship.

GUNTER MEMORIAL RODEO SCHOLARSHIP: Awarded on recommendation of Rodeo Club sponsor. \$100 per semester.

HART ENTERPRISES SCHOLARSHIP: Number and amount vary.

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS-DR. GEORGE SCHAFER MEMORIAL FUND: Three scholarships of \$200 each. Selected recipients may qualify for a continuing scholarship in sophomore year. Recipient must meet following requirements: graduate of Cochise or Santa Cruz County high schools, enrolled in Electronics Technology Program or plan to transfer to a four-year college or university to pursue an upper division major in an engineering scientific field, maintain a grade point average of 3.0 (B) or better during first year to maintain eligibility for assistance during second year.

KIWANIS CLUB OF BISBEE: provides \$200 scholarship.

BARBARA AND MARY LEITCH SCHOLARSHIP: Number and amount vary.

LAMDA CHI OMEGA BETA CHAPTER: Scholarship of \$250, provided a student exhibits financial need.

GERALD M. PINTO SCHOLARSHIP: A \$200 scholarship to Bisbee High School graduate, based on need and academic achievement.

PROCUREMENT DIVISION SCHOLARSHIP FUND — FORT HUACHUCA: Number and amount vary. This is an endowed scholarship.

INGWALD A. ROSOK SCHOLARSHIP FUND: A scholarship awarded on the basis of scholarship, financial need, citizenship and leadership qualities. Two graduates of Cochise College and Bisbee High School will each receive a \$200 scholarship per semester to continue education at a four year university.

SAL RAMIREZ MEMORIAL: Number and amount vary.

MISS SIERRA VISTA: A scholarship of \$200.

NCO AND SPECIALISTS' WIVES CLUBS: Scholarship of \$500 is provided annually.

PHELPS DODGE MORENCI SMELTER COKE FUND SCHOLARSHIP: Number and amount vary.

SAN SIMON FIRE DEPARTMENT: Number and amount vary.

SIERRA VISTA WOMEN'S CLUB: Annual \$250 scholarship awarded worthy recipient chosen by Cochise College Financial Aids Committee. Criteria used in determining recipient: Buena High School graduate, need.

UNITED STEELWORKERS OF AMERICA LOCAL No. 6305: Scholarship of \$300. Recipient must meet following criteria: Douglas High School graduate, need, child of a member of the Steelworkers Union.

VESTA CLUB SCHOLARSHIP BANK: Number and amount vary.

VETERANS OF FOREIGN WARS JAMES MURPHY POST No. 836 AND AUXILIARY: Donor to select recipient, a graduate of Bisbee High School. Scholarship in amount of \$300 to be presented in two payments.

VOITURE No. 160 40 ET 8 NURSING SCHOLARSHIP: Number and amount vary.

XI LAMBDA CHAPTER BETA SIGMA PHI: Number and amount vary.

## Loans

### **National Direct Student Loans (NDSL):**

This is a continuation of the program formerly known as the National Defense Student Loan Program. Loans are available yearly to all qualified students. The amount of the loan award is determined by the student's need. Interest at a low rate (currently 3%) commences nine months after the borrower is no longer an officially-enrolled student. Repayment to the College is made in quarterly installments. Deferment while engaged in educational pursuits is available and certain cancellation factors may be used after completion of college.

### **Nursing Student Loans (NSL):**

Repayable loans are available to students enrolled in the Associate Degree Nursing Program. Nursing students are not eligible for the National Direct Student Loans. Interest at a low rate (currently 3%) commences nine months after the borrower is no longer an officially enrolled student. Repayment to the College is made in quarterly installments. Up to 50% of the loan may be cancelled at the rate of 10% per year for each full year of professional nursing employment. The amount of the loan award is determined by the student's need.

### **Federally Insured Student Loans (FISL)**

This loan is based on financial need and students applying for this loan should submit the ACT Family Financial Statement and Institutional Data Sheet.

### **VA Direct Loans**

All veteran students whose delimiting date has not passed, regardless of remaining eligibility, may apply for up to \$1250 per semester.

### **Hamer Education Loan Fund**

Loans are available to sophomore students enrolled in the Nursing Program. Applicants should initiate the application procedure with the Financial Aids Officer.

### **Law Enforcement Education Program:**

Pre-service applicants may apply for this loan program. A percentage of the loan may be cancelled dependent upon recipients employment status and length of employment in a certifiable position after completion of the degree requirements.

### **Other Student Loan Funds**

In addition to the loan funds referred to above, several organizations and individuals have made contributions to the Student Loan Fund for distribution by the college. These include memorials to Miss Melinda Fredley, Mrs. Kathleen Evans, Mrs. Marie Whatcott, Dr. T.C. Johnston, John Wilson, N.F. Womer. Other funds have been contributed by the Altrusa Club, Martin Gentry, and Joseph Refsnes and Sears, Roebuck and Co.

## Employment

### **Non-Work Study Employment**

Jobs are available in various areas. Applications are screened by the Financial Aids Officer. Students are then referred to the Co-operative Education Department for interviews and job placement.

### **College Work-Study**

This is a program for full or part-time students from low income families who need employment to help defray educational expenses. Awards are made to deserving students who demonstrate financial need. Students generally are employed on a part-time basis. However, students may work on a full-time basis if approval is received from the Financial Aids Officer. The minimum pay rate is the existing federal minimum hourly wage rate. Students are interviewed after being declared eligible and then placed in jobs through the Co-operative Education department. The IDS, ACT, and Student Affidavit must be completed before eligibility is determined.

# Student Life

## Student Life Committee

With a membership of faculty and students, the Student Life Committee provides entertainment and enrichment in the arts through popular entertainers, films, art shows, plays and lectures.

## Health Services

The College offers a well-equipped campus health center directed by a full-time registered nurse. In cases of illness or injury, students are referred to the local doctor of their choice for diagnosis and treatment. Consultation with the home-town family doctor of resident students is also afforded. Student health insurance is available on voluntary basis through the Health Center for all full-time students (12 hours or more). However, the health insurance is compulsory for all foreign students.

## Student Union

The "living room" of the campus offers an opportunity for students to socialize with fellow students, faculty and administration in an informal atmosphere. Meeting rooms as well as comfortable lounges, a billiard room, game room, TV viewing area and various dining facilities augment the services to the student by the College. The office of the Co-ordinator of Student Activities is located in this building.

The dining room services provided by the Student Union include a "rathskeller" snack bar, a private dining facility and a large well-equipped dining room capable of seating 500. Resident students are offered a well-balanced menu featuring popular foods. Seasonal buffets, steak nights, and other unique monotony-breakers create a "second home" atmosphere in the Student Union.

## Student Activities

The College encourages participation in extra-curricular activities, campus organizations, intramural, and intercollegiate athletics to promote leadership, student

relationships, and social development. Most campus activities are the responsibilities of student clubs and organizations. During the year, a full schedule of activities is planned for the student body by the students.

Student activities include Apache Day, athletic events, band, choir, billiards tournaments, college rodeo, Cultural Film Series, drama productions, Hawaiian Luau, informal dances, intramural sports, Parents Day, Public Events Series, Red and White Ball, Student Orientation Program, Las Vegas Night, rock concerts, lectures, picnics, weekend trips, Popular Film Series, happenings, Snowball Dance.

## Social Events Committee

A subsidiary of the Associated Student Government, the Social Events Committee, performs important programming functions for the students. The Committee is made up of a commissioner and committee members who have an expertise in some area of programming. The commissioner is elected at all-school election each spring. The Committee schedules dances, selects movies, and plans mid-week "happenings."

## Food Committee

The Food Committee is comprised of student, faculty and food service representatives who endeavor to produce the best in food quality, service, and sanitation.

## Organizations

Student organizations attempt to satisfy all student needs and interests. Students of similar interests may form a club in which fellow students can participate in specialized activities.

Organizations include Alpha Eta Rho (Aviation), Amerind Club (Indian and Archaeology), Associated Women Students, Baptist Student Union, Beta Phi Gamma (Journalism Honorary), Campus Crusade for Christ, Cheerleaders, Delta Epsilon (DECA), Drama Club, Freshman Class Officers, Heliograph (newspaper), International Club, Latter-Day Saints Student Association, MECHA, Spanish Club, Nurses Club, Phi Beta Lambda (secretarial), Residence Hall Councils, Red Key Club (Leadership Honorary), Rodeo Club, Songleaders, Sophomore Class Officers, Starchuters, Women's Recreation Association (WRA), Veteran's Club, Judo Club, Political Science Specialists, and Newman Club.

## **Athletics**

Cochise College competes with other community colleges in conference basketball, baseball, tennis, golf, and women's volleyball. Apache Stronghold is the center for intercollegiate sports, concerts, and a variety of intramural activities.

## **Student Publications**

*The Heliograph* is the official student newspaper and is published twelve times during the academic year. *Mirage*, a student literary magazine, is published once during the spring semester. *The Flaming Arrow* is the official student newspaper of the Sierra Vista campus.

## **Student Housing**

Campus housing is available in Huachuca Hall for men and Chiricahua Hall for women. All single students are advised to live on campus if they are not commuting from the home of their parents, legal guardian or relative. A limited number of studio apartments for married students are also available. A room deposit is required of all applicants who desire campus housing. The deposit is refunded, less any damage charges, when the student leaves the college.

Residence hall students are required to participate in the college food service facilities and must sign a room and board contract. If students are under 18, a parent or guardian must also sign. Three meals are served each day except Sunday, when only two meals are served.

Applicants must submit a room deposit with the housing contract and be formally admitted to the College before a room assignment may be made.

Adjustments in room rates are not made in periods of over-assignment and the College may reassign rooms from time to time to insure the general welfare of students and the economical operation of residence halls.

Cochise College assumes no responsibility for the loss, theft, or damage to the personal effects of resident students. In addition, the College reserves the right to:

deny or cancel room assignments in the interest of health, discipline, or academic standards.

cancel housing applications when all residence hall rooms have been assigned to earlier applicants.

hold residence hall students financially responsible for all losses and damage in assigned rooms.

Huachuca and Chiricahua Halls will be closed through Thanksgiving, Christmas, semester break and spring vacations. All students will be expected to leave unless special arrangements are made in advance of the holiday period. Those enrolled in the aviation programs will be expected to leave when their classes terminate or for any of the breaks listed above.

## **Apartment Housing**

The College maintains an apartment housing complex for married students. Each apartment is completely furnished and includes wall-to-wall carpeting, individual room air conditioning and heating controls, electric stove, garbage disposal, telephone, and television connections. Additional advantages include laundry facilities and trash pickup.

## **Housing Admission**

Students who are interested in residence hall living or married student apartments may write or call the Co-ordinator of Housing, Student Union, Cochise College, Douglas, Arizona 85607.

# Academic Regulations

**ACADEMIC COUNCIL** — The enforcement, interpretation and waiving of academic requirements are a responsibility of the Academic Council. Membership includes representatives from the Science and Math Division, Social Science Division, Communications Division, Humanities Division, Technology Division, Aviation Division, Nursing Division, Business Education Division, Student Affairs Division, Learning Resources Center, HPER, two representatives from Student Government and the Registrar. Student petitions for the waiver of academic regulations may be presented to the Academic Council through the student's counselor.

## Classification of Students

**FRESHMAN** — Student with fewer than 28 passing units of college credit.

**SOPHOMORE** — Student with 28 or more passing units of college credit.

**Junior (Jr.)** — Student earning 28 or more units during the semester.

**Senior (Sr.)** — Student earning 28 or more units during the semester.

## Grading System

Grades are assigned in each course and the grade is recorded on the student's permanent record. Grade definitions are as follows:

- A — Superior (4.0)
- B — Good (3.0)
- C — Average (2.0)
- D — Poor (1.0)
- F — Failing

**WITHDREW FAILING (WF)** — Indicates withdrawal from the class after Friday of the ninth week with below a C in the course. A grade of WF is computed in the student's grade point average as an F, or failure.

**WITHDREW (W)** — Indicates a student has withdrawn from the course before Friday of the ninth week, or that he was earning a grade of C or better if the withdrawal was after the Friday defined above. A grade of W is not computed in the student's grade point average.

**INCOMPLETE (I)** — Indicates that for a justifiable reason, such as serious illness, the student failed to complete all requirements for the course. Failure to make up an incomplete during the succeeding semester will result in change from the grade of I to an F on the permanent record. The grade of I is not computed in the student's grade point average.

**AUDIT (AU)** — Courses may be taken for audit at the discretion of the course instructor. Registration and fee policies are the same as those for regular students. However, priority in registration will be given those registering in a course for credit.

**PASSING (P)** — Passing in a pass-fail course.

**FAILURE (NF)** — Failure in a pass-fail course.

## Grade Points

Semester grades are assigned grade points as follows:

- A — 4 grade points per unit earned
- B — 3 grade points per unit earned
- C — 2 grade points per unit earned
- D — 1 grade points per unit earned
- F — 0 grade points per unit earned
- WF — 0 grade points per unit earned

Thus, a three-unit course with a grade of A would earn 3 x 4 = 12 grade points. The total grade points accumulated by a student are divided by the total of units attempted (excluding W and I grades) and the result is known as the student's cumulative grade point average, or GPA. Each time a course is taken, both the units attempted and the grade points are included in computing the cumulative grade point average.

## **Scholastic Honors**

Any student who completes 12 or more units in one semester or phase and maintains a semester and cumulative GPA of 3.500 to 3.899 will be placed on honors.

Any student who completes 12 or more units in one semester or phase and maintains a semester and cumulative GPA of 3.900 or better will be placed on High Honors.

## **Unit Load Limitations**

The maximum class load for a beginning freshman is 17 units; 19 units for second semester freshmen. Students wishing to exceed these limitations may petition the Academic Council.

Entering students with lower than C average will be limited to 15 units. This will include those entering from high school and those transferring from another college.

Continuing students who have accumulated (a) 1 to 10 minus points will be limited to 15 units; (b) 11 or more minus points will have future academic requirements determined by Academic Council. These requirements will be stated in writing and the student must indicate his understanding of requirements and agree to comply.

## **Academic Probation**

All students who have attempted nine or more units at Cochise College and maintain a semester and a cumulative grade point average of 1.999 or lower will be placed on Academic Probation by the Academic Council.

## **Removal from Academic Probation**

A student will be returned to academic good standing when his cumulative grade point average is 2.000 or better.

## **Academic Suspension or Dismissal**

A student who has attempted nine or more units may be academically suspended from the College for one semester if his cumulative grade point average falls below 1.6 at the end of any semester.

A student, while on Academic Probation, may be academically suspended if his cumulative grade point average falls below 1.6.

All available factors having a bearing upon the academic record of the student will be evaluated by the Academic Council before academic suspension.

A student required to leave the College a second time for academic reasons will be dismissed.

Exceptions may be made by the Academic Council when evidence of significant academic improvement is made by the student during his period of academic probation; such students must continue to show improvement to remain in this special probationary status.

## **Credit for Transfer Students**

The following rules govern the admission of a student who has attended another college.

Courses for which the student has earned a grade of D or F will not be accepted for credit.

Students with a GPA below 2.000 may be admitted on academic probation.

Students academically dismissed from another college may not attend Cochise College for one full semester after said dismissal.

In determining academic standing at Cochise College, the GPA of a transfer student is computed on the basis of units attempted at Cochise College only and will not include units and grade points earned at another college.

## **Credit by Examination**

A student enrolled for credit may establish credit by examination for a maximum of 12 units during his coursework at Cochise College but may challenge only one course for credit by examination per regular semester. A student may challenge only those courses which carry transfer credit, in which a written examination is the primary evaluative device, and in which he has not had advanced work in the same area. Credit by examination units will be computed into the regular course load with corresponding fee and unit-load limitations. The student should obtain the application for credit by examination from the Division of Student Affairs, then secure permission from department involved. A student may not petition to challenge a course a second time. Some departments may have additional qualifications which must be met before a course may be challenged. Challengers in the Nursing Department will be required to pass a practical examination.



## **College Level Examination Program (CLEP)**

Credit may be granted to students who have taken one or more tests of the College Level Examination Program developed by the College Entrance Examination Board. To receive credit on the General Examinations, a student must have a standard score of 500 or above. On the Subject Examinations, the student must have a standard score of 50 or better.

Students may earn up to 30 units of college credit by taking the CLEP. Any interested person may contact the Division of Student Affairs.

## **U.S.A.F.I. and Other Military Service Schools**

Cochise College follows the credit recommendation of the American Council on Education for U.S.A.F.I.-Dantes and Military Service Schools. Credit for U.S.A.F.I.-Dantes courses will be granted if the student received a satisfactory or above, or if the score is in the 40th percentile or above.

Colleges differ on their policies related to credit allowed for credit by examination, CLEP, U.S.A.F.I.-Dantes and Military Service Schools. Credit granted by Cochise College does not obligate any other college or university nor guarantee its acceptance at another educational institution.

Students must complete at least one Cochise College course before credit will be granted for CLEP, U.S.A.F.I.-Dantes or Military Service courses. Credit allowed on any of these will not count toward the 15 resident hours required for an AA, AS, or AAS degree from Cochise College. A maximum of 30 units will be allowed for credit for non-traditional learning experiences.

## **Individual Studies**

Courses titled "Individual Studies" may be found for most subject areas in the section titled "Courses." This course, numbered 199-299, in all cases, is designated to accommodate particular needs of students capable of independent study. The number of units granted depends on the nature of the work undertaken. The transfer value depends also on the nature of the work and its acceptability by the institution to which the student transfers.

## **Grade Report**

Each student receives a grade report at completion of the semester. Final semester grades are recorded on the student's permanent record.

Grade reports of unmarried students under 18 years of age are mailed to the parents or guardian. Grade reports of other students are mailed to their home address.

## **Final Examinations**

Final examinations are given in most courses and students are personally responsible for taking all assigned final examinations as they are listed in the examination schedule. Final examinations normally will not be given in advance of the scheduled time.

## **Change of Grade**

A grade reported to the Division of Student Affairs may be changed only upon authorization of the faculty member issuing the grade.

## **Repeating Courses**

If a student earns a grade of D or F, he may repeat the course and receive a new grade; however, the listing of the original grade remains as part of the permanent record. The units of the original course are not counted for graduation or in computing the cumulative point average.

A student need not repeat a course which he has failed unless it is a prerequisite for another course or is a course required for graduation or transfer.

Repetition of high school courses is permitted only if required by the College.

A student may not repeat a course in which he has received a grade of C or better.

## **Change of Program**

Students are expected to arrange their academic schedule carefully and maintain this schedule throughout the semester. Necessary program changes are to be initiated with permission of the instructor of the courses affected by the program change.

Courses may not be added to a program after the end of the second week of classes. Part-time evening students may register the first evening the class meets without paying a late registration fee.

A student may drop a course at any time up through Friday of the ninth week of classes without penalty and the grade assigned will be W, Withdrew. Courses dropped after Friday of the ninth week will receive a grade of W or WF (Withdrew Failing) at the discretion of the instructor.

Audit courses may be taken for audit at the discretion of the course instructor. Students may change to audit with permission of instructors through Friday of the ninth week of the semester.

### **Withdrawal from College**

A student who withdraws from the College before the end of the semester must consult with his counselor in order to obtain proper dismissal. A student will receive a WF in all courses if he does not officially withdraw.

### **Transcripts**

A transcript is a copy of the student's permanent record which, upon the written request of the student, is available to the student, to another college or university or prospective employer.

Transcripts are forwarded by the Registrar's Office at the written request of the student. Transcripts to educational institutions will be sent directly by mail. Transcripts given directly to the student are marked "issued to student." The first transcript is issued without charge. Charges for additional transcripts are as follows: unofficial transcripts to student - \$.25 each; all official transcripts - \$1 each.

### **Transfer of Credit**

Students transferring to Cochise College from approved institutions of higher education ordinarily will be given credit, hour for hour, for work done in those institutions insofar as it applies to the requirements of the curriculum pursued at Cochise College. A grade of D, earned at another institution, will not be accepted.

Students who have registered in other colleges and universities shall not disregard their records in such institutions in order to make application for admission solely on the basis of their high school records. Failure to report previous college attendance at the time of registration shall be sufficient cause for cancellation of the student's enrollment, any credit earned, or both.

Students transferring from Cochise College to one of Arizona's state universities should observe the following:

Carefully follow the curriculum guide developed by Cochise College in co-operation with the universities for your major area.

In general, the universities will accept up to 64 units of community college courses.

Courses carrying a numerical designation of 0 through 99 will not transfer.

Courses in which a student makes less than a C are accepted for transfer only at the discretion of the universities and/or the particular college in the university.

The overall grade point average must be 2.000 (C) or better.

If particular problems concerning transfer are encountered, the student should contact the Division of Student Affairs at Cochise College.

### **Attendance Policy**

Attendance policies at Cochise College are based on the belief that maximum benefits can accrue to the student only if his attendance is regular and his assignments are prepared promptly and adequately. A student is expected to be in attendance at all times in classes, laboratories, and orientation assemblies unless there is a compelling reason for absence. Instructors set an attendance policy for each class and it is the student's responsibility to be aware of and to comply with these policies.

### **Veterans Satisfactory Progress**

Veterans who drop classes 30 days after the beginning of the term should notify the Office of Veterans Affairs of any extenuating circumstances. Failure to do so may result in VA requiring repayment of all monies received for that class or classes during the term.

Information concerning veteran's benefits, certification and the above policy may be obtained by contacting the Coordinator of Veteran's Affairs at Cochise College.

### **Registration For Physical Education**

The Governing Board endorses the philosophy of required physical education. In instituting this policy, the following requirements are set forth:

A full-time student shall be enrolled in physical education activity courses for a minimum of two semester credits. Exception is granted for full-time students at the Sierra Vista Center and at other centers throughout the county.

A student who is physically unqualified for participation in physical education as certified by a licensed physician (such certification by a physician must be renewed each semester) shall be exempt from physical education activity. Physically handicapped students will enroll in a personal health course or a special adaptive physical education course.

A student 24 years of age or older at the time of registration shall be exempt from physical education courses.

Honorably discharged servicemen with a minimum of two years of active duty, married men and women, and men and women who are heads of households are exempt from the requirement of two units of physical education.

### **Graduation Requirements**

Cochise College grants the degree of Associate of Arts, Associate of Science, and Associate of Applied Science degrees. Students should review the catalog section on Degrees and Programs, and consult with a counselor for specific requirements for each of these degrees.

### **Graduation Application**

Students planning to graduate must file a Graduation Application with the Division of Student Affairs. Applications will be available at registration. Applications must be filed by September 11, for fall graduation and by February 1, for spring graduation.

# Degrees and Programs

## University Parallel Programs

Cochise College offers the first two years of a four-year program for the student who wishes to extend his education to include a bachelor's (four year) degree. In addition he may remove any high school grade or subject deficiencies required for entrance to the four year college or university of his choice.

Students who plan to transfer to Arizona universities, or to other colleges and universities, should consult the specific catalog with the aid of their counselors to determine lower division requirements of junior standing. Catalogs of major universities and colleges are available in the Learning Resources Center and the Division of Student Affairs. The counseling staff, in co-operation with various schools and colleges within the three Arizona universities, have developed a *Transfer Curriculum Guide*. This publication provides curriculum transfer plans for most Bachelor's Degree programs. Curriculum plans for a variety of pre-professional transfer programs are located elsewhere in this section.

*The student who plans to graduate from Cochise College and wishes to obtain junior standing in another college or university has four requirements to fulfill:*

*He must clear up any entrance deficiencies in grades or subject matter if the senior college to which he expects to transfer requires it.*

*He must fulfill the general requirements of the senior college which are prescribed for all students.*

*He must fulfill his own pre-major requirements, i.e. the lower division requirements for his upper division major.*

*He must earn a cumulative grade point average of 2.0 or better.*

Under the provisions of the ROTC Vitalization Act of 1964, community college men and women are now eligible to immediately enter the Advanced ROTC Program when they transfer to a four-year college or university. Information relative to this program may be secured from the Division of Student Affairs.

## Occupational Programs

Occupational programs at Cochise College are designed for the student who wishes to gain employment skills. Each occupational program has been developed with the aid of business and industrial advisory committees to insure the student of quality instruction and to enhance his opportunities for successful employment.

Upon completion of curriculum requirements, the student will receive an Associate of Applied Science Degree or a Certificate of Completion. The Office of Career Placement will assist graduates in finding permanent full-time positions in fields of specialization.

Several four-year technical programs are offered at Arizona State University and Northern Arizona University. A large number of occupational programs at Cochise College will transfer to many of these university programs. For further information on specific transfer options consult a counselor, the Office of Career Placement, or the respective division chairman.

In addition to the established occupational programs listed above, the College will offer a variety of short-term, non-credit extension courses upon request of business, industry, or other interested groups. Several one-year certificate programs are also offered.

## Co-operative Education

Cochise College students enrolled in any College program may elect to participate in the Co-operative Education Program. This is a co-operative arrangement between the employer, the student and the College to provide part-time (or in some cases, full-time) job placement in training positions related to the student's career interest. The student's work is co-ordinated by college staff and the student will receive college credit for this job experience. This program is also adaptable for employed adults who are interested in gaining additional job skills for future advancement. Co-operative Education is not a course of study, but is the laboratory component for the various programs offered at Cochise College.

**Academic Skills**

The Academic Skills Department helps students improve reading, writing, and math skills. Students are placed in appropriate courses, according to placement tests given to all freshmen during registration. A course in study and test-taking skills, as well as a psychology course, are included in the counseling component of the department. Also students are advised about graduation requirements and possible careers; students are encouraged to learn in one-to-one tutoring sessions. Interested students should contact the Academic Skills Department before the beginning of the fall or spring semesters.

**Spanish Immersion Programs**

Each spring semester the College offers a Spanish Immersion Program that provides intensive day-long instruction to non-native speakers. The program is designed to provide a basic speaking-listening facility in the Spanish language. During the sixteen-week semester students attend classes, work with conversants and participate in language laboratory activities five hours daily each week. Students receive sixteen units of transferable credit upon successful completion of the program, equivalent to the first two years of College Spanish.

A seven-week summer Spanish Immersion Program is also offered, for which students receive eight units of college credit in Spanish.

**English Immersion Program**

The English Immersion Program offers a student whose first language is not English the basic language proficiencies needed for regular college courses. Grammar, reading, writing, conversation, listening comprehension and culture classes are offered 6 hours daily at the beginning, intermediate and advanced levels. Classroom instruction is complemented by extensive use of audiovisual materials, field trips, cultural activities, sports, International Club and a host family program.

**Suggested Programs**

Cochise College offers the Associate of Arts, Associate of Science, and Associate of Applied Science degrees with major emphasis in a number of academic areas. Requirements for specific academic programs are given in the program curriculum guide. Minimum degree requirements as specified below must be met by completing coursework numbered from 100 to 299.

**Associate of Arts Degree**

Minimum Requirements	Credit Hours
English 101 or equivalent	3
plus one other English course in 100 series	3
Social/Behavioral Science	6
Laboratory Science or Math	6-8
Humanities/Fine Arts	6
Physical Education	2
Major area courses	15
Electives	17-19
	<hr/> 60

**Associate of Science Degree**

Minimum Requirements	Credit Hours
English 101 or equivalent	3
plus one other English course in 100 series	3
Social/Behavioral Science	6
Laboratory Science	8
Humanities/Fine Arts	6
College Algebra	3
Physical Education	2
Major area courses	15
Electives	14
	<hr/> 60

**Associate of Applied Science Degree**

This degree is awarded to students who meet requirements as specified for various vocational and technical majors. Strong emphasis is placed on technical coursework as dictated by the requirements of business and industry.

A minimum of 60 credit hours of prescribed coursework is required. The respective program curriculum guide should be consulted for specific requirements.

**Certificate of Completion**

The Certificate of Completion is awarded to students who complete a specified course of study, credit or non-credit, but which does not meet specified requirements for the AA, AS, or AAS degrees.

### **A Note on Programs**

*The following listed programs are samples of curriculum available at the college. The student is advised to seek counseling in the Division of Student Affairs for advice on other programs tailored to the student's needs.*

### **Program Requirements**

A student is responsible for the requirements of the catalog that was or is in effect at the time of his first enrollment at Cochise College unless he or she wishes to change to the requirements of the latest catalog.

## **Agriculture**

### **Associate of Science Degree**

<b>Freshman</b>	<b>First Semester</b>	<b>Units</b>
Composition	EN 101	3
Zoology BS or Botany		4
Social/Behavioral or Humanities/Fine Arts		3
Physical Education		1
Introduction to Animal Disease Process	AG 103	3
Animal Industry	AG 208	3
Introduction to Agriculture	Ag 102	3
Livestock Judging	AG 242	3
Team Roping	AG 138	1
	<b>Second Semester</b>	<b>Units</b>
Composition	EN 102	3
Zoology or Botany		4
College Algebra	MA 120	3
Physical Ed. P. E.		1
Range Management	AG 105	3
Plant Science (Growth & Development)	AG 100	3
Horse Science & Management	AG 237	3
Principles of Veterinary Science	AG 101	3
Auxiliary Engine Operation & Repair	AG 209	3

<b>Sophomore</b>	<b>First Semester</b>	<b>Units</b>
Chemistry	CH 121	4
Social/Behavioral Sci or Humanities/Fine Arts		3
Animal Feeding	AG 230	3
Physics or Physical Geology		4
Agriculture Electives		3
Agricultural Welding	AG 210	2
Range Plants	AG 207	2
Livestock Production & Management	AG 243	3
Western Horsemanship	AG 139	1
	<b>Second Semester</b>	<b>Units</b>
Chemistry	CH 122	4
Written Communications & Reports	EN 108	3
Fundamentals of Speech	SE 102	3
Agriculture electives:		3
Economics in American Agri. or Economics	AG 211 EC 201	3
Advanced Agricultural Welding	AG 212	2
Agricultural Alloy & Repair Welding	AG 213	2
Animal Disease & Sanitation	AG 106	3
Fertilizers	AG 214	3
Individual Studies	AG 199	1-4

# Agriculture

## Associate of Applied Science Degree

<b>Freshman</b>	<b>First Semester</b>	<b>Units</b>
English EN 010 or 101		3
Biological Science BS 101, 111 or 131		4
Selected Electives		3
Agriculture Electives		6

### Recommended Electives

Intro to Agriculture	AG 102	3
Animal Husbandry	AG 208	3
Livestock Judging	AG 242	3
Intro to Animal Disease Process	AG 103	3
Team Roping	AG 135	1

	<b>Second Semester</b>	<b>Units</b>
English EN 101 or 102		3
Biological Science BS 102, 111, 132		4
Selected Electives		3
Agriculture Electives		6

### Recommended Electives

Plant Science (Growth & Development)	AG 100	3
Horse Science & Management	AG 237	3
Range Management	AG 105	3
Principles of Veterinary Science	AG 101	3
Auxiliary Engine Operation & Repair	AG 209	3

<b>Sophomore</b>	<b>First Semester</b>	<b>Units</b>
Mathematics MA 110		3
Chemistry CH 101 or 121		4
Selected Electives		3
Agriculture Electives		6

### **Recommended Electives**

Animal Feeding	AG 230	3
Agricultural Welding	AG 210	2
Range Plants	AG 207	3
Livestock Production & Management	AG 243	3
Western Horsemanship	AG 139	1

	<b>Second Semester</b>	<b>Units</b>
Fundamentals of Speech	SE 102	3
Selected Electives		3
Agricultural Electives		9

### **Recommended Electives**

Econ. in American Agri.	AG 211 or Econ 201	3
Advanced Agri. Welding	AG 212	2
Agricultural Alloy & Repair Welding	AG 213	2
Animal Disease & Sanitation	AG 106	3
Fertilizer	AG 214	3
Individual Studies	AG 199-299	1-4

### **Recommended Electives**

Written Communication & Reports	EN 109	3
Principles of Accounting	BU 101	3
Principles of Management	BU 143	3
Business Communications	BU 167	3

# **Anthropology**

## **Associate of Arts Degree**

### **Freshman**

	<b>First Semester</b>	<b>Units</b>
Composition	EN 101	3
Origin & Antiquity of Man	AN 101	3
Prehistoric Culture of North America	AN 185	3
Science or Mathematics		3-4
Physical Education	PE	1
Social/Behavioral Science		3

	<b>Second Semester</b>	<b>Units</b>
Composition	EN 102	3
Social/Behavioral Science		6
Development of Culture	AN 102	3
Historic Indian Tribes of North America	AN 186	3
Science or Mathematics		3-4
Physical Education	PE	1

### **Sophomore**

	<b>First Semester</b>	<b>Units</b>
Society and Culture	AN 125	3
Social/Behavioral Science		3-6
Anthropology	AN	3-6
Humanities/Fine Arts		3-4

	<b>Second Semester</b>	<b>Units</b>
Non-Literate Societies of the World	AN 226	3
Social/Behavioral Science		3
Anthropology	AN	3-6
Humanities/Fine Arts		3-4



# Art

## Associate of Arts Degree

### Freshman

	First Semester	Units
Composition	EN 101	3
Physical Education	PE	1
Survey of Western Civilization	HI 140	3
Introduction to Art	AR 101	3
Survey of World Art*	AR 107	3
Basic Design or Basic Drawing	AR 103 or AR 106	3

### Second Semester

Composition	EN 102	3
Physical Education	PE	1
Survey of Western Civilization	HI 141	3
Survey of World Art	AR 108*	3
Two-Dimensional Design	AR 230	3
Beginning Painting or Beginning Figure Drawing	AR 280 or AR 245	3

### Sophomore

	First Semester	Units
Laboratory Science or Math		3-4
Humanities	HU 205	4
Basic Design or Basic Drawing	AR 103 or AR 106	3
Three-Dimensional Design	AR 231	3
Ceramics	AR 270	3

### Second Semester

Laboratory Science or Math		3-4
Humanities	HU 206	4
Beginning Commercial Design	AR 265	3
Sculpture	AR 290	3
Beginning Painting or Beginning Figure Drawing	AR 280 or AR 245	3

\*Survey of World Art may not be used to satisfy Humanities requirements for art majors.

# AVIATION TECHNOLOGY

## Airframe and Powerplant

### Associate of Applied Science

Courses AT 110, AT 115, AT 120, AT 125, AT 130, EN 020, and EN 108 are the minimum requirements for an Associate of Applied Science Degree and to take the F.A.A. examinations for the Airframe - Powerplant Certificate. The minimum time to complete the course is approximately 15 months. Each phase is twelve weeks.

### Phase

Phase I General	AT 110	18
Phase II Basic Airframe	AT 115	17
Phase III Advanced Airframe	AT 120	17
Phase IV Basic Powerplant	AT 125	17
Phase V Advanced Powerplant	AT 130	17
Reading Fundamentals	EN 020	2
Written Communications & Reports	EN 108	3
		<u>91</u>

## Professional Pilot

Courses 101, 102, 103 and 204G and F are the minimum requirements for a degree and are usually completed in eleven months. Most students return for a third phase and complete 208, 220, 230, and 240G and F and any academic course requirements not met for the degree. Phases average twenty-two weeks. 101G and 103G are taken concurrently.

### PHASE I - Associate of Applied Science Degree

Stage One Commercial Pilot	AT 101G and F	6
Stage Two Commercial Pilot	AT 102G and F	6
Stage Three Commercial Pilot	AT 103G	3
Principles of Economics	EC 201	3
Accounting	BU 101	3
Composition I	EN 101	3
Principles of Marketing	BU 155	3
Lab Science		4
Physical Ed	PE	1

**Behavioral Management**

Personnel Management  
Labor Relations  
Business Electives

**Quantitative Management**

Finite Math  
Business Statistics I  
Business Statistics II  
Management Information Systems  
Business Elective

**General Business**

15 Units of Any Business Classes

**Women In Management**

Exploring Your Potential As A  
Manager  
Special Problems In Management  
Business Electives

**Recommended Electives**

Cooperative Education	CE 110
Principles of Economics	EC 201
Typing	
Management Information Systems	BU 282
Personnel Management	BU 123
Business Law II	BU 232

**MAJOR EMPHASIS**

**Consumer Education**

Introduction to Consumer  
Education  
Consumers and Their Health  
Consumers and Their Environ-  
ment  
Consumers and Their Money  
Consumers and Their Govern-  
ment  
Consumers and the Market-  
place

**Computer Science**

Introduction to Data Pro-  
cessing  
Computer Operations  
Programming-COBOL Level I  
Programming-COBOL Level II  
Programming-Fortran  
Management Information  
Systems

**Business Education**

**Associate of Science**

<b>Freshman</b>	<b>First Semester</b>	<b>Units</b>
Composition I	EN 101	3
Lab Science		4
Elementary Psychology	PY 101	3
Elementary Shorthand	BU 110	
or		
Intermediate Shorthand	BU 111	3
Elementary Typing	BU 106	
or		
Intermediate Typing	BU 108	3
Physical Education		1
		<u>17</u>

	<b>Second Semester</b>	<b>Units</b>
Composition II	EN 102	3
Lab Science		4
Intermediate Algebra	MA 110	
or		
College Algebra	MA 120	3
Intermediate Shorthand	BU 111	
or		
Advanced Shorthand	BU 211	3
Intermediate Typing	BU 108	
or		
Advanced Typing	BU 208	3
Physical Education		1
		<u>17</u>

<b>Sophomore</b>	<b>First Semester</b>	<b>Units</b>
Humanities/Fine Arts		3-4
American National Government	PS 102	3
Principles of Economics	EC 201	3
U.S. History	HI 110	3
Principles of Accounting	BU 101	3
		<u>15-16</u>

	<b>Second Semester</b>	<b>Units</b>
Humanities/Fine Arts		3-4
U.S History	HI 110	
or		
World History		3
Principles of Economics	EN 202	3
Speech	SP 102	3
Introduction to Data Processing	BU 122	3
Principles of Accounting	BU 102	3
		<u>18-19</u>

**Behavioral Management**

Personnel Management  
Labor Relations  
Business Electives

**Quantitative Management**

Finite Math  
Business Statistics I  
Business Statistics II  
Management Information Systems  
Business Elective

**General Business**

15 Units of Any Business Classes

**Women in Management**

Exploring Your Potential As A  
Manager  
Special Problems In Management  
Business Electives

**Recommended Electives**

Cooperative Education	CE 110
Principles of Economics	EC 201
Typing	
Management Information Systems	BU 282
Personnel Management	BU 123
Business Law II	BU 232

**MAJOR EMPHASIS**

**Consumer Education**

Introduction to Consumer  
Education  
Consumers and Their Health  
Consumers and Their Environ-  
ment  
Consumers and Their Money  
Consumers and Their Govern-  
ment  
Consumers and the Market-  
place

**Computer Science**

Introduction to Data Pro-  
cessing  
Computer Operations  
Programming-COBOL Level I  
Programming-COBOL Level II  
Programming-Fortran  
Management Information  
Systems

**Business Education**

**Associate of Science**

Freshman	First Semester	Units
Composition I	EN 101	3
Lab Science		4
Elementary Psychology	PY 101	3
Elementary Shorthand	BU 110	
or		
Intermediate Shorthand	BU 111	3
Elementary Typing	BU 106	
or		
Intermediate Typing	BU 108	3
Physical Education		1
		17

	Second Semester	Units
Composition II	EN 102	3
Lab Science		4
Intermediate Algebra	MA 110	
or		
College Algebra	MA 120	3
Intermediate Shorthand	BU 111	
or		
Advanced Shorthand	BU 211	3
Intermediate Typing	BU 108	
or		
Advanced Typing	BU 208	3
Physical Education		1
		17

Sophomore	First Semester	Units
Humanities/Fine Arts		3-4
American National Government	PS 102	3
Principles of Economics	EC 201	3
U.S. History	HI 110	3
Principles of Accounting	BU 101	3
		15-16

	Second Semester	Units
Humanities/Fine Arts		3-4
U.S History	HI 110	
or		
World History		3
Principles of Economics	EN 202	3
Speech	SP 102	3
Introduction to Data Processing	BU 122	3
Principles of Accounting	BU 102	3
		18-19

# Clerk-Typist

(General, Medical, Legal, and Bilingual)

One-Year Certificate Program

Freshman	First Semester	Units
Typewriting	BU 106, 108, 208	3
Grammar Usage & Punctuation	EN 111	3
Business Math	BU 104	3
General Office Procedures	BU 161	3
Records Management	BU 217	3
Personnel Management	BU 123	3
		<u>18</u>

	Second Semester	Units
Typewriting	BU 107, 108, 208, 209	3
Business Communications	BU 167	3
Bookkeeping & Financial Management	BU 146	3
or		
Principles of Accounting	BU 101	3
Clerical Practice*	BU 162	3
Calculating Machines	BU 118	3
Elective		3
		<u>18</u>

## Recommended Electives:

	Units
Medical Terminology for Medical Clerk-Typist	BU 253 3
Business Law for Legal Clerk-Typist	BU 231 3
Three hours of Spanish for Bilingual Clerk-Typist	BU 275 3
Bilingual Typing for Bilingual Clerk-Typist	BU 107 3

\* This course will be individualized for the general, medical, legal, and bilingual clerk-typist

# Executive Secretary

(General, Legal, and Bilingual)

Associate of Applied Science Degree

Freshman	First Semester	Units
Typewriting ✓	BU 106 or 108	3
English ✓	EN 101	3
Shorthand ✓	BU 110 or 111	3
Business Math ✓	BU 104	3
Survey of American Business ✓	BU 109	3
Physical Education ✓	PE	1
		<u>16</u>

	Second Semester	Units
Typewriting ✓	BU 108 or 208	3
Business Communications ✓	BU 167	3
Shorthand ✓	BU 111 or 211	3
Bookkeeping & Financial Management ✓	BU 146	3
or		
Principles of Accounting	BU 101	3
Personnel Management ✓	BU 123	1
Physical Education ✓	PE	1
		<u>16</u>

## Sophomore

First Semester	Units
Typewriting ✓	BU 208 or 209 3
Shorthand ✓	BU 211 3
Records Management ✓	BU 217 3
Business Law	BU 231 3
Secretarial Office Procedures ✓	BU 264 3
Grammar Usage and Punctuation	EN 111 3
	<u>18</u>

Second Semester	Units
Typewriting ✓	BU 209 3
Shorthand ✓	BU 212 3
Secretarial Practice ✓	BU 265 3
Calculating Machines ✓	BU 118 3
Electives	3-6
	<u>15-18</u>

## Recommended Electives:

Six hours of Spanish for Bilingual Secretary	SP 275, SP 276	6
Bilingual Typing for Bilingual Secretary	BU 107	3
Introduction to Data Processing	BU 172	3
Key punch	BU 170	2
Principles of Accounting	BU 101 or 102	3

\* This course will be individualized for the general, legal, and bilingual secretary.

# Medical Secretary

Associate of Applied Science Degree

Freshman	First Semester	Units
Typewriting	BU 106 or 108	3
Shorthand	BU 110 or 111	3
Grammar Usage & Punctuation	EN 111	3
Human Anatomy & Physiology	BS 151	4
Business Math	BU 104	3
Physical Education	PE	1
		17

	Second Semester	Units
Typewriting	BU 108 or 208	3
Shorthand	BU 111 or 211	3
Human Anatomy & Physiology	BS 152	4
Bookkeeping & Financial Management or	BU 146	
Principles of Accounting	BU 101	3
Medical Terminology	BU 253	3
Physical Education	PE	1
		17

Sophomore	First Semester	Units
Typewriting	BU 208 or 209	3
Shorthand	BU 211	3
Records Management	BU 217	
Secretarial Office Procedures	BU 264	3
Personnel Management	BU 123	3
Elective		3
		18

	Second Semester	Units
Typewriting	BU 209	3
Shorthand	BU 212	3
Secretarial Practice*	BU 265	3
Business Communications	BU 167	3
Calculating Machines	BU 118	3
Elective		3
		18

In addition to the above, the Medical Secretary Degree requires an internship to be done in the summer following completion of course work (16 units.)

\*This course will be individualized for the Medical Secretary.

# Receptionist

(General, Medical, Legal, and Bilingual)

One-Year Certificate Program

Freshman	First Semester	Units
Typewriting	BU 106, 108 or 208	3
Grammar Usage & Punctuation	EN 111	3
Business Math	BU 104	3
General Office Procedures	BU 161	3
Personnel Management	BU 123	3
Records Management	BU 217	3
		18

	Second Semester	Units
Typewriting	BU 107, 108, 208 or 209	3
Business Communications	BU 167	3
Bookkeeping & Financial Management or	BU 146	3
Principles of Accounting	BU 101 (3)	
Clerical Practice*	BU 162	3
Calculating Machines	BU 118	3
Elective		3
		18

Recommended Electives:		
Medical Terminology for the Medical Receptionist	BU 253	3
Business Law for the Legal Receptionist	BU 231	3
Three hours of Spanish for the Bilingual Receptionist	SP 275	3
Bilingual Typing for the Bilingual Receptionist	BU 107	3
Keypunch	BU 170	2

\* This course will be individualized for the general, medical, legal, and bilingual receptionist.

## Certificate of Completion

# Chemistry

## Associate of Science

### Freshman

	First Semester	Units
Composition	EN 101	3
General Chemistry	CH 121	4
College Algebra/Trig.	MA 144 or MA 120 and MA 124	5
General Physics	PH 120	4
Physical Education	PE	1

### Second Semester

Composition	EN 102	3
General Chemistry	CH 122	4
Analytic Geometry/Calculus	MA 161	5
General Physics	PH 121	4
Physical Education	PE	1

### Sophomore

	First Semester	Units
Organic Chemistry	CH 240	4
Analytic Geometry/Calculus	MA 263	5
Analytical Chemistry	CH 230	4
Humanities/Fine Arts		3-4

### Second Semester

Organic Chemistry	CH 241	4
Analytic Geometry/Calculus	MA 263	3
Social Science		6
Humanities/Fine Arts		3-4

# Criminal Justice

## Associate of Applied Science

### Freshman

	First Semester	Units
Intro. to Police Science	CJ 100	3
Criminal Law I	C 200	3
Police Patrol Procedures	CJ 122	3
Rules of Evidence	CJ 227	3
Composition	EN 101	3

### Second Semester

Intro. to Criminal Justice System	CJ 121	3
Criminal Law II	CJ 201	3
Juvenile Procedure	CJ 230	3
Written Communications & Reports	EN 109	3
Criminal Investigation	CJ 238	3

### Sophomore

	First Semester	Units
Police Community Relations	CJ 240	3
Soc/Behavioral Science		3
PE		1
Emergency Medical Training	HT 174	6
Accidents, Citations, Disorders	CJ 252	3

### Second Semester

Psychology in Law Enforcement	CJ 254	3
Physical Evidence II	CJ 236	3
PE		1
Electives		9

# Criminal Justice

## Associate of Science

<b>Freshman</b>	<b>First Semester</b>	<b>Units</b>
Intro to Police Science	CJ 100	3
Criminal Law I	CJ 200	3
Rules of Evidence	CJ 227	3
Juvenile Procedures	CJ 230	3
English Comp I	EN 101	3
PE		1

	<b>Second Semester</b>	<b>Units</b>
Intro to the Criminal Justice System	CJ 121	3
Criminal Law II	CJ 201	3
Criminal Investigation	CJ 238	3
Written Communications & Reports	EN 109	3
College Algebra	MA 120	3
PE		1

<b>Sophomore</b>	<b>First Semester</b>	<b>Units</b>
Police Community Relations	CJ 240	3
Accidents, Citations, Disorders	CJ 252	3
Humanities/Fine Arts		3
Social/Behavioral Science		3
General Biology	BS 101	4

	<b>Second Semester</b>	<b>Units</b>
Psychology in Law Enforcement	CJ 254	3
Social/Behavioral Science		3
Electives		3
Humanities/Fine Arts		4

# Dental Assisting Technology

(SARAHHELP)

\*Associate in Science

\*\*Certificate Program

	<b>First Semester</b>	<b>Units</b>
Composition	EN 101	3
Elementary Psychology	PY 101	3
Elementary Algebra or	MA 020	
Plane Geometry (depends on level)	MA 030	
or		
Intermediate Algebra	MA 110	3
Anatomy & Physiology	BS 121	4
Typing		3
	<b>Second Semester</b>	<b>Units</b>
Composition	EN 102	3
Elementary Psychology	PY 102	3
Plane Geometry	MA 030	
or		
Inter. Algebra (depends on level)	MA 110	
or		
College Algebra	MA 120	3
Anatomy & Physiology	BS 121	4
Fine Arts Elective		3

Remaining portion of Health Technology Program completed at Pima College.

\*Students interested in this program should contact Cochise College Admissions Officer for special procedures to enroll in a SARAHHELP Program. Acceptance to SARAHHELP Programs are contingent upon acceptance at Pima College as well as Cochise College.

\*\*For the Certificate Program, students should apply directly to Pima College.

# Drafting Technology

## Associate of Science

<b>Freshman</b>	<b>First Semester</b>	<b>Units</b>
Composition	EN 101	3
Technical Graphics I	DT 112	3
Spatial Relationships	DT 120	3
Intermediate Algebra	MA 110	3
Manufacturing Materials and Processes I	GT 105	3
Electives: Humanities/Fine Arts		3

	<b>Second Semester</b>	<b>Units</b>
Composition	EN 102	3
Technical Graphics II	DT 113	3
Electronics Drafting	DT 130	3
College Algebra	MA 120	3
Manufacturing materials and Processes II	GT 106	3
Electives: Humanities/Fine Arts		3

<b>Sophomore</b>	<b>First Semester</b>	<b>Units</b>
Drafting for Manufacturing	DT 200	4
Topographical Design and Drafting	DT 210	4
Lab Science		4
Survey of Western Civilization	HI 140	3

	<b>Second Semester</b>	<b>Units</b>
Electro Mech. Design	DT 230	3
Construction Drafting	DT 220	3
Tool Design	DT 240	4
Survey of West. Civilization	HI 141	3
Lab Science		4

# Drafting Technology

## Associate of Applied Science

<b>Freshman</b>	<b>First Semester</b>	<b>Units</b>
Tech. Graphics I	DT 112	3
Spatial Relationships	DT 120	3
Technical Math I	GT 100	3
Manufacturing Materials and Processes I	GT 105	3
Composition	EN 101	3

	<b>Second Semester</b>	<b>Units</b>
Tech. Graphics II	DT 113	3
Electronics Drafting	DT 130	3
Tech. Math II	GT 101	3
Manufacturing Materials and Processes II	GT 106	3
Composition	EN 102	3

<b>Sophomore</b>	<b>First Semester</b>	<b>Units</b>
Drafting for Manufact.	DT 200	4
Topographical Design and Drafting	DT 210	4
Electives: General Education		6

	<b>Second Semester</b>	<b>Units</b>
Electro Mechanical Design	DT 230	3
Construction Draft.	DT 220	3
Tool Design	DT 240	4
Electives: General Education		



# Electronics Technology

Associate of Science Degree

<b>Freshman</b>	<b>First Semester</b>	<b>Units</b>
Composition	EN 101	3
College Algebra	MA 120	3
General Physics	PH 120	4
Intro. to D.C. Circuits	ET 105*	3
Intro. to A.C. Circuits	ET 106	4

	<b>Second Semester</b>	<b>Units</b>
Composition	EN 102	3
Plane Trigonometry	MA 124	3
General Physics	PH 121	4
Semiconductors & Trans.	ET 122	4
Electronic Circuits & Systems	ET 125	5

<b>Sophomore</b>	<b>First Semester</b>	<b>Units</b>
Social/Behavioral Science		3
Pulse Circuits	ET 231	4
Digital Circuits	ET 233	4
Modern Elect. Devices	ET 243	4
Humanities/Fine Arts		3
Physical Education	PE	1

	<b>Second Semester</b>	<b>Units</b>
Social/Behavioral Science		3
Physical Education	PE	1
Analytical Geometry W/Calculus	MA 161	5
Humanities/Fine Arts		3
Microprocessors & Microcomputers	ET 265	4

\* All electronic classes taught only in semester indicated and in sequence.

# Electronics Technology

Associate of Applied Science

<b>Freshman</b>	<b>Fall Semester</b>	<b>Units</b>
Composition	EN 101	3
Intro. to DC Circuits	ET 105*	3
Intro. to AC Circuits	ET 106	4
Math for Electronics or Math 110	ET 110	3
Electives		3

	<b>Second Semester</b>	<b>Units</b>
Adv. Math for Electronics	ET 120	3
Semiconductors and transistors	ET 122	4
Electronic Circuits	ET 125	5
Electives		3

<b>Sophomore</b>	<b>First Semester</b>	<b>Units</b>
Pulse Circuits	ET 231	4
Digital Circuits and Systems	ET 233	4
Modern Electronic Devices	ET 243	4
Communications Electronics	ET 245	4

	<b>Second Semester</b>	<b>Units</b>
Communications Elect. II	ET 247	4
Avionics	ET 260	4
Microprocessors and Microcomputers	ET 265	4
Electives		3

\* All electronic classes taught only in semester indicated and in sequence.

# English

## Associate of Arts

<b>Freshman</b>	<b>First Semester</b>	<b>Units</b>
Composition*	EN 101	3
Social Science**		3
Science/Math		3-4
Foreign Language***		4
PE elective		1

	<b>Second Semester</b>	
Composition	EN 102	3
Humanities/Fine Arts****		3-4
Social Science		3
Foreign Language		4
PE		1

<b>Sophomore</b>	<b>First Semester</b>	
Science/Math		3-4
Humanities/Fine Arts		3-4
Social Science		3
Foreign Language		4
Speech (if plan to teach) or elective		3

	<b>Second Semester</b>	
Science/Math		3-4
Humanities/Fine Arts		3-4
Social Science		3
Foreign Language		4

\*Students who have advanced placement in English should take EN 102 and 103.

\*\*Students planning to teach need PY 101, HI 110 or 111, and PS 167 for state certification. These courses will satisfy the Social Science elective requirement.

\*\*\*Students with the 16 unit proficiency may substitute electives.

\*\*\*\*Literature can be used to help satisfy HU/FA elective requirement.

# Fire Science Technology

## Associate of Applied Science

<b>Freshman</b>	<b>First Semester</b>	<b>Units</b>
Intro to Fire Science	FS 101	3
Fire Operations I	FS 110	3
Elementary Algebra	MA 020	3
Intro to Chemistry	CH 101	4
Composition	EN 101	3

	<b>Second Semester</b>	<b>Units</b>
Fund. of Fire Prevention	FS 106	3
Fire Operations II	FS 111	3
Hazardous Materials I	FS 150	3
Intro to Physics	PH 101	4
Composition	EN 102	3

<b>Sophomore</b>	<b>First Semester</b>	<b>Units</b>
Fire Service Hydraulics	FS 120	3
Hazardous Materials II	FS 160	3
Fire Apparatus and Equip.	FS 200	3
Emergency Medical Training	HT 174	6

	<b>Second Semester</b>	<b>Units</b>
Intro to Fire Suppression	FS 130	3
Rescue Practices	FS 220	3
Fire Fighting Tactics & Strategy	FS 240	3
Fire Investigations	FS 260	3
Occupational Safety and Health Act of 1971 (OSHA)	BU 151	3
Electives		3-4

<b>Recommended Electives:</b>		<b>Units</b>
Personnel Management	BU 123	3
Elementary Psychology	PY 101	3
Fundamentals of Speech	SE 102	3
American National Government	PS 120	3
Humanities	HU 205	4
Technical Graphics	DT 113	3
Co-op Education	CE 110/120	1-16
Construction Drafting	DT 220	4
Blueprint Interpretation and Basic Drafting	DT 100	4
Principles of Management	BU 143	3

# Health Education (AHELP-U. of A.)

## Associate of Science

For specific information, contact your counselor.

<b>Freshmen</b>	<b>First Semester</b>	<b>Units</b>
Composition	EN 101	3
General Chemistry	CH 121	4
Elem. Psychology	PY 101	3
History	HI 110 or 111	3

	<b>Second Semester</b>	
English	EN 102	3
General Chemistry	CH 122	4
Psychology	PY 102	3
Emergency Med. Training or	HT 174	6
First Aid & Safety	HE 170	3
College Algebra	MA 120	3

<b>Sophomore</b>	<b>First Semester</b>	<b>Units</b>
Intro. to Health Care	HT 173	3
Natl. & Ariz. Constitution	PS 167	3
Human Anat. & Phys.	BS 151	4
Humanities	HU 205	4

	<b>Second Semester</b>	
Humanities	HU 205 (or options)	4
Personal Health	HE 142	3
Human Anat. & Phys.	BS 152	4

\* Additional courses to be taken — see your counselor for details.

# History

## Associate of Arts

<b>Freshman</b>	<b>First Semester</b>	<b>Units</b>
Composition	EN 101	3
Elective: Science/Math		3-6
U.S. History to 1865	HI 110	3
Elective	PE	1
Elementary Spanish	SP 101	4

	<b>Second Semester</b>	<b>Units</b>
Composition	EN 102	3
Elective: Science/Math		3-6
U.S. History from 1865	HI 111	3
Elementary Spanish (or higher)	SP 102	4
Elective	PE	1
Elective: Social/Behavioral Science		3

<b>Sophomore</b>	<b>First Semester</b>	<b>Units</b>
Intermediate Spanish (or higher)	SP 201	4
Elective: Humanities/Fine Arts		3-4
Survey of West. Civilization	HI 140	3
Elective: Social/Behavioral Science		3
History of Soviet Union	HI 160	3

	<b>Second Semester</b>	<b>Units</b>
Intermediate Spanish (or higher)	SP 202	4
Elective: Humanities/Fine Arts		3-4
Survey of West. Civilization	HI 141	3
American National Government	PS 120	3
Elective: Social/Behavioral Science		3

# Journalism

## Associate of Arts

<b>Freshman</b>	<b>First Semester</b>	<b>Units</b>
Composition	EN 101	3
Elective: Physical Education	PE	1
Elective: Foreign Language		4
Elective: Lab Science or Math		3-4
Elective: Social/Behavioral Science		3

	<b>Second Semester</b>	<b>Units</b>
Composition	EN 102	3
Elective: Physical Education	PE	1
Elective: Foreign Language		4
Elective: Lab Science or Math		3-4
Mass Communications	JR 101	3
Elective: Social/Behavioral Science		3

<b>Sophomore</b>	<b>First Semester</b>	<b>Units</b>
Critical Reading And Writing	EN 106	3
Elective: Foreign Language		4
Basic Reporting	JR 102	3
Humanities/Fine Arts		3-4
Elective: Social/Behavioral Science		3

	<b>Second Semester</b>	<b>Units</b>
Intermediate Reporting	JR 103	3
Elective: Foreign Language		4
Creative Writing	EN 107	3
Humanities/Fine Arts		3-4
Elective: Social/Behavioral Science		3

# Liberal Arts

## Associate of Arts

<b>Freshman</b>	<b>First Semester</b>	<b>Units</b>
Composition	EN 101	3
General Biology	BS 101	4
Elective: Foreign Language		4
Intermediate Algebra	MA 110	3
Psychology	PY 101	3
Physical Education	PE	1

	<b>Second Semester</b>	<b>Units</b>
Composition	EN 102	3
General Biology	BS 102	4
Elective: Foreign Language		4
College Algebra	MA 120	3
Psychology	PY 102	3
Physical Education	PE	1

<b>Sophomore</b>	<b>First Semester</b>	<b>Units</b>
Elective: Lab Science		4
Elective: Humanities/Fine Arts		4
Elective: Literature or Language Studies		3
Elective: Literature; American or British		3
Elective: Social Behavioral Science		3

	<b>Second Semester</b>	<b>Units</b>
Elective: Lab Science		4
Elective: Humanities/Fine Arts		4
Elective: Foreign Language		4
Elective: Literature; American or British		3
Elective: Social/Behavioral Science		3

*Students interested in getting a Bachelor of Arts with the University of Arizona may take up to 72 units with Cochise College and complete the Bachelor program at the U. of A. Sierra Vista Center.*

# Medical Technology (AHELP-U. of A.)

## Associate of Science

For specific information, contact your counselor.

<b>Freshmen</b>	<b>First Semester</b>	<b>Units</b>
English	EN 101	3
General Chem.	CH 121	4
Social Science		3
College Algebra	MA 120	3
Intro. to Health Care	HT 173	3
*		

	<b>Second Semester</b>	
English	EN 102	3
General Chemistry	CH 122	4
Social Science		3
Plane Trig.	MA 124	3
Microbiology	BS 220	4
Humanities	HU 205	4
*		

<b>Sophomore</b>	<b>First Semester</b>	
Human Anat. & Phys.	BS 151	4
Organic Chemistry	CH 240	4
Social Science		3
General Physics	PH 120	4
*		

	<b>Second Semester</b>	
Human Anat. & Phys.	BS 152	4
Organic Chemistry	CH 241	4
Social Science		3
General Physics	PH 121	4

\* Additional courses to be taken — see your counselor for details.

# Nursing

## Nurse Assistant, Practical Nurse, Associate Degree Nurse

Cochise College offers an open curriculum nursing program. The ladder concept permits students to enter or exit from the program based upon their specific needs. Grades of C or better are required in all nursing and general education courses.

The Nursing program prepares men and women to become Nurse Assistants, Licensed Practical Nurses or Registered Nurses. Students are prepared to perform those functions commonly associated with bedside nursing. Technical nursing skills are taught in the classroom and related clinical areas such as hospitals, clinics, public health agencies, doctors offices and schools. In addition, general education courses are provided for all students.

**Nurse Assistants:** Qualified nurse assistants are in constant need to function as members of the hospital or community health team. Primary functions of nurse assistants are to care for sub-acutely ill patients and to assist other members of the health team. This is a one semester program.

**Practical Nurses:** Completion of the first two semesters of the Nursing curriculum qualifies men and women to write the State Board Test Pool Examination for Licensed Practical Nurses. LPN's function at a skilled level, in the hospital or community under the supervision of a Registered Nurse or physician. Practical nurses give basic nursing care and assists other members of the health team.

**Associate Degree Nurses:** Completion of the four semester nursing curriculum qualifies men and women to write the State Board Test Pool Examination for Registered Nurses. RN's perform in the hospital or community as primary or secondary health care providers. The Associate Degree nurse gives scientific and comprehensive nursing care and assists other members of the health team.

# Nursing

<b>Freshman</b>	<b>First Semester</b>	<b>Units</b>
General Education Requirements		7
Human Anatomy and Physiology	BS 151	4
Composition	EN 101	3
Nursing I	NS 122	10

After satisfactorily completing Nursing I, each student will receive a certificate as a Nurse Assistant.

	<b>Second Semester</b>	<b>Units</b>
General Education Requirements		7
Human Anatomy and Physiology	BS 152	4
Controlled Electives: Social Sciences, Humanities/Fine Arts, or Communications		3
Nursing II	NS 123	10
Drugs, Dosages and Calculations	NS 124	2

Student may apply for licensure as a Practical Nurse

<b>Sophomore</b>	<b>First Semester</b>	<b>Units</b>
General Education Requirements		10
Elementary Psychology	PY 101	3
Essentials of Chemistry	CH 110	4
Anthropology or Sociology	AN 125 or SO 101	
Nursing III	NS 232	8

	<b>Second Semester</b>	<b>Units</b>
General Education Requirements		7
Microbiology	BS 220	4
Controlled Electives Social Sciences, Humanities/Fine Arts, or Communications		3
Nursing IV	NS 233	8
Trends and Leadership	NS 234	2

Student is eligible to apply for State Board examination to become a Registered Nurse.

# Optthalmic Dispensing Technology (SARHELP)

**\*Associate of Science**

	<b>First Semester</b>	<b>Units</b>
Introduction to Health Care	HT 173	3
Composition	EN 101	3
Social Science elective one of the following: PY 101, or SO 101 or PY 103		
Elementary Algebra	MA 020	3
General Physics	PH 120	4

	<b>Second Semester</b>	<b>Units</b>
Composition	EN 102	3
Intermediate Algebra	MA 110	3
Principles of Management	BU 143	3
General Physics	PH 121	4
Business or Sales elective one of the following: BU 144, 145	BU	3

Remaining portion of this Health Technology Program completed at Pima College.

\*Students interested in this program should contact Cochise College Admissions Officer for special procedures to enroll in SARHELP Program. Acceptance to SARHELP Programs are contingent upon acceptance at Pima College as well as Cochise College.

# Physical Education

## Associate of Arts

Freshman	First Semester	Units
Composition	EN 101	3
Orientation to Phy. Ed.	PE 155	3
U.S. History	HI 110 or 111	3
Physical Education	PE	1-1
Orientation to Rec.	PE 171	2

	Second Semester	Units
Composition	EN 102	3
Psychology	PY 101 or 103	3
Elective: Social/Behavioral Science		3
Physical Education	PE	1-1
Fund. of Speech	SE 102	3
Sports Officiating	PE 190	3

Sophomore	First Semester	Units
Anatomy & Physiology	BS 151	4
Elective: Humanities/Fine Arts		3-4
Elem. School PE	PE 189	3
Activity	PE	1-1
National & Ariz. Const.	PS 167	3

	Second Semester	Units
Anatomy & Physiology	BS 152	4
Elective: Humanities/Fine Arts		3-4
Physical Education	PE	1-1
Elective: Social/Behavioral Science		3
Personal Health	HE 142	3

# \*Pre-Dentistry

## Associate of Science

Freshman	First Semester	Units
Elective: Physical Education	PE	1
Composition	EN 101	3
College Algebra	MA 120	3
General Chemistry	CH 121	4
General Physics	PH 120	4
Social/Behavioral Science		3

	Second Semester	Units
Elective: Physical Education	PE	1
Composition	EN 102	3
Trigonometry	MA 124	3
General Chemistry	CH 122	4
General Intro to Physics	PH 121	4
Social/Behavioral Science		3

Sophomore	First Semester	Units
Organic Chemistry	CH 240	4
Anatomy/Physiology	BS 131	4
Humanities or Equivalent	HU 205	3-4
Elective:		3

	Second Semester	Units
Organic Chemistry	CH 241	4
Anatomy/Physiology	BS 132	4
Humanities or Equivalent	HU 206	3-4
Elective:		3

\*Check with Office of Student Affairs for information WICHE scholarship.

# Pre-Engineering

## Associate of Science

<b>Freshmen</b>	<b>First Semester</b>	<b>Units</b>
Composition	EN 101	3
College Algebra/Trig.	MA 144 or MA 120 and MA 124	5-6
General Chemistry	CH 121	4
Spatial Relations	DT 120 or 112	3
Social/Behavioral Science		3
Physical Education		1

	<b>Second Semester</b>	
Composition	EN 102	3
Analytical Geom/Calculus	MA 161	5
General Chemistry	CH 122	4
Humanities/Fine Arts		3-4
Principles of Economics	EC 201	3
Physical Education		1

<b>Sophomore</b>	<b>First Semester</b>	
Analytical Geom/Calculus	MA 162	5
Physics with Calculus	PH 230	4
Social/Behavioral Science		3
Humanities/Fine Arts		3-4
Programming Fortran	BU 174	3

	<b>Second Semester</b>	
Analytical Geom/Calculus	MA 263	3
Physics with Calculus	PH 231	4
Humanities/Fine Arts		3
Social/Behavioral Science		3
Electives		6

Consult your counselor as to transferability-differences exist depending upon 4 year university requirements.

# Pre-Forestry

## Associate of Science

<b>Freshman</b>	<b>First Semester</b>	<b>Units</b>
Composition	EN 101	3
Physical Education	PE	1
College Algebra	MA 120	3
General Chemistry	CH 121	4
Fund. of Speech	SE 102	3
Social/Behavioral Science		3

	<b>Second Semester</b>	<b>Units</b>
Composition	EN 102	3
Physical Education	PE	1
Trigonometry	MA 124	4
General Chemistry	CH 122	3
General Botany	BS 111	4
Social/Behavioral Science		3

<b>Sophomore</b>	<b>First Semester</b>	<b>Units</b>
Principles of Economics	EC 201	3
General Zoology	BS 131	4
Analytical Geom w/Calculus	MA 161	5
Business Statistics	BU 219	3
Physical Geology	GY 151	4

	<b>Second Semester</b>	<b>Units</b>
Principles of Economics	EC 202	3
General Zoology	BS 132	4
Micro Biology	BS 220	4
Humanities/Fine Arts		6-7



# Pre-Law

## Associate of Arts

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 it's own requirements for grade point average.

### Suggested Courses

<b>Freshman</b>	<b>First Semester</b>	<b>Units</b>
Composition	EN 101	3
Elective: Science/Math		3-4
Foreign Language		4
Elective: Social/Behavioral Science		3
American Natl. Govt.	PS 120	3
Physical Ed.	PE	1
	<b>Second Semester</b>	<b>Units</b>
Composition	EN 102	3
Elective: Science/Math		3-4
Foreign Language		4
Elective: Social/Behavioral Science		3
Intro. to Soc.	SO 101	3
Physical Ed.	PE	1
	<b>Second Semester</b>	<b>Units</b>
Prin. of Accounting	BU 101	3
Prin. of Econom.	EC 201	3
Elective: Humanities/Fine Arts		3-4
Foreign Language		4
Fund. of Speech	SE 102	3
	<b>Second Semester</b>	<b>Units</b>
Prin. of Accounting	BU 102	3
Principles of Economics	EC 202	3
Elective: Humanities/Fine Arts		3-4
Foreign Language		4
Elective:		3

# Pre-Med

## Associate of Science

<b>Freshman</b>	<b>First Semester</b>	<b>Units</b>
Composition	EN 101	3
Physical Education	PE	1
General Chemistry	CH 121	4
General Zoology	BS 131	4
College Algebra	MA 120	3
	<b>Second Semester</b>	<b>Units</b>
Composition	EN 102	3
Physical Education	PE	1
General Chemistry	CH 122	4
General Zoology	BS 132	4
Plane Trigonometry	MA 124	3
	<b>First Semester</b>	<b>Units</b>
Organic Chemistry	CH 240	4
General Physics	PH 120	4
Humanities/Fine Arts		3-4
Social/Behavioral Science		3
	<b>Second Semester</b>	<b>Units</b>
Organic Chemistry	CH 241	4
General Physics	PH 121	4
Humanities/Fine Arts		3-4
Social/Behavioral Science		3
or		
Analytical Chemistry	CH 230	4

# Pre-Pharmacy

Associate of Science

<b>Freshman</b>	<b>First Semester</b>	<b>Units</b>
Composition	EN 101	3
General Chemistry	CH 121	4
Elective: Physical Education	PE	1
College Algebra	MA 120	3
General Physics	PH 120	4
Social/Behavioral Science		3

	<b>Second Semester</b>	<b>Units</b>
Composition	EN 102	3
General Chemistry	CH 122	4
Elective: Physical Education	PE	1
Trigonometry	MA 124	3
General Physics	PH 121	4
Social/Behavioral Science		3

<b>Sophomore</b>	<b>First Semester</b>	<b>Units</b>
Analytical Geometry/Calculus	MA 161	5
Anatomy/Physiology	BS 151	4
Elective: Humanities/Fine Arts		3-4
Fundamentals of Speech	SE 102	3
Principles of Economics	EC 201	3

	<b>Second Semester</b>	<b>Units</b>
Anatomy/Physiology	BS 152	4
Analytical Chemistry	CH 230	4
Elective: Humanities/Fine Arts		3-4
Intro to Sociology	SO 101	3
Elective: Intro to Psych. or Personality/Adjustment	PY 101 or 103	3

# Pre-Physical Therapy

Associate of Science Degree

<b>Freshman</b>	<b>First Semester</b>	<b>Units</b>
Composition	EN 101	3
General Psychology	PY 101	3
General Biology	BS 101	4
College Algebra	MA 120	3
Physical Education	PE	1
Social/Behavioral Science		3

	<b>Second Semester</b>	<b>Units</b>
Composition	EN 102	3
Gen Psych.	PY 102	3
General Biology	BS 102	4
Elective		3
Physical Education	PE	1
Social/Behavioral Science		3

<b>Sophomore</b>	<b>First Semester</b>	<b>Units</b>
Gen. Chemistry	CH 121	4
Anatomy & Physiology	BS 151	4
Elective		3
General Physics	PH 120	4
Humanities/Fine Arts		3-4

	<b>Second Semester</b>	<b>Units</b>
Anatomy & Physiology	BS 152	4
Gen. Chemistry	CH 122	4
General Physics	PH 121	4
Humanities/Fine Arts		3-4
Elective		3

# \*Pre-Veterinary

## Associate of Science

Freshman		
Elective: Physical Education	PE	1
Composition	EN 101	3
General Chemistry	CH 121	4
College Algebra	MA 120	3
General Zoology	BS 131	4
Second Semester		
Physical Education	PE	1
Composition	EN 102	3
General Chemistry	CH 122	4
Trigonometry	MA 124	3
General Zoology	BS 132	4
Sophomore		
General Physics	PH 120	4
Organic Chemistry	CH 240	4
Elective: Humanities/Fine Arts		3-4
Elective: Social/Behavioral Science		3
Principles of Economics	EC 201	3
Second Semester		
General Physics	PH 121	4
Organic Chemistry	CH 241	4
General Botany	BS 111	4
Elective: Humanities/Fine Arts		3-4
Elective: Social/Behavioral Science		3

\*Check with Office of Student Affairs for information on WICHE scholarship.

# Psychology

## Associate of Science

Freshman		
Composition	EN 101	3
Biology	BS	4
Inter. Algebra	MA 110	3
Elementary Psychology	PY 101	3
Elective: Social/Behavioral Science		3
Physical Ed.	PE	1
Second Semester		
Composition	EN 102	3
Biology	BS	4
College Algebra	MA 120	3
Elementary Psychology	PY 102	3
Physical Education	PE	1
Elective: Social/Behavioral Science		3
Sophomore		
Anatomy and Physiology	BS 151	4
General Chemistry	CH 121	4
Elective: Humanities/Fine Arts		3-4
Society and Culture	AN 125	3
Business Statistics	BU 219	3
Second Semester		
Anatomy and Physiology	BS 152	4
Child Psychology	PY 113	3
Elective: Humanities/Fine Arts		3-4
Non-Literate Societies of the World	AN 226	3
Intro. to Data Process.	BU 172	3

# Radiologic Technology

(SARAHHELP)

\*Associate of Science

	First Semester	Units
Intro. to Health Care	HT 150	3
Composition	EN 101	3
Elem. Psychology	PY 101	3
Human Anatomy & Physiology	BS 151	4
Physics	PH 120	4

	Second Semester	Units
Composition	EN 102	3
Interm. Algebra	MA 110	3
Human Anatomy & Physiology	BS 152	4
Gen. Physics	PH 121	4
Elective according to interest or academic need		3

\*Students interested in this program should contact Cochise College Admissions Officer for special procedures to enroll in a SARAHHELP Program. Acceptance to SARAHHELP Programs are contingent upon acceptance at Pima College as well as Cochise College.

# Respiratory Therapy

(SARAHHELP)

\*Associate in Science

	First Semester	Units
Introduction to Health Care	HT 150	3
Composition	EN 101	3
Personality & Adjustment	PY 103	3
Human Anatomy & Physiology	BS 151	4
General Chemistry	CH 121	4

	Second Semester	Units
Composition	EN 102	3
Elementary Algebra	MA 020	3
Human Anatomy & Physiology	BS 152	4
General Chemistry	CH 122	4
Humanities/Fine Arts		3-4

Remaining Portion of this Health Technology Program completed at Pima College.

\*Students interested in this program should contact Cochise College Admissions Officer for special procedures to enroll in a SARAHHELP Program. Acceptance to SARAHHELP Programs are contingent upon acceptance at Pima College as well as Cochise College.

# Spanish

## Associate of Arts

<b>Freshman</b>	<b>First Semester</b>	<b>Units</b>
Composition	EN 101	3
Elementary Spanish*	SP 101	4
Social Science		3
Humanities/Fine Arts**		3-4
Elective		3
PE		1

<b>Second Semester</b>		
Composition	EN 102	3
Elementary Spanish	SP 102	4
Social Science		3
Humanities/Fine Arts		3-4
PE		1
Elective		3

<b>Sophomore</b>	<b>First Semester</b>	
Intermediate Spanish	SP 201	4
Science/Math		3-4
Humanities/Fine Arts		3-4
Social Science		3
Elective		3

<b>Second Semester</b>		
Intermediate Spanish	SP 202	4
Science/Math		3-4
Humanities/Fine Arts		3-4
Social Science		3
Elective		3

\*Students who are ready for SP 275-276, Intermed. Composition and Conversation, should consult an advisor.

\*\*SP 304, 305, and SP 307, 308 are acceptable for Humanities.

# Welding

## Certificate Program

		<b>Units</b>
Written Communications & Reports	EN 110	3
Technical Mathematics I	GT 100	3
Technical Mathematics II	GT 101	3
Manufacturing Materials & Processes I	GT 105	3
Manufacturing Materials & Processes II	GT 106	3
Blueprint Interpretation & Basic Drafting	DT 100	4
Oxyacetylene Welding	TI 005	3
Arc Welding	TI 006	3
MIG and TIG Welding*	TI 007	3
Pipe and Plate Welding*	TI 010	3

\*Courses under development.

# Women in Management (AIDP Funded)

## Certificate of Completion

1. Exploring Your Potential as a Manager
2. Principles of Management
3. Special Problems in Management
4. Personnel Management
5. Principles of Finance

# Course Descriptions

## AGRICULTURE

### **AG 101 Principles of Veterinary Science/3 Units**

Prerequisite: None

An introduction to the veterinary sciences for potential pre-veterinary students as well as those students of animal science or husbandry interested in the care and health of all domestic animals and livestock.

3 hours lecture.

### **AG 102 Introduction to Agriculture/3 Units**

Prerequisite: None

An introductory class involving the overall concepts of agriculture.

3 hours lecture.

### **AG 103 Introduction to Animal and Disease Process/3 Units**

Prerequisite: None

A study of the normal animal, including the anatomical description, the physiological function, and the structural differences of the simple cell compared to the complex organs of the body. Includes instruction linking the above normal information specifically to the disease process and serves as an introduction to the basis of disease.

3 hours lecture.

### **AG 104 Principles of Agronomy/3 Units**

Prerequisite: None

Principles of field crop production with special emphasis on origin, distribution, cultural practices and improvements.

3 hours lecture.

### **AG 105 Range Management I/3 Units**

Prerequisite: None

A study of the history of rangeland use, the influences on plant physiology and ecology, and the interrelationships and coordination of rangeland uses for farm and ranch managers interested in plants, soils, and livestock.

3 hours lecture.

### **AG 106 Animal Diseases and Sanitation/3 Units**

Prerequisite: AG 103

A study of individual diseases which affect the common domestic animals including the definition, symptoms, diagnosis, prognosis, treatment, and communicability of diseases to both man and animals. Sanitation and its application to prevention of these diseases and the health of both man and animals as interrelated.

3 hours lecture.

### **AG 107 Farrier Science/3 Units**

Prerequisite: None

A study of the basic principals of farrier science, including an introduction to the physiology and anatomy of the horses' legs and hooves, horse shoeing, diagnosis of minor hoof and leg problems and proper methods for correcting stride and alignment.

1 hour lecture; 3 hours laboratory

### **AG 108 Introduction to Beekeeping/3 Units**

Prerequisites: None

A study of beekeeping including physiology and anatomy, hive and equipment preparation, disease control, and beekeeping management and production.

3 hours lecture.

### **AG 138 Team Roping/1 Unit**

Prerequisites: Basic riding experience and interest in roping.

This course will provide an opportunity for students to practice for pleasure as well as for later competition in rodeo team roping activities.

2 hours weekly

### **AG 139 Western Horsemanship/1 Unit**

Prerequisite: None

Western horsemanship will enable students who now own or intend to buy a pleasure horse to handle and care for the animal in the western tradition. It will teach a student how to handle a western saddle, how to select appropriate equipment, how to evaluate a pleasure horse before purchasing, and how to care for the general well-being of the animal.

2 hours weekly

### **AG 207 Range Plants/3 Units**

Prerequisites: Botany

Introduction to the study of local grasses, shrubs, and forbs, including identification, forage value, and ecological use. Also, range plants will be studied that are toxic or have poisonous effects on animal life.

1 hour lecture; 3 hours laboratory.

### **AG 208 Animal Industry/3 Units**

Prerequisite: None

Fundamental principles as applied to animal, dairy, and poultry science and the marketing and distribution of animal products.

3 hours lecture.

### **AG 209 Auxiliary Engine Operation and Repair/3 Units**

Prerequisite: None

The operation, servicing, adjusting, care and repair of small gas engines of various types and models.

1 hour lecture; 3 hours laboratory.

### **AG 210 General Welding 1/3 Units**

Prerequisite: None

Techniques of operating arc welding machines; oxy-acetylene torches for fusion welding heating, brazing, cutting, hard facing, and soldering of all common types of metal. Emphasis on individual projects.

3 hours lecture; 3 hour laboratory.

### **AG 211 Economics in American Agriculture/3 Units**

Prerequisite: None

Economic principles governing the production of agriculture including the principles of supply and demand, pricing, investing, measuring and consuming in the economy, emphasizing theories and practical applications to current economic problems.

3 hours lecture.

### **AG 212 Advanced Agricultural Welding/3 Units**

Prerequisites: Agriculture Welding 210

Techniques of operating arc welding machine in the various welding positions; flat, horizontal, vertical, and overhead. Also, the use of oxy-acetylene equipment for fusion welding, brazing, cutting, hardfacing and soldering all common types of metal. Also, individual projects will be done.

1 hour lecture; 3 hours lab.

### **AG 213 Agriculture Alloy & Repair Welding/3 Units**

Prerequisites: AG 210, 212, or Instructors Approval

Techniques of operating arc welding and oxy-acetylene equipment in the welding and repairing of alloy metals. Emphasis will be placed on the techniques required to satisfactorily repair alloy metals.

1 hour lecture; 3 hours lab.

### **AG 215 Home Gardening/3 Units**

Prerequisite: None

The study of the care and maintenance of trees, shrubs, hedges, and flowers, for students of horticulture, requiring practical application in growing vegetable and flower gardens.

3 hours lecture.

### **AG 230 Animal Feeding/3 Units**

Prerequisite: None

Basic principles of animal nutrition and digestion. Selection, evaluation, and use of feeds in balancing rations for livestock and poultry.

3 hours lecture.

### **AG 237 Horse Science & Management/3 Units**

Prerequisites: None

An introduction to the types, breeds, and management of horses with emphasis on feeding, breeding, and daily care of horses.

3 hour lecture.

### **AG 242 Livestock Judging, 3 Units**

Prerequisite: None

Selection of animals by type, production, and pedigree, practice judging, and selection of livestock.

3 hours lecture.

### **AG 243 Livestock Production and Management/3 Units**

Prerequisite: None

The managerial skills necessary in production, feeding, and care of livestock on farms and ranches.

3 hours lecture.

## **ANTHROPOLOGY**

### **AN 101 The Origin and Antiquity of Man/3 Units**

Prerequisite: None

A survey of human biological origins, based upon paleontological and archaeological records, including recent developments in physical anthropology.

3 hours lecture.

### **AN 102 Development of Culture/3 Units**

Prerequisite: None

An introduction to elements of cultural anthropology and a study of man's cultural progress from the Lower Paleolithic to historic periods.

3 hours lecture.

### **AN 125 Society and Culture/3 Units**

Prerequisite: None

Theoretical and practical insight into cultural forces which affect man's way of life including study of material culture, technology, social, political, economical systems, religion, and language.

3 hours lecture.

### **AN 135 Introduction to Archaeology/3 Units**

Prerequisite: None

A basic study of archaeological theory and technique. Field trips and laboratory work are important aspects of the course.

3 hours lecture; field trips.

### **AN 136 Archaeological Excavation/4 Units**

Prerequisite: None

Practical experience through scientific excavation of an archaeological site. Sessions held in the field and laboratory.

4 hours field; 2 hours laboratory.

### **AN 137 Archaeological Excavation/4 Units**

Prerequisite AN 136

Directed study of a specific problem through scientific excavation of an archaeological site. Offered along with AN 136. Sessions held in the field and laboratory.

4 hours field; 2 hours laboratory

### **AN 185 Prehistoric Cultures of North America/3 Units**

Prerequisite: None

A survey of prehistoric native cultures of North America, which includes investigations of areas of particular interest to individual students.

3 hours lecture; field trips.

### **AN 186 Historic Indian Tribes of North America/3 Units**

Prerequisite: None

A survey of prehistoric native cultures of North America, an in-depth investigation of cultural areas of particular interest to individual students.

3 hours lecture; field trips.

### **AN 226 Non-Literate Societies of the World/3 Units**

Prerequisite: None

The study of selected non-literate people and their way of life, with major attention to such groups as tribes, chiefdoms, pastoral and peasant societies.

3 hours lecture.

### **AN 199-299 Individual Studies/1-4 Units**

Prerequisite: Approval of the department chairman and instructor.

The student will complete a research problem or an outlined course of study under the direction of a faculty member. The contract for the individual study must be agreed upon by the student, the instructor and the department chairman prior to initiation of the study. May be repeated for credit.

## **ART**

*NOTE: All studio courses except AR 101 — Introduction to Art — may be repeated once for credit. (The second semester is usually allowed as an art elective.) These courses may be repeated indefinitely beyond the second semester for non-transfer credit.*

\*\$10 Lab Fee

### **AR 101 \*Introduction to Art/3 Units**

Prerequisite: None

Introduction to art elements and principles. A study of the developments of ideas, materials, and techniques.

2 hours lecture; 4 hours studio.

### **AR 103 \*Basic Design/3 Units**

Prerequisite: None

A study of the basic elements of visual perception and organization.

2 hours lecture; 4 hours studio.

### **AR 105 \*Art in the Elementary School/3 Units**

Prerequisite: None

An introduction for the teacher aide to materials and methods

used in an elementary art class. A study of a child's artistic development through lectures, slides, films, and appropriate art experiences in lab involvements. Will not fulfill the art education requirement for the elementary school certification.

3 hours lecture.

### **AR 106 \*Basic Drawing/3 Units**

Prerequisite: None

Elementary course in representational drawing and expressive pictorial design; still-life, landscape drawing and imaginary drawings with pencil, charcoal, ink, and other media, freehand drawing to develop eye-hand coordination.

2 hours lecture; 4 hours studio.

### **AR 107 Survey of World Art/3 Units**

Prerequisite: None

A study of the development of the art and architecture of western civilization from pre-historic times through the Gothic era.

3 hours lecture.

### **AR 108 Survey of World Art/3 Units**

Prerequisite: None

A continuation of Art 107 through the modern era.

3 hours lecture.

Survey of World Art fulfills three or six units of the humanities and fine arts requirement for the A.A. or A.S. degrees.

### **AR 230 \*Two Dimensional Design/3 Units**

Prerequisite: Art 103

An introduction of the theory and practice of two-dimensional composition and design.

2 hours lecture; 4 hours studio.

### **AR 231 \*Three Dimensional Design/3 Units**

Prerequisite: Art 103

A studio course with an inquiry into the use of volume and mass relationships as they exist in actual space. An introduction to methods of sculpture, pottery, and jewelry.

2 hours lecture; 4 hours studio.

### **AR 245 \*Beginning Figure Drawing/3 Units**

Prerequisite: Art 106 or permission of instructor.

Drawing of the human figure with the emphasis on the anatomical form, relationships, motion, rhythm, and gesture, with a secondary emphasis of the figure in its environment.

2 hours lecture; 4 hours studio.

### **AR 265 \*Beginning Commercial Design/3 Units**

Prerequisite: Art 103

The principles of commercial design and techniques of advertising layout, concentrating on practical applications.

2 hours lecture; 4 hours studio



**AR 270 \*Ceramics/3 Units**

Prerequisite: Art 103, Art 231, or permission of instructor

An introduction to clay, glaze, and kiln processes through hand-built and wheelthrown techniques.

2 hours lecture; 4 hours studio

**AR 280 \*Beginning Painting/3 Units**

Prerequisite: Art 102, Art 103, Art 106, or permission of instructor

An introduction to the principles and techniques of oil, water color, casein, and fresco painting.

2 hours lecture; 4 hours studio

**AR 285 \*Beginning Photography/3 Units**

Prerequisite: Art 103, or permission of instructor.

An introduction to the use and function of the camera and black and white darkroom technique.

2 hours lecture; 4 hours laboratory.

**AR 290 \*Sculpture/3 Units**

Prerequisite: Art 103, Art 231, or permission of instructor.

An introduction to sculptural media and techniques through wood, plaster, metal, plastic, clay, paper, and stone.

2 hours lecture; 4 hours studio.

**AR 199-299 Individual Studies/1-4 Units**

Prerequisite: Approval of the department chairman and instructor.

The student will complete a research problem or an outlined course of study under the direction of a faculty member. The contract for the individual study must be agreed upon by the student, the instructor and the department chairman prior to initiation of the study. May be repeated for credit.

**AVIATION TECHNOLOGY****AT 101G Stage One Ground School/3Units**

Prerequisite: AT 103G must be taken concurrently or prior to AT 101G.

A comprehensive course leading to completion of the requirements for a Private Pilot Certificate.

**AT 101F Stage One Flight Laboratory/3 Units**

Prerequisite: Concurrent or prior registration in AT 101G and 103G. Admission to a laboratory section.

A comprehensive course leading to completion of the requirements for a Private Pilot Certificate.

**AT 102G Stage Two Ground School/3 Units**

Prerequisites: Completion of AT 101G with a grade of C or better or possession of a Private Pilot Certificate.

A study of the requirements for a Commercial Pilot Certificate.

**AT 102F Stage Two Flight Laboratory/3 Units**

Prerequisites: Completion of AT 101F with a grade of C or better

or possession of a Private Pilot Certificate. Admission to a laboratory section.

An intermediate step toward completion of the requirements for the Commercial Pilot Certificate.

**AT 103G Stage Three Ground School/3 Units**

Prerequisites: None

A comprehensive study of Aviation Meteorology. Must be scheduled concurrently or prior to AT 101 Ground School or AT 204 Ground School.

**AT 103F Stage Three Flight Laboratory/3 Units**

Prerequisite: Completion of AT 101F and 102F with minimum grade of C. Admission to a laboratory section.

A continuation of the development of the requirements for the Commercial Pilot Certificate.

**Airframe and Powerplant Maintenance Technology**

A specialized 1936 contact hour program that meets the requirements of Federal Aviation Regulations, Part 147.

**AT 005 Airframe and Powerplant Upgrade/6 Units**

A review of the total A & P program curriculum designed for the military aircraft mechanic who has 30 or more months experience. Upon completion of the 90 hours of lecture-discussion for 6 units of credit (3 units airframe, 3 units powerplant) the student will be qualified to take FAA written, oral and practical examinations. 70% Lecture; 30% Laboratory

**AT 110 Phase I 400 Hours/20 Units**

General Section

A comprehensive study of general subjects required by the FAA as a prerequisite to the Airframe and Powerplant courses. This section embraces the following subjects: aero math, aircraft drawing, basic physics, basic electricity, fluid lines and fittings, material and processes, cleaning and corrosion control, ground operations and servicing, maintenance publications, mechanic privileges and limitations, maintenance forms and records and weight and balance.

50% Lecture; 50% Laboratory.

**AT 115 Phase II 384 Hours/17 Units**

Prerequisites: Phase I

A comprehensive study of aircraft structures with emphasis on structural repairs and finishing techniques on metal and fabric covered aircraft.

50% Lecture; 50% Laboratory.

**AT 120 Phase III 384 Hours/17 Units**

Prerequisites: Phases I and II

A study of aircraft systems, including electrical, hydraulics, landing gear, environmental control, ice and rain protection, fire protection, and fuel systems.

50% Lecture; 50% Laboratory

**AT 125 Phase IV 384 Hours/17 Units**

Prerequisites: Phase I

A continuation of aircraft powerplants and all related systems, including propeller, fuel, ignition, lubrication, electrical and cooling..

50 % Lecture; 50% Laboratory.

**AT 130 Phase V 384 Hours/17 Units**

Prerequisites: Phases I and IV

An introduction of aircraft powerplant theory and maintenance on reciprocating and turbine engines.

50 % Lecture; 50 % Laboratory.

**AT 204G Stage Four Ground School/3 Units**

Prerequisite: Completion of AT 101, 102, and 103 Ground Schools with minimum grades of C, or possession of a Commercial Pilot Certificate, or a Private Certificate with 200 hours flight time. AT 103 Ground School must be taken prior to or concurrently with AT 204 Ground School.

A comprehensive study of the requirements for an Instrument Pilot Rating.

**AT 204F Stage Four Flight Laboratory/3 Units**

Prerequisite: Completion of AT 101, 102, and 103 Ground and Flight with minimum grades of C, or possession of a Commercial Certificate, or Private Certificate with 200 hours flight time. Admission to a laboratory section.

A comprehensive study of the skill requirements for an Instrument Pilot Rating.

**AT 208G Multi-Engine Class Rating Ground School/1 Unit**

Prerequisite: 5 hours in a "complex" airplane.

A comprehensive course leading to completion of the requirements for a Multi-Engine Land Airplane Class Rating.

**AT 208F Multi-Engine Class Rating Flight Laboratory/2 Units**

Prerequisite: Admission to a laboratory section. 5 hours solo in "complex" airplane. Concurrent enrollment or prior completion of AT 208G.

A comprehensive course leading to completion of the requirements for a Multi-Engine Land Airplane Class Rating.

**AT 220G Flight Instructor-Airplane Ground School/3 Units**

Prerequisite: Possession of a Commercial Pilot-Airplane Certificate with an Instrument Rating.

A comprehensive course leading to completion of the requirements for Flight Instructor-Airplane Certification.

**AT 220F Flight Instructor-Airplane Flight Laboratory/2 Units**

Prerequisite: Possession of a Commercial Pilot-Airplane Certificate with an Instrument Rating. Admission to a laboratory section. Concurrent enrollment or prior completion of AT 220G.

A comprehensive course leading to completion of the requirements for Flight Instructor-Airplane Certification.

**AT 230G Multi-Engine Airplane Flight Instructor Ground School/2 Units**

Prerequisite: Possession of a Flight Instructor-Airplane Certificate and a Multi-Engine Land Airplane Class Rating

A comprehensive course leading to completion of the requirements for Multi-Engine Flight Instructor Certification.

**AT 230F Multi-Engine Airplane Flight Instructor Flight Laboratory/2 Units**

Prerequisite: Admission to a laboratory section. Possession of a Flight Instructor-Airplane Certificate and a Multi-Engine Land Airplane Class Rating. Concurrent enrollment or prior completion of AT 230G.

A comprehensive course leading to completion of the requirements for Multi-Engine Land Airplane Flight Instructor Certification

**AT 240G Instrument Flight Instructor-Airplane Ground School/2 Units**

Prerequisite: Possession of an Airplane Flight Instructor Certificate and Instrument rating.

A comprehensive course leading to completion of the requirements for certification as an Instrument Flight Instructor-Airplanes.

**AT 240F Instrument Flight Instructor-Airplane Flight Laboratory/2 Units**

Prerequisite: Admission to a laboratory. Possession of an Airplane Flight Instructor certificate and an Instrument Rating. Concurrent enrollment or prior completion of AT 240G.

A comprehensive course leading to completion of the requirements for Instrument Flight Instructor-Airplane certification.

**AT 250G Airline Transport Pilot Rating Ground School/3 Units**

Prerequisite: Possession of a Commercial Pilot Certificate with an Instrument rating.

A course leading to completion of the requirements for Airline Transport Pilot Certification.

**AT 250F Airline Transport Pilot Rating Flight Laboratory**

Credit determined by number of hours of instruction required

Prerequisite: Possession of a Commercial Pilot Certificate with an Instrument Rating. Total flight hours requirement as per FAR Part 61 and a current Class I Medical Certificate.

A comprehensive course leading to completion of the requirements for an Airline Transport Pilot Rating.

**AT 199G and/or F Individual Studies Ground School and/or Flight Laboratory**

Credits to be determined by coursework and hours under contract agreement by student and instructor assigned with Department Chairman's approval

Courses designed by contract to provide recognition and give credit for extra-curricular projects of merit.

## **BIOLOGICAL SCIENCES**

\* \$10 Lab Fee

### **BS 101 \*General Biology/4 Units**

Prerequisite: None

Principles and concepts of biology with reference to the organization and function of cells, flowering plants, and man. Not open to majors in the Biological Sciences or the pre-professional curricula.

3 hours lecture; 3 hours laboratory.

### **BS 102 \*General Biology/4 Units**

Prerequisite: None

Major principles of biology as illustrated by the animal and plant kingdoms, inheritance, speciation, and ecology. Not open to majors in the Biological Sciences or the pre-professional curricula.

3 hours lecture; 3 hours laboratory

### **BS 111 General Botany/4 Units**

Prerequisites: Chemistry 121, Chemistry 101, or high school chemistry.

Basic course in botany for students of plant or animal science. An introduction to the principles of botany as illustrated by flowering plants, with emphasis on anatomy and physiology. Offered spring semester only.

3 hours lecture; 3 hours laboratory.

### **BS 131-132 \*General Zoology/4-4 Units**

Prerequisites: Chemistry 121, (or concurrent enrollment), Chemistry 101 or high school chemistry. Zoology 131 is a prerequisite for 132 except by special permission of the instructor.

An introduction to animal structure and classification and a survey of animal phyla with an emphasis on vertebrate groups. Principles of genetics, ecology, evolution, embryology, phylogeny and physiology. Dissections of specimens representative of the major phyla, including dissection of typical vertebrates. BS 131 offered fall semester only. BS 132 offered spring semester only.

2 hours lecture; 6 hours laboratory.

### **BS 151-152 \*Human Anatomy and Physiology/4-4 Units**

Prerequisites: BS 151 is prerequisite for BS 152.

An integrated study of the physical, structural, and functional features of the cells, tissues, organs, and systems of the human body. BS 151 offered fall only, BS 152 offered spring only.

3 hours lecture; 3 hours laboratory. Discussion period 1 hour (optional).

### **BS 220 \*Microbiology/4 Units**

Prerequisite: Completion of a semester of a college biological science is highly recommended.

A survey of microbic life and fundamental biological types of all microorganisms; characteristics and importance of microorganisms other than bacteria, control of microorganisms and disease, and other aspects of applied microbiology. Offered spring semester only.

3 hours lecture; 3 hours laboratory.

### **BS 234 \*General Genetics/3 Units**

Prerequisite: One course in the biological sciences at the college level.

Fundamental concepts and methods of analysis of plant and animal inheritance. Includes basic Mendelism, elementary probability, chromosome behavior, population, and biochemical genetics.

2 hours lecture; 3 hours laboratory

## **BOTANY**

See Biological Sciences

## **BUSINESS**

### **BU 101 Principles of Accounting/3 Units**

Prerequisite: None

An introductory course in gathering, recording and using the financial data of a business. The accounting cycle, debits and credits, classification of accounts, recording of transactions and preparation of financial statements for single proprietorships, partnerships, and corporations.

3 hours lecture; 2 hour laboratory.

### **BU 102 Principles of Accounting/3 Units**

Prerequisite: BU 101

A continuation of BU 101 with increased emphasis upon partnership and corporation accounting. Capital structure and interpretation and usage of accounting data for managerial decision-making purposes.

3 hours lecture; 2 hours laboratory.

### **BU 104 Business Math (Programmed)/3 Units**

Prerequisite: None

The fundamentals of business mathematics and ability to communicate with the number language of the business world.

3 hours lecture and laboratory.

### **BU 105 Typing Review/1 Unit**

Prerequisite: None

A review of skills and mechanical functions of the typewriter, letter format, tabulation, forms, and manuscripts through individualized units of work.

1 hour lecture; 2 hours laboratory.

### **BU 106 Elementary Typing/3 Units**

Prerequisite: None

An introduction to the basic typewriting skills and techniques

needed to master letter styles, tabulations, forms, and manuscripts through individualized units of work with an expected outcome of 40 wpm for three minutes.

3 hours lecture; 1 lab hour

### **BU 107 Bilingual Typing/3 Units**

Prerequisite: BU 106 with a grade of C or better or permission of the instructor and Spanish proficiency at the second-year level.

A comprehensive study to improve the basic typewriting skills and techniques needed to master letter style, tabulations, forms, and manuscripts through individualized units of work in both English and Spanish.

3 hours lecture

### **BU 108 Intermediate Typing/3 Units**

Prerequisite: BU 106 with a grade of C or better or Permission of the instructor.

A comprehensive study to improve the basic typewriting skills and techniques needed to master letter style, tabulations, forms, and manuscripts through individualized units of work with an expected outcome of 50 wpm for five minutes.

3 hours lecture

### **BU 109 Survey of American Business/3 Units**

Prerequisite: None

Fundamental characteristics and functions of modern business, with emphasis on possible career opportunities.

3 hours lecture.

### **BU 110 Elementary Shorthand/3 Units**

Prerequisite: BU 106 or equivalent, minimum grade of C in English or permission of the instructor.

An intensive study of Gregg Shorthand theory with an expected outcome of 60 wpm for 3 minutes at 95% accuracy.

3 hours lecture; 1 hour laboratory.

### **BU 111 Intermediate Shorthand/3 Units**

Prerequisite: BU 110 with a grade of C or better or permission of the instructor.

A comprehensive study of Gregg Shorthand theory, vocabulary development and typed transcripts with emphasis on speed dictation to an expected outcome of 80 wpm on new material for 3 minutes at 95% accuracy.

3 hours lecture

### **BU 113 Shorthand Review/1 Unit**

Prerequisite: Previous shorthand experience, minimum grade of C in English, or permission of the instructor.

A review and reinforcement of previous ability to write shorthand through the review of principles and theory of Gregg Shorthand

1 hour lecture; 1 hour laboratory

### **BU 114 Elementary Typing A—Keyboard Theory/2 Units**

Prerequisite: None

An introduction to the basic typewriting skills and techniques needed for "touch typewriting" with an expected outcome of 30 wpm for three minutes.

2 hours lecture

### **BU 115 Elementary Typing B—Production Typing/2 Units**

Prerequisite: BU 114 or equivalent

An introduction to the basic skills needed to master letter styles, tabulations, printed forms, and manuscripts through individualized units of work with an expected outcome of 40 wpm for three minutes.

2 hours lecture

### **Bu 116 Elementary Shorthand A—Theory/2 Units**

Prerequisite: Minimum grade of C in English or permission of the instructor.

An intensive study of the first half of Gregg Shorthand theory through practice in reading and writing shorthand with an expected outcome of 40 wpm for three minutes dictation at 95% accuracy.

2 hours lecture

### **BU 117 Elementary Shorthand B—Theory/Dictation/2 Units**

Prerequisite: BU 116 or equivalent

An intensive study of the second half of Gregg Shorthand theory with emphasis on dictation to an expected outcome of 60 wpm for three minute dictation at 95% accuracy.

2 hours lecture

### **BU 118 Calculating Machines/2 Units**

Prerequisite: BU 104 or permission of the instructor.

An introduction to the fundamental skills in operating office calculating machines and a review of basic math needed to calculate business-type problems.

2 hours lecture, 1 hour laboratory

### **BU 121 Taxation Principles and Procedures/3 Units**

Prerequisite: BU 101 or permission of the instructor

Tax laws, accounting procedures and preparation of required United States and Arizona Income Tax returns as they apply to individuals and businesses.

3 hours lecture

### **BU 123 Personnel Management/3 Units**

Prerequisite: None

A study of policies and techniques pertaining to personnel management and human relations as applied to employee selection, placement, training, motivation, promotion, and supervision. Employer and employee social responsibilities introduced.

3 hours lecture

**BU 124 Military Organizations and Staff Functions/3 Units**

Prerequisite: None

A functional study of the development of U.S. defense policy, the organization, role and mission of the Department of Defense, Departments of the Army, Air Force and Navy; the organization, role and mission of the major commands of the Army, the organization and functions of the general and special staff at the Army division level; and the organization and operations of combat support groups.

3 hours lecture.

**BU 125 Management and Organizational Behavior/3 Units**

Prerequisite: None

Study of group behavior, inter-personal relationships and inter-group relationships in the organization. Conceptual tools for analyzing behavior and managing group processes of conflict, communication and task accomplishment.

3 hours lecture.

**BU 126 Exploring Your Potential as a Manager/3 Units**

Prerequisite: None

This course will assist woman to evaluate their aptitudes, capabilities, and values, and to relate this evaluation to possible career choices in the business world.

3 hours lecture.

**BU 127 Leadership and Supervision/3 Units**

Prerequisite: BU 123

Study in depth of the supervision and leadership functions in management. Case studies emphasized.

3 hours lecture.

**BU 128 Special Problems in Management/3 Units**

Prerequisite: None

This course introduces many of the problems unique to women choosing business as careers, and assists with the preparation of women to deal effectively as managers.

3 hours lecture.

**BU 132 Bank Loss Prevention/1 Unit**

Prerequisite: None

This American Institute of Banking (AIB) course, intended primarily for bank tellers, focuses on check cashing, check swindles, bank holdups, and security procedures.

Concentrated workshop of 16 contact hours or as a five-session seminar.

**BU 133 Selling Bank Services/1 Unit**

Prerequisite: None

This American Institute of Banking (AIB) course teaches bank tellers and new-account personnel how to recognize and meet bank customer needs: checking accounts, savings services, loans

to individuals, safe deposit boxes, travelers checks, and cross-selling.

Concentrated workshop of 16 contact hours or as a 5-session seminar

**BU 134 Bank Management/3 Units**

Prerequisite: None

A study of new trends in the philosophy and practice of management, with particular emphasis on their application in banking. The case study method will be utilized extensively.

3 hours lecture.

**BU 135 Principles of Bank Operations/3 Units**

Prerequisite: None

The fundamental of bank functions in a descriptive fashion so that the beginning banker may view his chosen profession in a broad and operational perspective.

3 hours lecture.

**BU 136 Analyzing Financial Statements/3 Units**

Prerequisite: BU 101

The characteristics and analysis of financial statements, with emphasis on their utilization in banking. Covering the balance sheet, the profit and loss statement, and analysis of earning potential. An American Institute of Banking Course.

3 hours lecture.

**BU 137 Business, Money and Banking/3 Units**

Prerequisite: EC 201

The practical aspects of money and banking and the basic monetary theory needed by the banking student. Economic stabilization, types of spending, the role of gold, limitations of central bank exchange, showing their repercussions on the banking industry in affecting yield curves and the structuring of portfolios.

3 hours lecture.

**BU 138 Real Estate Finance/3 Units**

Prerequisite: None

Examines real estate risk and financing, including the source availability, cost, and use of mortgage money.

3 hours lecture.

**BU 139 Law and Banking/3 Units**

An introduction to basic American Law, presenting the rules of law which underlie banking. Topics include jurisprudence, the court system and civil procedure, contracts, quasi-contracts, property, torts and crimes, agencies, partnerships, corporations, sales of personal property, commercial paper, bank deposits and collections, documents of title, and secured transactions. Emphasis is on the Uniform Commercial Code. Particular emphasis will be placed on commercial paper and banking transactions involving legal significance.

3 hours lecture.

**BU 140 Principles of Real Estate/3 Units**

Prerequisite: None

A program specifically designed to meet the State Real Estate Board's educational requirements for the licensing of salesmen and the certification requirements of the National Association of Real Estate Boards

3 hours lecture.

**BU 142 Insurance/3 Units**

Prerequisite: None

Principles and practices of insurance, including coverage available, buying methods, procedures for settling claims, analysis of contracts and forms of insurance purchased.

3 hours lecture.

**BU 143 Principles of Management/3 Units**

Prerequisite: None

Managerial principles with emphasis on planning, organizing, motivating, and controlling for effective business decisions.

3 hours lecture.

**BU 144 Salesmanship/3 Units**

Prerequisite: None

Career opportunities in sales work, practical and psychological factors in selling, development of a desirable sales personality and correct techniques in conducting sales campaigns. Members of the class engage in practical sales demonstrations.

3 hours lecture.

**BU 145 Principles of Marketing/3 Units**

Prerequisite: None

Marketing principles involved in the distribution of goods and services from the producer to the ultimate consumer, including functions of wholesaling, retailing, direct selling, risk taking, and storage.

3 hours lecture.

**BU 146 Bookkeeping and Financial Management (Secretarial Accounting)/3 Units**

Prerequisite: None

The basic accounting cycle, business transactions, journalizing, posting and financial statements, cash control and banking, payroll preparation, credit and receivables control, inventory control, sources of funds, budgeting, and ratio analysis.

3 hours lecture.

**BU 147 Labor Relations/3 Units**

Prerequisites: BU 123 or BU 143 or permission of the instructor

A presentation of the history of the labor movement in the United States; union structure, the collective bargaining process, and a review of labor legislation and a summation of current and future problems and trends in the labor field.

3 hours lecture.

**BU 148 Advertising/3 Units**

Prerequisite: BU 145

Principles of advertising involves consideration of planning, financing, and managing a campaign, selection of advertising media, displaying, and publicity, studying of color and balance in its application to good merchandising.

3 hours lecture.

**BU 149 Merchandising/3 Units**

Prerequisite: None

Examines the organization and operation of retail outlets, trends and concepts in retail selling, and problems in retailing both goods and services. Suggests solutions for buying, selling, stocking, servicing and controlling in retail outlets.

3 hours lecture.

**BU 150 Notehand/3 Units**

Prerequisite: None

A study of the fundamentals of good notemaking, both theory and practice, through the use of a simple and easy-to-use adaption of Gregg Shorthand expressly designed for personal use.

3 hours lecture.

**BU 151 Occupational Safety and Health Act of 1971 (OSHA)/3 Units**

Prerequisite: None

Comprehensive, single source safety and health standards as contained within the Act.

3 hours lecture.

**BU 153 Instructional Media: Use and Development/3 Units**

Prerequisite: None

A course designed to introduce students in Teacher-Aide program to use of typewriter, audiovisual equipment, production of instructional media and duplication processes as applied in elementary school, also clerical duties such as attendance reports, money collection, ordering materials, and record keeping.

**BU 154 Credit Union Basics/3 Units**

Prerequisite: None

Understanding credit unions, operations and organization of the credit union, credit principles, collection procedures and public relations.

3 hours lecture.

**BU 155 Credit Union Management/3 Units**

Prerequisite: BU 154 or permission of instructor

Overview of Credit Union movement, managerial problems, organization, administration and development, responsibilities of official, Federal regulations.

3 hours lecture.

**BU 156 Principles of Finance/3 Units**

Prerequisite: None

An introduction to the world of finance dealing with the relationship of money in our economy and an indepth study of the role and techniques of financial management within the firm.

3 hours lecture

**BU 161 General Office Procedures/3 Units**

Prerequisite: BU 106 or permission of the instructor.

An introduction to duties of office workers, including personal qualifications, system of filing, preparation of reports, handling mail, and using the telephone.

3 hours lecture.

**BU 162 Clerical Practice/3 Units**

Prerequisite: BU 161 or permission of the instructor.

Actual practice in handling office mail, job applications and interviews, filing, telephone techniques, and transcription machines for each individual occupational option. Practice sets in specialized areas; general, medical, bilingual, and legal.

3 hours lecture.

**BU 167 Business Communications/3 Units**

Prerequisites: EN 101, BU 106

Development of skills and techniques used in communicating facts and ideas in business.

3 hours lecture.

**BU 170 Key punch/2 Units**

Prerequisite: BU 106 or permission of the instructor.

A comprehensive study of the operation and application of the keypunch machine and its relation to data processing.

2 hours lecture.

**BU 172 Introduction to Data Processing/3 Units**

Prerequisite: None

An overview of the data processing field, general practices and aims of business, data processing systems and terminology; data collection, report preparation, functions of data processing units, flow charts, system design concepts and basic computer programming. Students receive practice in writing computer programs.

3 hours lecture.

**BU 173 Programming — COBOL Level I/3 Units**

Prerequisite: BU 172 or permission of the instructor.

A detailed study of the COBOL programming language and the organization of a COBOL program. Computer organization, data structure, program procedures, input-output and operator considerations. Multiples will be required.

1 hour lecture; 2 hours laboratory.

**BU 174 Programming — Fortran/3 Units**

Prerequisite: BU 172

A detailed study of the Fortran programming language and the organization of a Fortran program. Computer organizations, data structure, program procedures, input-output and operator considerations. A minimum of two operational programs required

1 hour lecture; 2 hours laboratory

**BU 201 Intermediate Accounting/3 Units**

Prerequisite: BU 102

A comprehensive course in gathering, recording, and using the financial data of business. Accounting treatment of assets, including related principles of profit determination

3 hours lecture; 1 hour laboratory.

**BU 202 Intermediate Accounting/3 Units**

Prerequisite: BU 201

A continuation of BU 201. Accounting treatment of liabilities and capital accounts and the analysis of financial statements.

3 hours lecture; 1 hour laboratory

**BU 208 Advanced Typing/3 Units**

Prerequisite: BU 108 with a grade of C or permission of the instructor.

A study of typewriting skills needed to become proficient at typing business letters, printed forms, manuscripts, minutes, and tabulation problems through the use of individualized units of work with an expected outcome of 60 wpm for five minutes

3 hours lecture.

**BU 209 Professional Typing/3 Units**

Prerequisite: BU 208 with a grade of C or permission of the instructor.

A comprehensive study of typewriting skills needed to type special, more demanding business letters, manuscripts, tabulations, and various forms through the use of individualized units of work with an expected outcome of 70 wpm for five minutes

3 hours lecture

**BU 211 Advanced Shorthand/3 Units**

Prerequisite: BU 111 with a grade of C or better or permission of the instructor.

A comprehensive study of Gregg Shorthand theory, vocabulary development, and mailable transcripts with an expected outcome of 100 wpm on new material for three minutes at 95% accuracy

3 hours lecture

**BU 212 Advanced Transcription/3 Units**

Prerequisite: BU 111 and BU 211 with a grade of C or presently enrolled in BU 211 or permission of the instructor

An integration of shorthand and typing skills with English skills to

prepare for office standards with emphasis on high-quality transcripts with an expected outcome of 120 wpm on new material for three minutes at 100% accuracy. Spring semester only.

3 hours lecture.

### **BU 217 Records Management/3 Units**

Prerequisite: BU 106; admission open to qualified freshmen.

A study of the principles and procedures of actual filing and actual practices in the basic systems using established management systems. Taught fall semester only.

3 hours lecture.

### **BU 219 Business Statistics/3 Units**

Prerequisite: BU 104, college or high school algebra, or permission of the instructor.

Introductory topics of business statistics such as data presentation, data summarization, probability, probability distributions, sampling distributions, elementary decision-making, estimation of population means, testing of hypotheses, analysis of variance and regressive analysis. (Although not required MA 110 intermediate algebra helpful.)

3 hours lecture

### **BU 220 Business Statistics/3 Units**

Prerequisite: BU 219

Testing and estimation, statistical inference, variance analysis, regression, correlation, time series, and index number application.

3 hours lecture.

### **BU 231 Business Law/3 Units**

Prerequisite: Sophomore Standing

A presentation of law as a part of the American Society with an emphasis on judicial procedures, business transactions, contracts, torts, personal and real property law, administrative law, criminal law, and consumer law.

3 hours lecture

### **BU 232 Business Law/3 Units**

Prerequisite: Sophomore standing and completion of BU 231, or by the instructor's permission.

A presentation of the Legal Aspects of the law pertaining to Sales, Commercial Paper, Creditor's Rights and Secured Transactions, Agency and Employment, Partnerships and Special Ventures, and Corporations.

3 hours lecture

### **BU 245 Seminar: Trends and Practices in Marketing and Management/3 Units**

Prerequisite: BU 144, 145, and 101 or 146; or permission of the instructor.

Applying problem solving and decision-making techniques to practical business situations based on current readings in

Marketing and Management. Designed to blend and apply current business theories and practices to meet class and individual needs.

3 hours lecture.

### **BU 253 Medical Terminology/3 Units**

Prerequisite: BS 151 or permission of the instructor.

Terms frequently encountered in medical records; the study of prefixes, suffixes and the principles for combining the two to make a compound. Followed by a comprehensive study of a list of related medical terms.

3 hours lecture.

### **BU 264 Secretarial Office Procedures/3 Units**

Prerequisite: BU 109, 212, and 217

A comprehensive study of office organization and layout, workflow, procedures, standards, personnel policies and supervision procedures through progressive job situations.

3 hours lecture

### **BU 265 Secretarial Practice/3 Units**

Prerequisite: BU 264 or permission of the instructor.

Actual practice in using equipment for transcription, and the Memory typewriter; a thorough study of office style dictation, business letters, technical articles, filing, telephone techniques, mailing, and personal grooming. Practice sets in specialized area, general, medical, bilingual, and legal.

3 hours lecture

### **BU 266 Medical Transcription/3 Units**

Prerequisite: BU 264 or permission of the instructor. BS 151, 152, and BU 253

Actual practice in using equipment for transcription into typewritten form of written, verbal or recorded ideas. Includes work on transcription equipment machines and office style dictation.

3 hours lecture

### **BU 267 Internship as Medical Secretary/16 Units**

Prerequisites: BU 253 and 265.

Designed to combine theory and practice with experience in a medical record department or similar facility. Entirely on-the-job training.

### **BU 273 Programming — COBOL Level II/3 Units**

Prerequisite: BU 173

An advanced study of the COBOL language. Advanced techniques in the design of a computer program control and validation methods using magnetic devices, table organization and random and sequential file processing. Students required to construct and write several programs.

1 hour lecture; 2 hours laboratory.



### **BU 279 Computer Operations — Level I/3 Units**

Prerequisite: BU 173

A detailed study of the hardware associated with a computer system. An overview of unit record equipment to relate the interface of unit record equipment with computer operations. Laboratory exercises involve planning, set-up and operation of each of the peripheral devices associated with the computer. 1 hour lecture; 2 hours laboratory.

### **BU 282 Management Information Systems/3 Units**

Prerequisite: BU 172, comparable work experience, or permission of the instructor.

A study of the management sciences involved in meeting the informational needs of business, industry, governmental and educational agencies. A study of the skill and knowledge of man versus machine to develop and design data processing systems. A problem oriented approach. 2 hours lecture; 1 hour laboratory.

### **BU 283 Small Business Management — A Seminar Approach/3 Units**

Prerequisites: BU 143 — Principles of Management; BU 145 — Principles of Marketing; BU 101 & 102 — Principles of Accounting

This course is recommended for the last semester of the Associate of Applied Science in Business Administration degree.

Analysis of the practical problems of organizing and managing a successful small business. Practical problems in marketing research, financial analysis and control, budgeting, management, and organization for small businesses are emphasized.

### **BU 284 Installment Credit I/3 Units**

Prerequisites: BU 101 Principles of Accounting or a working knowledge of banking terminology.

Techniques of installment lending with emphasis on credit evaluation, open end and direct credit, legal aspects of installment credit.

3 hours lecture

### **BU 285 Installment Credit II/3 Units**

Prerequisite: BU 284 Installment Credit I

Techniques of installment credit with emphasis on rate structure and yield analysis, organizing and managing installment credit departments, and marketing bank services.

3 hours lecture

### **BU 199-299 Individual Studies/1-4 Units**

Prerequisite: Approval of the department chairman and instructor.

The student will complete a research problem or an outlined course of study under the direction of a faculty member. The contract for the individual study must be agreed upon by the student, the instructor and the department chairman prior to initiation of the study. May be repeated for credit.

## **CHEMISTRY**

\*\$10 Lab Fee

### **CH 101 \*Introduction to Chemistry/4 Units**

Prerequisite: MA 020 or equivalent.

Elements of general chemistry. Adapted to the needs of those students who have not had high school chemistry. 3 hours lecture, 3 hours laboratory.

### **CH 110 \*Essentials of Chemistry/4 Units**

Prerequisite: High school chemistry or algebra or MA 020.

A one semester course introducing fundamentals of general chemistry. Emphasis placed on principles important to the understanding of human biological functions and related medical aspects. Especially adapted to the needs of students in nursing and other health related fields. Serves as a laboratory science for degree requirements. 3 hours lecture, 3 hours laboratory.

### **CH 121-122 \*General Chemistry/4-4 Units**

Prerequisite: High school chemistry or CH 101 or MA 120 or concurrent enrollment.

Introduction to the general principles of chemistry with emphasis on quantitative relationships. Includes properties of matter, chemical bonding and structure, equilibria, oxidation-reduction, kinetics, along with aspects of organic and biochemistry. 3 hours lecture; 3 hours laboratory.

### **CH 230 \*Analytical Chemistry/4 Units**

Prerequisite: Chemistry 122

Principles of quantitative chemical analysis including theory and practice of separation processes and analytical determinations involving gravimetric, volumetric, colorimetric and electroanalytical procedures. 2 hours lecture, 6 hours laboratory.

### **CH 240-241 \*Organic Chemistry/4-4 Units**

Prerequisite: CH 122 CH 240 is a prerequisite for CH 241.

An introduction to the chemical compounds of carbon. Structural formulae, nomenclature, special configurations of molecules, synthesis and the relation between different classes of organic compounds are emphasized. 3 hours lecture; 3 hours laboratory.

## **COOPERATIVE EDUCATION**

### **CE 110 Internship in Cooperative Education/1-16 Units**

Prerequisite: Prior approval of Cooperative Education Coordinator. Student should enroll concurrently in CE 120 unless excused by coordinator. Internship credit is provided in career areas, such as manufacturing, construction, marketing, business and office, teacher-aide, fine arts and humanities, public service, social work, and criminal justice.

## **CE 120 Seminar in Cooperative Education**

Prerequisite: Permission of Co-op Coordinator. Student should enroll concurrently in CE 110 unless excused by coordinator.

Basic processes and concepts of the world of work; job application, job responsibilities, human relations, career areas and supervisory development will be discussed and explored.

Credit is included in the units granted for Co-op 110.

## **CONSUMER EDUCATION**

### **CN 110 Consumer Education/3 Units**

Prerequisite: None

A course designed to create an awareness of the problems facing the modern consumer. Areas of consumer rights and remedies covered include: government; business relations contracts, money banking and credit, saving and investing; health services, and specific major purchases made by the consumer.

3 hours lecture.

### **CN 120 Consumers and the Marketplace/3 Units**

An analysis of consumer products and the features which affect purchasing decisions; a development of the remedies available to the consumer for defective or marginally acceptable products; and a presentation of current ways that the consumer is affecting the marketplace.

3 hours lecture.

### **CN 130 Consumers and Their Health/3 Units**

Reading and discussions on various topics related to individuals health care needs. Focus on consumer approach to selecting and establishing health care services for maintenance of health.

Available resources, services, and alternative health care options.

3 hours lecture.

### **CN 140 Consumers and Their Money/3 Units**

Prerequisite: Survey of Consumer Education or permission of the instructor

A Management by Objective approach to lifetime financial planning for the individual or family group emphasizing the basic of budgeting for necessary expenditures.

3 hours lecture.

### **CN 210 Consumers and Their Environment/3 Units**

An analysis of the various factors in housing and the basic elements (air, water, etc.) necessary to sustain life which have an impact on the physical and emotional well-being of the individual.

3 hours lecture.

### **CN 220 Consumers and Their Government/3 Units**

An informed approach to maximizing the individuals participation in benefit programs; to minimize tax impact and other limitations on the consumer's rights imposed by government; an exploration

of ways to effectuate change in the system through concerted political or individual action.

3 hours lecture.

## **COUNSELING**

### **CO 103 Personality and Adjustment/3 Units**

Prerequisite: None

A study of basic theoretical principles of psychology and their application to human behavior and growth. Emphasis on scientific psychology's contributions to more effective professional and personal relationships. Group activities and self-evaluation included. Not to be substituted for PY 101 or 102. Transfers as an elective.

3 hours lecture.

### **CO 121 Career and Life Planning/3 Units**

Prerequisite: None

Explores career opportunities and assists students in deciding on and planning for their chosen careers.

3 hours lecture.

### **CO 199-299 Individual Studies/1-4 Units**

Prerequisite: Approval of the department chairman and instructor

The student will complete a research problem or an outlined course of study under the direction of a faculty member. The contract for the individual study must be agreed upon by the student, the instructor and the department chairman prior to initiation of the study. May be repeated for credit.

## **CRIMINAL JUSTICE**

### **CJ 100 Introduction to Police Science/3 Units**

Prerequisite: None

A survey of the history of police science in Europe and the United States. Reviews medieval to modern law enforcement, philosophies, and techniques. Offers biographical sketches of leaders in law enforcement, their theories on crime and delinquency. A short view of the criminal justice system, criminal law, police organization and organized crime in America.

3 hours lecture.

### **CJ 121 Introduction to the Criminal Justice System/3 Units**

Prerequisites: None

An introduction to elements of the Criminal Justice System: police, courts, corrections. Duties and functions of each. Investigative process, arrest, prosecution, defense attorney, grand jury, petit jury, judge, probation and parole, sentencing, corrections process.

3 hours lecture.

### **CJ 122 Police Patrol Function/3 Units**

Prerequisites: None

A study of the history and theory of patrol, duties and responsibilities of the patrol division, communications,

development of observational powers, care and use of protective weapons, patrol vehicles, other equipment. Handling of emergency requests for assistance, vehicle stops, burglary, robbery, sex offenses, the mentally ill, and other kinds of situations.

3 hours lecture.

### **CJ 124 Supervision for Police/3 Units**

Prerequisites: CJ 122, or permission of instructor.

A study of the duties and responsibilities of the line supervisor (sergeant). His role in management, supervisor selection, motivation, leadership, morale, discipline, interviewing and counseling, grievances, performance appraisal, and training.

3 hours lecture.

### **CJ 125 Private Security, Principles and Practices/3 Units**

Prerequisites: None

An introduction to history, nature, scope of modern private security, security of plants, buildings, grounds, internal loss, defense systems, fire and safety factors. Career opportunities in retail, hospital, cargo, computer security. Course offered on request of sufficient number of students.

3 hours lecture.

### **CJ 148 Institutional Corrections/3 Units**

Prerequisite: None

A study of the history of punishment, the modern approach to correctional science, punishment as retribution, recidivism rates, rehabilitation through training and education, prisoner's rights, the processes of probation and parole.

3 hours lecture.

### **CJ 200 Criminal Law I/3 Units**

Prerequisite: None

A general overview of criminal procedure, the court system, arrest, search and seizure. Main emphasis will be upon substantive criminal law, the various elements of particular crimes as set forth generally in common law and particularly as applied to Arizona Revised Statute, Criminal Code Title 13.

3 hours lecture.

### **CJ 201 Criminal Law II/3 Units**

Prerequisite: None

Study of the three main working areas of procedural law for police officers; arrest, search, and seizure. Rules of criminal procedure and precedent cases are studied in detail.

3 hours lecture.

### **CJ 227 Rules of Evidence/3 Units**

Prerequisite: None

Examination of the rules of evidence, as applied in the courtroom to the evidence compiled by the police officer in the investigation of criminal offenses. Trial procedure, kinds of evidence, privileged

communications, hearsay rule, exclusionary rule, confessions and admissions are studied.

3 hours lecture.

### **CJ 230 Juvenile Procedures/3 Units**

Prerequisite: None

A basic approach to juvenile delinquency, its causes, and proposed corrections. The police role with juveniles, the juvenile officer, judges, and their functions are examined.

3 hours lecture.

### **CJ 235 Physical Evidence I (Photography)/3 Units**

Prerequisite: None

An introduction to basic black and white photography and darkroom procedures. Crime science, accident and physical evidence photography will be emphasized. Developing, printing, and enlarging will constitute laboratory work. 35 mm camera required.

1 hour lecture, 4 hours laboratory.

### **CJ 236 Physical Evidence II (Recognition, Collection, Preservation)/3 Units**

Prerequisite: CJ 122, 227, or permission of instructor.

A study of the scientific method of crime scene search. Methods of recognition, collection recording, marking or tagging for identification, packaging, and transporting to the crime laboratory of physical objects, such as: weapons, clothing, physiological fluids, hair, fingerprints. Fingerprints: latent and visible, patterns, lifting and preserving methods. Casting of impressions; shoe, tire, tool marks. Students will locate, dust, lift latent fingerprints, make a plaster cast, and investigate a mock crime scene for physical evidence.

2 hours lecture; 1 hour laboratory.

### **CJ 238 Criminal Investigation/3 Units**

Prerequisite: CJ 100 or 121, 122, 200-201, 227, or permission of instructor.

An introduction to the elements of felony crime investigation. Methods of preliminary and follow-up investigation. Interviewing, interrogating of witnesses, informants, suspects (subject to legal aspects). Sources of information; witnesses, informants, agencies. Method of criminal operation in various crimes: arson, burglary, homicide, sex crimes, robbery, and various other serious crimes.

3 hours lecture.

### **CJ 240 Police-Community Relations/3 Units**

Prerequisite: SO 101

A study of the evolving role of the police, need for positive police-community relations, misuse of police authority, public attitude toward police, police and racial minorities, police and civil disorder, police isolation, relations with news media, police-public relations programs, police-community programs, crime prevention programs.

3 hours lecture.

### **CJ 249 Constitutional Law for Police/3 Units**

Prerequisites: CJ 121, 200, or permission of instructor.

A basic study of the U.S. Constitutional amendments most applicable to police duties. Emphasis on amendments 1, 4, 5, 6, 8, and 14. In-depth study of U.S. Supreme Court decisions regarding freedom of speech, assembly, arrest, search and seizure, due process of law and right to silence, an attorney and fair and speedy trial.

3 hours lecture.

### **CJ 252 Accidents, Citations, Disorders/3 Units**

Prerequisite: None

A study of traffic law; vehicle and operator registration, rules of the road. Traffic engineering, control and management, signals, signs, roads, streets, highways. Elements of accident investigation, prevention. Problems of groups, crowds, mobs, riots. Methods of control and dispersal.

3 hours lecture.

### **CJ 254 Psychology in Law Enforcement/3 Units**

Prerequisite: None

A study of the changing role of police, attitude toward human behavior, normal personality, conflicts, defense mechanisms, abnormal behavior, personality disorders, neuroses, psychoses. Psychopathic, deviant, drug dependancy, paranoid violent, suicidal behavior. Behavioral aspects of disasters, riots, and riot control, legal aspects of abnormal behavior.

3 hours lecture.

### **CJ 256 Criminology/3 Units**

Prerequisites: SO 101

An introduction to criminal delinquent behavior, crime statistics gathering, types of crime and criminals; traditional, white collar, organized crime. Theories of criminal behavior, influence or non-influence of, home, school, community, church, age, race, and sex.

3 hours lecture.

### **CJ 270 Police Organization and Administration/3 Units**

Prerequisite: CJ 100, 122, 124

A study of the basic administrative and organizational concepts being maintained and new advances proposed in the organization of police services, the operations, administrative, auxiliary, and plant facilities in large and small police departments.

3 hours lecture.

## **DRAFTING**

### **DT 100 Blueprint Interpretation and Basic Drafting/3 Units**

Prerequisite: None

Introductory course in blueprint reading and interpretation, basic drafting skills including lettering, sketching, orthographic

projection, dimensioning, pictorial drawing, related to mechanical and architectural requirements.

2 hours lecture; 4 hours laboratory.

### **DT 112 Technical Graphics I/3 Units**

Prerequisite: None

Introductory course in technical drafting including orthographic and axonometric projection, geometric construction, sketching, lettering, dimensioning, section and conventions, with emphasis on industrial drafting standards.

2 hours lecture, 4 hours laboratory.

### **DT 113 Technical Graphics II/3 Units**

Prerequisite: DT 112

Study of auxiliary and oblique surfaces, intersections, detailing standards, fasteners, materials, and dimensioning. Elements of descriptive geometry are stressed.

2 hours lecture; 4 hours laboratory.

### **DT 120 Spatial Relationships/3 Units**

Prerequisite: DT 112 or concurrent with

Solutions of points, lines and planes, single-curved, double-curved and warped surfaces. Emphasis upon mechanical, civil and mining engineering application.

2 hours lecture; 4 hours laboratory.

### **DT 130 Drafting for Electronics/3 Units**

Prerequisite: DT 112 or concurrent with

A study of drafting in the electrical and electronic industry including components and their symbols, schematic and logic diagrams, printed circuit board layout and tape-up, silkscreen, detail and assembly drawings of P.C. boards.

2 hours lecture; 4 hours laboratory. (laboratory fee: \$5)

### **DT 200 Drafting for Manufacturing/4 Units**

Prerequisite: DT 112, GT 101

A study of fabrication procedures, machine elements, and the influence of manufacturing on design, includes precision dimensioning and tolerancing, detail and assembly drawings, engineering change orders.

2 hours lecture; 6 hours laboratory.

### **DT 210 Topographical Design and Drafting/4 Units**

Prerequisite: None

A combination of basic surveying and topographical drafting including mapping, subdivision design, profiling, contouring, sectioning, area calculations, horizontal and vertical curve analysis.

2 hours lecture; 6 hours laboratory.

### **DT 220 Construction Drafting/3 Units**

Prerequisite: DT 100 or DT 112

Principles and applications of architectural and structural details

as they apply to the residential and structural building industry.  
2 hours lecture; 4 hours laboratory.

### **DT 230 Electro-Mechanical Design/3 Units**

Prerequisite: DT 112 and DT 130 or concurrent with

A study of electronic packaging and enclosures including chassis, cabinets, control panels, cables, and wiring diagrams.

2 hours lecture; 4 hours laboratory.

### **DT 245 Tool Design/4 Units**

Prerequisite: DT 120 and GT 101, or permission of the instructor.

A study of standardized tooling components materials including jigs and fixtures, gages, punch and die sets with emphasis on design of the various tooling elements.

2 hours lecture; 6 hours laboratory.

## **DRAMA**

### **DR 101 Acting/3 Units**

Prerequisite: None

Introduction to theories of dramatic art and practice in acting.

3 hours lecture.

### **DR 102 Acting/3 Units**

Prerequisite: None

Introduction to development of characterization in all types of dramatic literature and practice in acting.

3 hours lecture.

### **DR 103 Introduction to Theatre/3 Units**

Prerequisite: None

History and tradition of western theatre with analysis and discussion of representative drama, classical to contemporary. Introduction to Theatre fulfills three units of the humanities and fine arts requirement for the A.A. and A.S. degrees.

3 hours lecture.

### **DR 104 Principles and Techniques of Play Production/3 Units**

Prerequisite: None

Introduction to the theory and practice of directing, set design, costuming, stage lighting, make-up and production organization.

3 hours lecture.

### **DR 105 Theatre Dance/1 Unit**

Prerequisite: None

Study and practice in stage movement and choreography for theatrical productions. Designed for students in Musical Theatre productions. Meets one day a week for three hours. (Not intended for transfer credit.)

### **DR 110 Theatre Workshop/1-3 Units**

Prerequisite: Permission of instructor.

Actual participation in a college dramatic production either in an

acting or a production role. No student will be awarded more than FOUR such credits.

### **DR 199-299 Individual Studies/1-4 Units**

Prerequisite: Approval of the department chairman and instructor.

The student will complete a research problem or an outlined course of study under the direction of a faculty member. The contract for the individual study must be agreed upon by the student, the instructor and the department chairman prior to initiation of the study. May be repeated for credit.

## **ECONOMICS**

### **EC 201 Principles of Economics I/3 Units**

Prerequisite: None

Surveys the United States economic system as a whole, including employment, income, spending, Gross National Products, business cycles, inflation and depression, fiscal policy, and money and banking. Emphasis on the households, business and government sections.

3 hours lecture.

### **EC 202 Principles of Economics II/3 Units**

Prerequisite: None

Economic principles as applied to the individual units in our system. Examines market structure and price theory of the firm under competition, oligopoly, and monopoly. Also examines problems and issues concerning agriculture, labor unions, the urban area, poverty, insecurity, and income distribution.

3 hours lecture.

### **EC 199-299 Individual Studies/1-4 Units**

Prerequisite: Approval of the department chairman and instructor.

The student will complete a research problem or an outlined course of study under the direction of a faculty member. The contract for the individual study must be agreed upon by the student, the instructor and the department chairman prior to initiation of the study. May be repeated for credit.

## **ELECTRONICS**

### **ET 100 Electronics Foundations/3 Units**

Prerequisite: Concurrent enrollment in Tech. Math or equivalent.

An introduction to electronic principles including DC and AC circuits, passive and active circuits, and applications that will give the student a general concept of the electronics field. For non-electronics majors.

3 hours lecture.

### **ET 102 Radio Communications I/3 Units**

Prerequisite: None

A study of the FCC rules and regulations required to obtain a 3rd class license, and an introduction to the basic technical knowledge applicable to a 2nd class FCC license

3 hours lecture.

### **ET 103 Radio Communications II/3 Units**

Prerequisite: ET 102 or equivalent.

A study of FCC radio telephone license requirements emphasizing electronic theory regulations, and typical examination questions.

3 hours lecture.

### **ET 105 Introduction to DC Circuits/3 Units**

Prerequisite: ET 110 or MA 110

The analysis of direct current resistive circuits, emphasizing Ohm's Law, Kirchhoff's Law, Thevenin's, Norton's, and superposition theorems.

2 hours lecture; 3 hours laboratory.

### **ET 106 Introduction to AC Circuits/4 Units**

Prerequisite: ET 105 (ET 105 may be taken concurrently)

An introduction to alternating current passive circuits, and the application of trigonometry and vectors to circuit solutions.

3 hours lecture; 3 hours laboratory.

### **ET 110 Mathematics for Electronics/3 Units**

Prerequisite: One year of high school algebra.

A study of the algebraic principles necessary to analyze electronic circuitry with emphasis on scientific notation, exponents, linear equations, functions and graphs, and simultaneous equations.

3 hours lecture.

### **ET 120 Advanced Mathematics for Electronics/3 Units**

Prerequisite: ET 110 or equivalent.

The application of basic trigonometric relations to electronics with emphasis on network problems and analysis of alternating current circuits.

3 hours lecture.

### **ET 122 Semiconductors and Transistors/4 Units**

Prerequisite: ET 106 and ET 110 or MA 110

A comprehensive study of semiconductor devices stressing the qualitative and quantitative analysis of semiconductor circuits with emphasis on DC biasing, small signal diode and transistor circuits, load lines, approximate hybrid parameters and multistage systems.

3 hours lecture; 3 hours laboratory.

### **ET 125 Electronic Circuits and Systems/5 Units**

Prerequisite: ET 106 and concurrent enrollment in ET 120.

The analysis of large signal diode circuits, filter networks, voltage and current regulation, field effect transistors, the Miller Effect, frequency response and feedback.

3 hours lecture; 6 hours laboratory.

### **ET 231 Pulse Circuits/4 Units**

Prerequisite: ET 122

A study of waveforms, RC and RL networks, passive and active

pulse circuitry, diode and transistor switching circuits, nonlinear waveshaping and multivibrators.

3 hours lecture; 3 hours laboratory.

### **ET 233 Digital Circuits and Systems/4 Units**

Prerequisite: ET 122.

A study of number systems, Boolean algebra, combinational logic, sequential logic and the circuit characteristics of digital integrated circuitry.

3 hours lecture; 3 hours laboratory.

### **ET 243 Modern Electronic Devices/4 Units**

Prerequisite: ET 122

A study of modern electronic devices stressing differential amplifiers, feedback, operational amplifiers, unijunction transistors, silicon controlled rectifiers, triacs and other devices currently used in industry.

3 hours lecture; 3 hours laboratory.

### **ET 245 Communication Electronics I/4 Units**

Prerequisite: ET 120, 122, 125 (ET 120 may be taken concurrently)

The application of qualitative and quantitative theoretical concepts to practical communication. AM and FM receiver systems, stressing voltage and power amplifiers, feedback, oscillators, resonance, filters, coupling synthesizers and phaselock techniques.

3 hours lecture; 3 hours laboratory.

### **ET 247 Communication Electronics II/4 Units**

Prerequisite: ET 245

A continuation of Communication Electronics I, emphasizing theoretical and practical RF power amplifier circuits, AM and FM transmitter systems, transmission lines, antennas, wave propagation, and special communications circuits.

3 hours lecture; 3 hours laboratory.

### **ET 260 Avionics/4 Units**

Prerequisite: ET 233, 243, and 245

The application of theoretical concepts to complex electronic systems with emphasis on the use of equipment manuals, schematic diagram reading, use of industrial test equipment and circuit analysis of aircraft transceivers.

3 hours lecture; 3 hours laboratory.

### **ET 265 Microprocessors and Microcomputers/4 Units**

Prerequisite: ET 233

An introduction to the architecture of microprocessors and the organization, programming, interfacing, and control application of microcomputers.

3 hours lecture; 3 hours laboratory.

## **ENGLISH**

### **EN 001 Basic Study Skills Module/1 Unit**

Prerequisite: None

Basic techniques of active listening, concentrating, scheduling, note-taking, test-taking and a textbook study strategy including making a summary, outline and various types of review questions.

### **EN 004 Spelling Improvement Module/1 Unit**

Individualized spelling improvement to help students conceptualize words.

### **EN 010 English Fundamentals/3 Units**

Prerequisite: None

An intensive review of grammar, spelling, vocabulary, and other fundamentals, with emphasis on writing paragraphs and short themes. Cannot be transferred to a four-year institution.

### **EN 011, 012, 013, 014 Conversational English/3-3-3-3 Units**

Prerequisite: None. Some English reading ability is helpful.

Practice in spoken English and a study of English pronunciation, grammar, and usage. Placement depends on student level of proficiency.

### **EN 020 Reading Fundamentals/2-3 Units**

Prerequisite: None

Review of basic reading skills for the content areas with emphasis on improving comprehension, vocabulary and study skills.

### **EN 022 Individualized Reading/2-3 Units**

Prerequisite: EN 020 or an equivalent reading score.

Emphasis on personalized reading improvement, increased rate of comprehension, college level vocabulary, inductive and deductive paragraph organization and some critical reading skills.

### **EN 027 Speaking and Understanding English/6 Units**

Prerequisite: None

A study of basic grammar, vocabulary and listening comprehension with controlled conversation and language lab reinforcement of aural/oral patterns.

### **EN 028 Reading English/3 Units**

Oral mastery of reading materials used in ESL 011 and 012 and Humanities 010 to reinforce understanding of English structures and relevant cultural vocabulary.

### **EN 029 Elementary Writing Skills/3 Units**

An introduction to written sentence patterns and paragraph development in English.

### **EN 030 Basic Communications/3 Units**

Prerequisite: None

An introduction to verbal and non-verbal systems of communication: elementary speech, TV, radio, film, art,

photography. Not transferable to a four-year institution.  
3 hours lecture.

### **EN 031 Speaking and Understanding English/3 Units**

Prerequisite: EN 027 or recommendation from testing

An intense, rapid review of English grammar and expansion of listening comprehension with conversation and language laboratory reinforcement of aural/oral structures.

### **EN 032 Reading English/3 Units**

Prerequisite: En 028 or recommendation from testing

A continuation of skills introduced in Level I with emphasis on vocabulary development, paragraph reading, expository and descriptive discourse, and techniques of critical reading.

### **EN 033 Paragraph Writing/3 Units**

Prerequisite: En 029 or recommendation from testing

A continuation of sentence writing, Level I, with emphasis on topic sentences, methods of paragraph development, cognitive skills and logical organization.

### **EN 034 Reading English/3 Units**

Prerequisite: En 032 or recommendation from testing

Review of basic reading skills, emphasis on improving comprehension, rate, vocabulary, study skills, and reading in content areas.

### **EN 040 Teaching of ESL/3 Units**

A study of basic approaches to the teaching of English as a second language and ESL material preparation, for paraprofessional tutors.

### **EN 100 The Research Paper/1 Unit**

Prerequisite: En 020 or its equivalent

A study of research methods with emphasis on bibliography, note taking and footnoting, organizing materials and developing research topics. Three hours a week for five weeks.

### **EN 101 Composition/3 Units**

Prerequisite: Placement by Communications Division, EN 010 or its equivalent based on placement scores.

A review of usage and syntax, methods of organization, and patterns of exposition.

3 hours lecture.

### **EN 102 Composition/3 Units**

Prerequisite: EN 101 with a grade of C or better.

A continuation of EN 101 with emphasis on argumentation, persuasion and a research paper.

3 hours lecture.

### **EN 103 Advanced Composition/3 Units**

Prerequisite: EN 101 or EN 102 and recommendation of English faculty.

Critical writing and analysis of various literary genre. Credit for EN 104 will not be granted if the student has taken EN 103.

3 hours lecture.

### **EN 104 Introduction to Literature/3 Units**

Prerequisite: EN 102 or permission of instructor.

A study of literary genre: drama, poetry, fiction, criticism. Emphasis on writing about literature. Credit for EN 104 not granted if the student has taken EN 103.

3 hours lecture.

### **EN 106 Critical Reading & Writing**

Prerequisite: EN 101 and 010 or an equivalent reading score.

Study of reading and writing as an analytical, interpretative and evaluative process for short research units which require the reader to make rational judgments about content and style based upon appropriate critical criteria.

### **EN 107 Creative Writing/3 Units**

Prerequisite: EN 101 and permission of instructor.

Lecture and workshop emphasizing composition of poetry, short stories, and essays.

3 hours lecture.

### **EN 108 Written Communications and Reports/3 Units**

Prerequisite: Counselor placement: Airframe and Powerplant students only.

Development of the skills of effective written communication, with emphasis on the organization of factual materials. Special attention to the vocabulary used in the A & P program.

3 hours lecture.

### **EN 109 Written Communications and Reports/3 Units**

Prerequisite: Criminal Justice students only. 5 units of EN 101 and EN 020 or 101 and 102. One year of practice in the organization and mechanics of written communications and one year of courses in Criminal Justice.

Concentrated practice in the form of police reports, including vocabulary study and exact observation of cases.

3 hours lecture.

### **EN 110 Written Communications & Reports/3 Units**

Prerequisite: EN 101 or permission of instructor

Development of the skills of effective written communications with emphasis on clarity and accuracy. Primarily for military management students.

3 hours lecture.

### **EN 111 Grammar, Usage and Punctuation/3 Units**

Prerequisite: EN 110 or placement in EN 101

A general review of modern English punctuation, grammatical structure, diction and modern American English usage.

3 hours lecture.

### **EN 112 Children's Literature/3 Units**

Prerequisite: None

A survey of the most important works in children's literature.

3 hours lecture.

### **EN 115, 116 The Study of English Words/3-3 Units**

Prerequisite: None

Designed to increase the student's command of modern English. Emphasis in 115 is on English words with Latin origins, and 116 the emphasis is on English words with Greek origins. 115 not a prerequisite for 116.

3 hours lecture.

### **EN 117 English Composition for Foreign Students 3/1 Units**

An intensive study of grammar, vocabulary and principals of expository writing for students whose native language is not English.

### **EN 118 English Composition for Foreign Students 11/3 Units**

Prerequisite: EN 117 or permission of instructor

A composition course for foreign students with emphasis on argumentation, persuasion and a research paper.

### **EN 210 The Bible as Literature/3 Units**

A study of the Bible as a work of literature. Emphasis will be placed on historical development, types of literature, allusions, and its impact upon later writers.

### **EN 220, 221 British Literature/3-3 Units**

Prerequisite: EN 101

A survey of the major authors from the beginnings to the twentieth century. EN 220: Medieval through 17th century; EN 221: 18th century to 20th century. Need not be taken in sequence.

3 hours lecture.

### **EN 222 Introduction to Shakespeare/3 Units**

Prerequisite: Six units of freshman English.

An introduction to the major comedies, histories, and tragedies of Shakespeare.

3 hours lecture.

### **EN 224, 225 American Literature/3-3 Units**

Prerequisite: EN 101

A survey of major authors. EN 224: Colonial period to 1860; EN 225: 1860 to present. Need not be taken in sequence.

3 hours lecture.

### **EN 226 World Literature/3 Units**

Prerequisite: Six units of freshman English or permission of instructor.

A study of some of the master works of literature through the Renaissance, including selections by Homer, the Greek tragic writers, Virgil, Dante, Chaucer, Cervantes, Shakespeare

3 hours lecture.



### **EN 227 World Literature/3 Units**

Prerequisite: Six units of freshman English or permission of instructor.

A study of eight major literary works from the Renaissance to the present, including selections of Voltaire, Goethe, Stendahl, Dickens, Dostoevsky, Turgenev, Flaubert, Mann. EN 226 is not a prerequisite to EN 227.

3 hours lecture.

### **EN 199-299 Individual Studies/1-4 Units**

Prerequisite: Approval of the department chairman and instructor.

The student will complete a research problem or an outlined course of study under the direction of a faculty member. The contract for the individual study must be agreed upon by the student, the instructor and the department chairman prior to initiation of the study. May be repeated for credit.

EN 104, EN 210, EN 220, 221, EN 222, EN 224, 225, EN 226, 227. These courses may be used to fulfill three to six hours of the humanities and fine arts requirement for the A.A. and A.S. degrees.

## **ENVIRONMENTAL STUDIES**

### **ES 101 General Environmental Studies/3 Units**

Prerequisite: None

A general study of man's impact upon the environment, pollution problems and possible solutions related to population and basic ecological principles. Designed to increase the awareness of man's interdependence with nature and to create informed, balanced understanding of the current trends of environment degradation.

3 hours lecture.

### **ES 110 Wilderness Living/3 Units**

Prerequisite: Permission of instructor.

A study of man's relation to the wilderness through direct experience and through readings in and discussion of related works of Thoreau, Muir, Leopold and others; study of backpacking techniques and equipment with emphasis on living in the wilderness. Students must furnish their own equipment.

3 hours lecture.

## **FIRE SCIENCE TECHNOLOGY**

### **FS 101 Introduction to Fire Science/3 Units**

Prerequisite: None

A study of the historical and scientific background of the Fire Protection field. Its development in American history will be studied along with its expanding future role. Governmental, industrial and private fire protection organizations will be examined. Modern methods in fire prevention and protection will be explored with students being introduced to the employment

and promotional opportunities presently available in the Fire Protection field.

3 hours lecture.

### **FS 106 Fundamentals of Fire Prevention/3 units**

Prerequisite: None

A survey of the basic principles of Fire Prevention with special emphasis on the interpretation and enforcement of fire regulations. Hazards dealing with ordinary and special occupancies, supplemented with special problems and field trips.

3 hours lecture.

### **FS 110 Fire Operations I/3 Units**

Prerequisite: None

Introduction to the operations and individual skills involved in the extinguishment of fire, including the study of areas of fire operations and an actual hands-on approach to the use of different types of fire equipment.

3 hours lecture.

### **FS 111 Fire Operations II/3 Units**

Prerequisite: FS 110

A continuation of FS 110 with additional emphasis on community fire defense systems, use of ropes, hoses, ladders, and breathing apparatus in fire service. Problems in fire extinguishment, ventilation, salvage and overhaul will be reviewed utilizing classroom and field exercises.

3 hours lecture.

### **FS 120 Fire Service Hydraulics/3 Units**

Prerequisite: FS 110 and 111

Includes a review of basic math; hydraulic laws and formulas as applied to the fire service; application of formulas as applied to the fire service; application of formulas and mental calculations to hydraulic problems; water supply problems and underwriters requirements and pumps.

3 hours lecture.

### **FS 130 Introduction to Fire Suppression/3 Units**

Prerequisite: None

This course stresses the characteristics and behavior of fire, fire hazard properties of ordinary materials, extinguishing agents, fire suppression organization and equipment, basic fire fighting tactics, and public relations as affected by fire suppression.

3 hours lecture.

### **FS 150 Hazardous Materials I/3 Units**

Prerequisite: None

This is a review of the fundamentals of chemistry used in fire service, types of chemicals and processes, laws at Federal, State, and local levels pertaining to use, storage and transportation of chemicals.

3 hours lecture.

### **FS 160 Hazardous Materials II/3 Units**

Prerequisite: FS 150

This course is the second semester of the review of fundamentals of chemistry used in fire science. The topics covered include hazards of radioactives, precautions to observe in fighting fires involving hazardous materials, and laboratory demonstrations in incompatibles.

3 hours lecture.

### **FS 200 Fire Apparatus and Equipment/3 Units**

Prerequisite: FS 101 and FS 106

A course designed to instruct students in the selection, care, construction, operation and maintenance of fire department equipment. The basic principles of equipment, trouble-shooting, and testing will be investigated.

3 hours lecture.

### **FS 220 Rescue Practices/3 Units**

Prerequisite: None

Included in this course are life saving practices pertaining to the fire company, training for resuscitator squads, rescue equipment, the Fire Department's role in civil defense and other disaster acts, chemicals and diseases that affect breathing, and breathing apparatus.

3 hours lecture.

### **FS 240 Fire Fighting Tactics and Strategy/3 Units**

Prerequisite: FS 130

This is a course in the art of using manpower, equipment, and apparatus on the fire ground. Included are practical methods of how to attack, control, and extinguish structural, oil and other types of fires. Field exercises included.

3 hours lecture.

### **FS 260 Fire Investigation/3 Units**

Prerequisite: Current employment with a fire department or permission of the instructor.

Introduction to fire cause determination (accidental, suspicious, and incendiary), also arson and incendiarism, with related procedures for handling each situation.

3 hours lecture.

## **FRENCH**

### **FR 101, 102 Elementary French/4-4 Units**

Prerequisite: FR 101 is a prerequisite for FR 102.

For beginning students, stress on conversation, comprehension of the spoken language, pronunciation, grammar, reading skills and composition.

## **GENERAL TECHNOLOGY**

### **GT 100 Technical Mathematics I/3 Units**

Prerequisite: One semester of high school algebra or permission of professor.

A review of arithmetic and the study of fundamentals of algebra and geometry applied to practical problems of the drafting room, machine shop, and engineering.

3 hours lecture.

### **GT 101 Technical Mathematics II/3 Units**

Prerequisite: GT 100 or permission of professor.

A continuation of GT 100 which emphasizes application of trigonometry to practical problems in industry; includes use of logarithms and calculators to solve problems related to screw threads, gears, and technical problems in engineering.

3 hours lecture.

### **GT 105 Manufacturing Materials and Processes I/3 Units**

Prerequisites: None

Manufacturing materials, operations, procedures, and processes with emphasis on their relationship to drafting and design.

3 hours lecture.

### **GT 106 Manufacturing Materials and Processes II/3 Units**

Prerequisite: None

Manufacturing processes involving finished parts including machining processes and automated manufacturing techniques as they apply to drafting and design.

3 hours lecture.

## **GEOGRAPHY**

### **GE 101 Physical Geography/3 Units**

Prerequisite: None

An introduction to the various features of the earth's physical environment. Including the origin and development of landforms, the composition of the earth's crust, weather, climate, vegetation, soils and the mineral resources used by man.

3 hours lecture.

### **GE 102 Cultural Geography/3 Units**

Prerequisite: None

A study of the cultural regions of the world and the important world geographical characteristics.

3 hours lecture.

### **GE 104 Political Geography/3 Units**

Prerequisite: None

A study of political phenomena in different locations in conjunction with the physical features of the earth's landscape.

3 hours lecture.

## **GE 105 Economic Geography/3 Units**

Prerequisite: None

A survey of the world's economies, subsistence economic activities, commercial gathering of animals and plants, commercial bioculture, mining, manufacturing, transportation and trade, and tertiary economic activities. Centers around basic economies and their relationship to the natural resources of the area involved and the relationship of the physical features; climate, soil, vegetation, and topography.

3 hours lecture.

## **GE 111 Mexico and Central America/3 Units**

Prerequisite: None

An introductory study of the culture, environment, and economic activities of Mexico, the Central American Republics, and the Caribbean Islands.

3 hours lecture.

## **GE 112 Geography of South America/3 Units**

Prerequisite: None

An introduction to the culture and economic activities of the peoples and nations of South America, with emphasis on the physical patterns, urban growth, industry, agriculture, and mineral resources.

3 hours lecture.

## **GEOLOGY**

\*\$10 lab fee.

### **GY 121 \*Physical Geology/4 Units**

Prerequisite: None

Principles of physical geology for both general-interest students and those who plan to major in geology. Includes material of interest on recent trends in earth science and the environmental sciences. Parallels ASU GL 101, NAU GL 121, and UA GS 1A/2A.

3 hours lecture; 3 hours laboratory.

### **GY 122 \*Historical Geology/4 Units**

Prerequisite: GY 121 recommended but not required

Presents the most current model of the development of the surface of our planet and the life found upon it. For general-interest students and those majoring in geology, archaeology, or the biological sciences. Parallels ASU GL 102, NAU GL 122, and UA GS 1B/2B.

3 hours lecture; 3 hours laboratory.

### **GY 199-299 Individual Studies/1-4 Units**

Prerequisite: Approval of the department chairman and instructor.

The student will complete a research problem or an outlined course of study under the direction of a faculty member. The contract for the individual study must be agreed upon by the

student, the instructor and the department chairman prior to initiation of the study. May be repeated for credit.

## **GERMAN**

### **GR 101, 102 Elementary German/4-4 Units**

Prerequisite: GR 101 is a prerequisite for GR 102.

Grammar, reading skills, comprehension of the spoken language, proper pronunciation, composition, and conversation.

3 hours lecture; 2 hours laboratory.

## **HEALTH**

### **HE 142 Personal Health/3 Units**

Prerequisite: None

A survey of body functions in health and disease; common diseases and their early symptoms, consideration of personal, physical and mental health; effect of exercise and fatigue, selection of proper foods, marriage, and parenthood.

3 hours lecture.

### **HE 170 First Aid and Safety/3 Units**

Prerequisite: None

The standard and advanced Red Cross course in first aid with emphasis on practical application of theory in bandaging, litter-bearing, artificial respiration and other types of emergency care.

3 hours lecture.

### **HE 171 School and Community Health/3 Units**

Prerequisite: None

A study of the basic plan of the school health program; health services, health instruction and healthful school environment. Analysis of the role of the teacher in relation to the school health program and the community health program.

3 hours lecture.

## **HEALTH TECHNOLOGY**

### **HT 173 Introduction to Health Care/3 Units**

Prerequisite: None

An introduction to health science fundamentals and exploration of health care delivery concepts and applications. Presents health as an individual, community and world service, relating concepts to health careers and delivery. Required by Allied Health Programs through SARAHELP.

3 hours lecture.

### **HT 174 Emergency Medical Technology/6 Units**

Prerequisite: None

The Emergency Medical Technology course is required for consortium programs in Operating Room Technology, Ophthalmic Dispensing Technology, Radiologic Technology and Respiratory Therapy. In addition, it is required for those persons wishing to be certified by the Arizona Corporation Commission to work on

ambulances. Covers basic knowledge of the symptoms of illness and injury and the concomitant procedures considered the responsibility of the Emergency Medical Technician. Includes basics of legal responsibilities, anatomy and physiology, triage, assessment and life-support systems. The course includes 80 hours of theory and practice. Students wishing Arizona Corporation Commission certification are required to take an additional 10 hours of in-hospital training and observation.

### **HT 176 Emergency Medical Training Refresher/2 Units**

Prerequisite: HT 174 or equivalent

A refresher course to maintain proficiency and to update and improve handling of the sick and injured by first response personnel.

1½ hours lecture; 1½ hours laboratory.

### **HT 177 First Aid Instructor Training/3 Units**

Prerequisites: HE 170, HT 174, HT 176, or permission of the instructor

This American National Red Cross Course, intended for persons certified in Advanced First Aid or Emergency Medical Technology, will prepare students to instruct all phases of American National Red Cross first aid.

3 hours lecture.

## **HISTORY**

### **HI 110 History of the United States to 1865/3 Units**

Prerequisite: None

A study of the development of American characteristics and nationality from the founding of the New World to the preservation of the Union in 1865, emphasizing the factors and forces which produced the Revolution, the Constitution, westward expansion, sectionalism and the Civil War.

3 hours lecture.

### **HI 111 History of the United States Since 1865/3 Units**

Prerequisite: None

A study of the social, economic, and political forces that moved the United States through the periods of Reconstruction and Industrialization and into the position of a world power, focusing on both domestic and foreign affairs in the country's last century of development.

3 hours lecture.

### **HI 115 Survey of the American West/3 Units**

Prerequisite: None

A study of the methods of penetration and the patterns of westward expansion and settlement. Analysis and criticism of the conquest, exploitation and settlement of the last frontiers, including the contribution of minority groups in the American West. The course will emphasize the Southwest.

3 hours lecture.

### **HI 116 The American Indian and the Frontier Movement/3 Units**

Prerequisite: None

A study of the cultural and military conflicts of Native American peoples from the earliest period of European invasions to the twentieth century. Analysis and criticism of these conflicts from many perspectives will emphasize the formation of American Indian identity, contributions of American Indians to U.S. history and contemporary movements for Native American unification.

3 hours lecture.

### **HI 126 Afro-American History/3 Units**

Prerequisite: None

A survey of Afro-American history since first century A.D., highlighting the major West African Nations and their relationship with Europe before, during, and after the discovery of the New World. Major emphasis on the rise and fall of slavery and the Afro-American's contribution from the Revolutionary War to the Civil War.

3 hours lecture.

### **HI 127 Afro-American History II/3 Units**

Prerequisite: HI 126

A survey of Afro-American history since the Civil War, highlighting the significant historical events and major forces that shaped the history of Black Americans. Major emphasis on the struggle for complete freedom and the Black American's contribution to the rise of American from the Civil War to the Vietnam conflict.

3 hours lecture.

### **HI 130 Arizona History/3 Units**

Prerequisite: None

The history of Arizona from the entrance of the Spaniards in 1539 to its emergence as a modern state in the Southwest.

3 hours lecture.

### **HI 140 Survey of Western Civilization From Ancient Times to the Reformation/3 Units**

Prerequisite: None

A discussion of the major historical trends from primitive society and the emergence of civilization through the Protestant Reformation, including such topics as the Aegean, Grecian, Roman, Medieval, and Renaissance civilizations with special emphasis upon the cultural development of mankind, and upon the relationship of these developments to subsequent history.

3 hours lecture.

### **HI 141 Survey of Western Civilization From 1715 to the Present/3 Units**

Prerequisite: None

A study of the significant cultural, political, social, economic and technological developments taking place since 1715, which have

helped shape the present world, including particular events in China, the Middle East and the Third World.

3 hours lecture.

### **HI 160 An Introduction to the History of the Soviet Union/3 Units**

Prerequisite: None

A survey of Russian history since 1916, emphasizing revolutionary movements leading to the Bolshevik Triumph (the early Soviet triumph), the early Soviet governments, the Stalin era, Russia in World War II, the Khrushchev Era, and the USSR in the contemporary world.

3 hours lecture.

### **HI 229 History of Mexico/3 Units**

Prerequisite: None

A study of political, economic, social, and cultural developments from Pre-Columbian civilizations to the War for Independence.

3 hours lecture.

### **HI 230 History of Mexico/3 Units**

Prerequisite: None

A study of political, economic, social, and cultural developments from the War for Independence to modern times.

3 hours lecture.

## **HUMANITIES\***

### **HU 011 Humanities in Modern American Life II/3 Units**

Prerequisite: HU 010 or recommendation from testing

Reading and discussion of material which has cultural content with consequent enlarging of vocabulary including the understanding of colloquialisms.

### **HU 101 Humanities in Contemporary Life/3-4 Units**

Prerequisite: EN 020 or equivalent.

A study of contemporary thought, literature, and art as they occur in mass media: journalism, television, and motion pictures. Four units of credit will be granted for students electing to submit critiques of required lectures, plays, motion pictures, concerts, and art exhibits.

3 hours lecture.

### **HU 105 Appreciation of Mexico** (See Spanish 155 for details)

### **HU 110 Introduction to Film/3 Units**

Prerequisite: None

A study of film as an art form and as a medium for the expression of ideas and an introduction to the principles of film criticism

3 hours lecture

### **HU 115 Cultural Heritage of the Southwest: Indian, Hispanic, American/3 Units**

Prerequisite: None

A general survey of the cultural heritage in the Southwest. A cultural look at the significant elements, events, historical figures, customs, ways and institutions that have contributed to the formation of the unique cultural heritage in the Southwest.

3 hours lecture.

### **HU 116 Folklore of the Southwest: Indian, Hispanic, American/3 Units**

Prerequisite: HU 115

A general study of the American folk traditions, legends, ballads and customs in the Southwest. A brief but penetrating look into the traditional folk beliefs, tales, legends, customs and superstitions that have historically characterized the American way of life in the Southwest.

3 hours lecture.

### **HU 205 Humanities/4 Units**

Prerequisite: EN 102 and sophomore standing.

A study of the development of art, literature, and music in the western world from classical times to the late Middle Ages with particular emphasis on the development of concepts of freedom and justice.

4 hours lecture.

### **HU 206 Humanities/4 Units**

Prerequisite: EN 102 and sophomore standing.

A continuation of HU 205 to the contemporary period.

May be taken independently of HU 205

4 hours lecture.

### **HU 199-299 Individual Studies/1-4 Units**

Prerequisite: Approval of the department chairman and instructor

The student will complete a research problem or an outlined course of study under the direction of a faculty member. The contract for the individual study must be agreed upon by the student, the instructor and the department chairman prior to initiation of the study. May be repeated for credit

\*All humanities courses except HU 011 may be used to fulfill the humanities and fine arts requirements for the A.A. and A.S. degrees

## **JOURNALISM**

### **JR 101 Mass Communications/3 Units**

Prerequisite: Eligibility for EN 101, completion of EN 101 with a C or better, or permission of instructor

An introduction to mass communications media with emphasis on defining and applying the basic concepts of gathering, writing, and evaluating news for newspapers, magazines, radio, television,

business publications, and house publications; studying the principles and problems of mass communications. Taught spring semester only.

3 hours lecture.

### **JR 102 Basic Reporting/3 Units**

Prerequisite: Completion of JR 101 with a C or better or permission of instructor.

Practical experience in producing accurate, fair, and condensed news coverage through actual reporting for *The Heliograph*.

3 hours lecture.

### **JR 103 Intermediate Reporting/3 Units**

Prerequisite: Completion of JR 102 with a C or better or permission of instructor.

Improvement and development of skills through specialized reporting, rewriting, headline writing, feature writing, copyreading, proofreading, and independent study with emphasis on the student's prospects and aptitude toward journalism as a career.

3 hours lecture.

### **JR 199-299 Individual Studies/1-4 Units**

Prerequisite: Approval of the department chairman and instructor

The student will complete a research problem or an outlined course of study under the direction of a faculty member. The contract for the individual study must be agreed upon by the student, the instructor and the department chairman prior to initiation of the study. May be repeated for credit

## **MATHEMATICS**

### **MA 010 Fundamental Mathematics/3 Units**

Prerequisite: Indicated mathematics deficiency.

A study of basic arithmetic concepts with drill in skills and techniques of computation. Includes fundamental operations with whole numbers, fractions, decimals, percent, measurements, ratio and proportion, averages, and basic operations with integers.

3 hours lecture.

### **MA 020 Elementary Algebra/3 Units**

Prerequisite: Acceptable score in placement examination or C or better in MA 010.

An introduction to the basic algebra normally included in a first year high school algebra course. Includes fundamental axioms and operations applied to rational numbers, laws of integral exponents, solution of equations, polynomials and factoring, systems of equations, graphing inequalities, fractional expressions, radicals and quadratic equations.

3 hours lecture.

### **MA 110 Intermediate Algebra/3 Units**

Prerequisite: One year of high school algebra or MA 020 with grade of C or better.

A continuation of algebra concepts which parallels the content generally included in a second-year high school algebra course. Includes real number system, linear equations, absolute value and inequalities, functions, basic analytic geometry, systems of equations, polynomials, exponents, radicals, quadratic equations. May not transfer for credit to four-year universities.

3 hours lecture.

### **MA 112 Basic Concepts of Number and Geometry/3 Units**

Prerequisite: Two years of high school mathematics, not including general mathematics, or two semesters of college mathematics, not including MA 010.

A study of the nature of number and systems of numeration. Includes the logical structure of arithmetic, informal and formal geometry, and emphasizes developing a basis for understanding the common processes of arithmetic and the metric and non-metric relations in geometry.

3 hours lecture.

### **MA 120 College Algebra/3 Units**

Prerequisite: Two years of high school algebra, or MA 110 with a grade of C or better.

A logical development of the real number system, field axioms as applied to algebra, sets and set notation, inequalities and absolute value, polynomial functions and their graphs, determinants and matrices, inverse functions, logarithmic and exponential functions, complex numbers, sequences, binomial theorem, and mathematical induction.

3 hours lecture.

### **MA 124 Plane Trigonometry/3 Units**

Prerequisite: MA 120 or approval of instructor

An analytical approach to trigonometry based upon the unit circle concept: trigonometric functions, identities, conditional equations, radian measure, graphs, logarithms, solution of right and oblique triangles, inverse trigonometric functions and trigonometric form of complex numbers.

3 hours lecture.

### **MA 144 College Algebra and Trigonometry/5 Units**

Prerequisite: Two years of high school algebra or MA 110 with grade of C or better.

A pre-calculus course, which covers the combined content of MA 120 and MA 124 in one semester.

5 hours lecture.

### **MA 155 Finite Mathematics/3 Units**

Prerequisite: MA 120, with satisfactory grade, or permission of instructor.

A nonrigorous, yet mathematically sound, introduction to finite mathematics, the branch of mathematics *not* involving infinite sets, limits, and continuity. Includes vectors and matrices, probability,

statistics, linear programming, and game theory. Examples are taken from business and social sciences.

3 hours lecture.

### **MA 156 Calculus for Business/3 Units**

Prerequisite: MA 120 and MA 155 with satisfactory grade, or equivalent.

Elementary topics in analytic geometry, differential and integral calculus with business application.

3 hours lecture.

### **MA 161 Analytic Geometry with Calculus/5 Units**

Prerequisite: Four years of high school mathematics or permission of instructor or MA 144, or MA 120 and MA 124.

An integrated study in which analytic geometry is used to develop, understand, and apply calculus concepts. Includes absolute value and inequality, relations and functions, graphs, limits and continuity, definition and application of the derivative, antiderivative and definite integral, and conic sections.

5 hours lecture.

### **MA 162 Analytic Geometry with Calculus/5 Units**

Prerequisite: MA 161 with grade of C or better

A continuation of MA 161. Includes differentiation and integration of trigonometric, inverse trigonometric, exponential and logarithmic functions. Also covers parametric equations, arc length, polar coordinates, methods and applications of integration, vectors in three dimensions and solid analytic geometry.

5 hours lecture.

### **MA 263 Analytic Geometry with Calculus/3 Units**

Prerequisite: MA 162 with grade of C or better.

A continuation of MA 162 to conclude the three-semester calculus sequence. Includes elements of infinite series, partial differentiation, and multiple integration.

3 hours lecture.

### **MA 199-299 Individual Studies/1-4 Units**

Prerequisite: Approval of the department chairman and instructor.

The student will complete a research problem or an outlined course of study under the direction of a faculty member. The contract for the individual study must be agreed upon by the student, the instructor and the department chairman prior to initiation of the study. May be repeated for credit.

## **MUSIC**

\*\$45 Fee

### **MU 101 Introduction to Music/3 Units**

Prerequisite: None

A general introduction to the elements of musical form and structure with emphasis on listening to recorded music from the

Middle Ages through the 17th Century. The ability to read music is useful but not necessary.

3 hours lecture.

### **MU 102 Introduction to Music/3 Units**

Prerequisite: None

A continuation of MU 101 with emphasis on style characteristics of music from the 18th Century to the present. Introduction to Music MU 101 and MU 102 may be used to fulfill three to six units of the humanities and fine arts requirements for the A.A. and A.S. degrees.

3 hours lecture.

### **MU 103 Voice Class/1 Unit**

Prerequisite: None

Instruction in class in basic vocal techniques, voice control, development and basic exercises.

1 hour per week.

### **MU 104 Instrumental Class Instruction/1 Unit**

Prerequisite: None

Introduction and development of basic instrument skills, note reading, coordination, sense of rhythm, sight reading, ability and knowledge of elementary instrumental technique.

1 hour studio.

### **MU 105 Theatre Dance/1 Unit**

See Drama 105

### **MU 110 Choir/1 Unit**

Prerequisite: None

Study and performance of outstanding literature from various periods of musical composition. May be repeated for credit.

Daily rehearsal.

### **MU 111 Band/1 Unit**

Prerequisite: Audition

Study and performance of outstanding musical literature from various periods of musical composition. May be repeated for credit.

Daily rehearsal.

### **MU 113, 114\* Instrument — Individual Instruction/1-1 Units**

Prerequisite: Permission of instructor, frequently by audition

A systematic study in technique and repertoire of an instrument of student's choice, providing instructor is available.

Weekly lesson

### **MU 115, 116\* Voice — Individual instruction/1-1 Units**

Prerequisite: Permission of the instructor

Study of basic foundations of vocal techniques and preparation of recital literature for jury examination.

One half hour lesson per week

### **MU 130 Keyboard Harmony/1 Unit**

Prerequisite: To be taken concurrently with MU 132

Special work on ear training, keyboard harmonization and application of musical theory to the keyboard.

2 hours studio.

### **MU 132, 133 Music Theory/3-3 Units**

Prerequisite: MU 132 is a prerequisite for 133.

A systematic study of the rules of music with emphasis on ear training and sight singing.

3 hours lecture.

### **MU 201 Ensemble/1 Unit**

Prerequisite: Audition and two years playing experience.

Study and performance of music appropriate to duets, trios, quartets or larger ensembles of mixed or like instruments. May be repeated for credit.

3 hours per week rehearsal.

### **MU 202 Ensemble/1 Unit**

Prerequisite: Audition and two years singing experience.

Study and performance of vocal literature appropriate to duets, trios, or larger vocal ensembles.

3 hours per week rehearsal.

## **NURSING**

### **NS 122 Nursing I/10 Units**

Prerequisite: Admission to the ADN program.

Introduction to comprehensive patient centered nursing utilizing a conceptual framework of basic human needs, major health problems and the nursing process. Knowledge and skills necessary for carrying out nursing care measures and therapeutic techniques presented through lecture, demonstration and supervised clinical practice. Introduction to mental health — mental illness includes communication skills, concepts of mental health, pathology and treatment. Taught fall semester only.

6 hours lecture; 12 hours laboratory.

### **NS 123 Nursing II/10 Units**

Prerequisite: NS 122, BS 151

Emphasis placed on identifying the needs of patients of all ages, planning individualized patient care, beginning maternal-child health theory, growth and development concepts, nutrition, drug therapy and other related areas. Total care of selected patients occurs under the direction of the clinical instructor. Taught spring semester only.

7 hours lecture; 12 hours laboratory.

### **NS 124 Drugs, Dosages, and Calculations/2 Units**

Prerequisite: NS 122

Covers the mathematics and systems of measurement used in ordering, preparing and administering drugs and medicines.

Includes basic skills and techniques in administering medications along with beginning knowledge of medications commonly used in various clinical situations. Taught spring semester only

2 hours lecture.

### **NS 232 Nursing III/8 Units**

Prerequisite: NS 123, NS 124

Based on recent research and conceptual developments of effective ante-partal, partal and post-partal nursing care, including parent education, normal and complicated labor and care of full term and high risk infants. Nursing care of obstetrical emergencies, current concepts of the expanded role of the maternity nurse and supervised clinical experience included. Advanced psychiatric mental health nursing theory with clinical experience in the community integrated into the course. Taught fall semester only.

4 hours lecture; 12 hours laboratory.

### **NS 233 Nursing IV/8 Units**

Prerequisite: NS 123, NS 124

Advanced Medical-Surgical nursing is presented along with patient evaluation, problem solving, and planning for patient care. Supervised clinical practice is offered, providing experiences in medical-surgical nursing, community health and basic supervisory skills. Psychiatric community mental health seminars continue. Taught spring semester only.

4 hours lecture; 12 hours laboratory

### **NS 234 Trends and Leadership/2 Units**

Prerequisite: NS 122, NS 123, NS 124

Seminar and discussion used to explore the role of the nurse and her relationship with other health-care providers, including legal and ethical considerations, cultural backgrounds, nursing organization and historical and current trends. Taught spring semester only.

2 hours lecture.

## **PHILOSOPHY\***

### **PL 111 Introduction to Philosophy/3 Units**

Prerequisite: EN 101 and sophomore standing.

Man's interpretation of the nature and meaning of reality, conduct, and of his own thinking.

3 hours lecture.

### **PL 130 Ethics/3 Units**

Prerequisite: EN 101 or permission of instructor.

An introduction to major ethical and moral problems with emphasis on contemporary questions of morality and ethics.

3 hours lecture



### **PL 201 Philosophies of the East/3 Units**

Prerequisite: EN 101 and sophomore standing.

Hinduism, Buddhism, Taoism, and Confucianism with emphasis on their roles in the modern world.

3 hours lecture.

### **PL 202 Philosophy of Religion/3 Units**

Prerequisite: EN 101 and sophomore standing.

Introduction to the nature of religion, nature and existence of God and major religious tenets of western thought.

3 hours lecture.

### **PL 199-299 Individual Studies/1-4 Units**

Prerequisite: Approval of the department chairman and instructor.

The student will complete a research problem or an outlined course of study under the direction of a faculty member. The contract for the individual study must be agreed upon by the student, the instructor and the department chairman prior to initiation of the study. May be repeated for credit.

\*All courses may be used to fulfill three to six units of the humanities and fine arts requirements for A.A. or A.S. degrees.

## **PHYSICAL EDUCATION**

### **PE 110 Beginning Coed Gymnastics/1 Unit**

Prerequisite: None

Beginning and intermediate skills on all the basic pieces of gymnastics apparatus.

2 hours weekly.

### **PE 111 Intermediate Coed Gymnastics/1 Unit**

Prerequisite: PE 110 or permission of instructor.

Further development of previously acquired gymnastic skills on all pieces of gymnastics apparatus.

2 hours weekly.

### **PE 112 Weight Training/1 Unit**

Prerequisite: None

The basic skills and knowledge necessary in weight training and wrestling with opportunity for competitive intraclass wrestling.

Taught fall semester only.

2 hours weekly.

### **PE 113 Modern Dance/1 Unit**

Prerequisite: None

Individual and group physical exercises and opportunity for expression through modern dance interpretations.

2 hours weekly.

### **PE 114 Coed Badminton/Volleyball/1 Unit**

Prerequisite: None

Badminton and volleyball with emphasis on the mastery of fundamentals.

2 hours weekly.

### **PE 115 Beginning Coed Bowling/1 Unit**

Prerequisite: None

Development of beginning skills of bowling with emphasis on mastery of fundamentals.

2 hours weekly.

### **PE 116 Intermediate Coed Bowling/1 Unit**

Prerequisite: PE 115 or permission of instructor.

Further development of previously acquired bowling skills.

2 hours weekly.

### **PE 117 Beginning Coed Tennis/1 Unit**

Prerequisite: None

Introduction to the beginning skills of tennis with emphasis on mastery of fundamentals.

2 hours weekly.

### **PE 118 Intermediate Coed Tennis/1 Unit**

Prerequisite: PE 117 or permission of instructor.

Further development of previously acquired tennis skills including the basic strategy of competitive tennis.

2 hours weekly.

### **PE 119 Beginning Coed Golf/1 Unit**

Prerequisite: None

Development of beginning skills of golf with emphasis on mastery of fundamentals.

2 hours weekly.

### **PE 120 Intermediate Coed Golf/1 Unit**

Prerequisite: PE 119 or permission of instructor.

Further development of previously acquired golf skills, including chipping, putting, pitching, and driving. Introduction of "special shots" and different forms of competition.

2 hours weekly.

### **PE 121 Coed Square and Social Dance/1 Unit**

Prerequisite: None

Introduction to the various ballroom steps in social dancing with the opportunity to master traditional American square dances.

Taught fall semester only.

2 hours weekly.

### **PE 122 Coed Archery/1 Unit**

Prerequisite: None

Target archery and clout shooting with opportunity for improvement of existing skills.

2 hours weekly.

### **PE 123 Beginning Handball/Raquetball/1 Unit**

Prerequisite: None

Development of basic skills of handball through instruction, participation and intraclass competition.

2 hours weekly.

### **PE 124 Beginning Swimming/1 Unit**

Prerequisite: None

For the non-swimmer, guidance through primary phases of learning to swim with the final objective of the course, ability to swim 30 yards.

2 hours weekly.

### **PE 125 Intermediate Coed Swimming/1 Unit**

Prerequisite: PE 124 or permission of instructor.

Opportunity to improve on skills in the four fundamental strokes, crawl, breast, back and side — with final objective of the course, the ability to swim continuously for five minutes on front, side and back.

2 hours weekly.

### **PE 126 Advanced Coed Swimming and Water Sports/1 Unit**

Prerequisite: PE 125 or permission of instructor.

Development of variations of the four fundamental strokes and other miscellaneous water skills. Introduction to water polo, synchronized swimming and other aquatic activities.

2 hours weekly.

### **PE 127 Coed Life Saving/1 Unit**

Prerequisite: PE 126 or permission of instructor.

Development to meet the requirements of the standard Red Cross course leading to certification in Senior Life Saving.

2 hours weekly.

### **PE 128 Coed Adapted Physical Education/1 Unit**

Prerequisite: Written statement from a licensed physician requiring a limited activities program.

A personalized program of physical education consistent with the recommendation of private physician

2 hours weekly.

### **PE 129 Trampoline/BODY Conditioning (men only)/1 Unit**

Prerequisite: None

Development of the basic and intermediate skills of trampolining and practice in several activities for body dynamics using a variety of pieces of equipment.

2 hours weekly.

### **PE 130 Trampoline/BODY Dynamics (women only)/1 Unit**

Prerequisite: None

Development of the basic and intermediate skills of trampolining

and practice in several body building exercises, using a variety of pieces of equipment.

2 hours weekly.

### **PE 131 Varsity Sports/1 Unit**

Prerequisite: Permission of instructor.

Membership in class based on participation as members of a varsity collegiate team

2 hours weekly.

### **PE 132 Song and Cheerleading/1 Unit**

Prerequisite: Permission of instructor.

Membership in class based on participation on the songleading or cheerleading squads, with emphasis on individual and group physical exercise stunts, and dances with demonstration of these skills at rallies and games. Taught fall semester only.

2 hours weekly.

### **PE 133 Hiking/1 Unit**

Prerequisite: None

Participation in the wilderness trail and off-trail hiking and learning care of equipment, use of maps, care and protection of wilderness trails, use of emergency first aid and importance of physical conditioning.

2 hours weekly.

### **PE 134 Coed Billiards/1 Unit**

Prerequisite: None

Introduction to the skill of billiards with attention to rules, etiquette, and proper playing techniques.

2 hours weekly.

### **PE 135 Coed Scuba Diving/1 Unit**

Prerequisite: Student must be able to swim!

Introduction to all aspects of scuba diving fundamentals and techniques with actual experience in the ocean. PADI International Certification may be achieved upon successful completion of the course.

3 hours weekly.

### **PE 136 Beginning Coed Yoga/1 Unit**

Prerequisite: None

Introduction to the beginning and intermediate postures of yoga, with a brief introduction to the advanced postures

2 hours weekly, lecture and participation

### **PE 137 Beginning Coed Judo/1 Unit**

Prerequisite: None

Introduction to the beginning and intermediate skills of judo, with a brief introduction to the advanced skills.

2 hours weekly, lecture and participation

**PE 138 Team Roping/1 Unit**

Prerequisite: Some basic riding experience. No former knowledge of roping is necessary.

Provides opportunity for student to practice for pleasure as well as for later competition in rodeo activities. An opportunity to learn the sport correctly.

2 hours weekly.

**PE 139 Western Horsemanship/1 Unit**

Prerequisite: None

Enables students who own or intend to buy a pleasure horse to handle and care for the animal in the Western tradition. Student learns to handle Western saddle, select appropriate equipment, to evaluate pleasure horse before purchase, to care for general well-being of animal.

2 hours weekly.

**PE 140 Mexican Folk Dance/1 Unit**

Prerequisite: Conversational proficiency in Spanish, or permission of instructor.

An introduction to the basic Mexican Folk Dances: the meaning, importance, theory, history, and general characteristics of Mexican Folklore Dances. All students learn to dance five main Mexican folk dances.

2 hours weekly.

**PE 141 Beginning Basketball/1 Unit**

Prerequisite: None

An introduction to the game of basketball; rules basic skills, and fundamentals of a popular sports activity.

2 hours weekly.

**PE 142 Women's Softball/1 Unit**

Prerequisite: None

An introduction to the game of softball; rules, basic skills and fundamentals of a popular sports activity.

2 hours weekly.

**PE 143 Backpacking/1 Unit**

Prerequisite: PE 133 or permission of instructor.

Practical backpacking and wilderness camping techniques, emphasis on preservation of wilderness areas, proper expedition behavior, selection and care of equipment. One group backpack, one individual backpack. Students must furnish their own equipment.

2 hours weekly.

**PE 144 Intermediate Modern Dance/1 Unit**

Participation in individual and group physical exercises and individual expression through modern dance interpretations.

2 hours weekly.

**PE 145 Beginning Coed Karate/1 Unit**

Prerequisite: None

A beginning karate class for men and women. The basic kata, etiquette, language and techniques for Korean-style karate.

2 hours weekly.

**PE 146 Intermediate Coed Yoga/1 Unit**

Prerequisite: Beginning Coed Yoga or permission of instructor.

Practice in beginning, intermediate and advanced postures of yoga, continuing where beginning Coed Yoga stops. Lecture, demonstration and participation two hours per week.

2 hours weekly.

**PE 147 Intermediate Coed Judo/1 Unit**

Prerequisite: PE 137 or permission of instructor.

Introduction to the intermediate skills of Judo, with a brief introduction to the advanced skills.

2 hours weekly, lecture and participation.

**PE 148 Soccer/Speedball/Speedaway/1 Unit**

Participation in soccer, speedball and speedaway with emphasis on the mastery of fundamentals for each sport.

2 hours weekly.

**PE 150 Water Safety Instructor/2 Units**

Prerequisite: Current Red Cross Advanced Life Saving Certification

Development of instructional skills in teaching swimming and life saving to meet the requirements for the American National Red Cross Water Safety Instructor Certification.

3 hours weekly

**PE 151 Table Tennis/1 Unit**

An introduction to the game of table tennis, beginning with the basic grip and strokes, and progressing to advanced shots and returns involving backspin, topspin, and sidespin. Strategy, singles and doubles play, and some history will be introduced.

2 hours weekly.

**PE 153 Intermediate Coed Karate/1 Unit**

Practice in intermediate forms and techniques and more advanced sparring and self-defense techniques.

2 hours weekly.

**PE 154 Self-Defense for Women/1 Unit**

Self-defense techniques for women who wish to learn methods of self-defense without having to go through a regular Martial Arts course. Practice in methods of escape and defense for use in various situations.

2 hours weekly.

**PE 155 Orientation to Physical Education/3 Units**

Prerequisite: None

An introduction to the nature and scope of physical education, its historical development, basic philosophy and objectives, changing concepts, scientific foundations, and professional opportunities. Taught spring semester only.

3 hours lecture.

### **PE 171 Orientation to Recreation/2 Units**

Prerequisite: None

Analysis of the nature and scope of the field of recreation, its historical development, philosophy and objectives, changing concepts, scientific foundations and professional opportunities, recreation in American life, roles of various levels of government in recreation, relationships between physical education, health, camping, and outdoor recreation. Taught spring semester only.

2 hours lecture.

### **PE 189 Elementary School Physical Education/3 Units**

Prerequisite: None

A study of the scope and values of physical education and movement education in the elementary school including the teaching designs for primary and intermediate grades pertaining to physical education as well as knowledge necessary to evaluate physical education programs. Course designed for prospective elementary education teachers, physical education majors, and minors.

3 hours lecture.

### **PE 190 Sports Officiating/3 Units**

Prerequisite: None

A lecture and laboratory course to develop the art and skill of officiating several sports including basketball, football, baseball, and volleyball. Completion of the course will qualify a person for trainee and/or probationary status with the Arizona Interscholastic Association. Taught fall semester only.

3 hours lecture.

### **PE 191 Women's Athletic Conditioning/2 Units**

Introduction to athletic skills and conditioning necessary to certain women's sports. Class meets daily.

### **PE 192 Coaching Team Sports/2 Units**

An introduction to the nature and scope of the profession of coaching as it applies to schools and colleges. Other disciplines will be examined, such as coaching little league baseball teams and YMCA basketball teams.

2 hours lecture.

### **PE 199-299 Individual Studies/1-4 Units**

Prerequisite: Approval of the department chairman and instructor.

The student will complete a research problem or an outlined course of study under the direction of a faculty member. The contract for the individual study must be agreed upon by the student, the instructor and the department chairman prior to initiation of the study. May be repeated for credit.

## **PHYSICS**

### **PH 101 Introduction to Physics/4 Units**

Prerequisite: None

A survey course in the basic concepts of physics. Limited emphasis on mathematical applications.

3 hours lecture; 3 hours laboratory.

### **PH 120-121 General Physics/4-4 Units**

Prerequisite: MA 110 or equivalent; PH 120 is a prerequisite for PH 121.

Lectures, demonstration, and problems in mechanics, properties of matter, heat, sound, light, electricity, and magnetism, atomic and nuclear physics.

3 hours lecture; 3 hours laboratory.

### **PH 230-231 General Physics with Calculus/4-4 Units**

Prerequisite: MA 161. PH 230 is a prerequisite for PH 231.

Covers the same areas as PH 120-121 but in greater depth by the use of calculus. Designed for engineering students and others who require physics with calculus.

4 hours lecture; 3 hours laboratory

### **PH 199-299 Individual Studies/1-4 Units**

Prerequisite: Approval of the department chairman and instructor.

The student will complete a research problem or an outlined course of study under the direction of a faculty member. The contract for the individual study must be agreed upon by the student, the instructor and the department chairman prior to initiation of the study. May be repeated for credit.

## **POLITICAL SCIENCE**

### **PS 120 American National Government/3 Units**

Prerequisite: None

A study of the political system of the United States. Emphasis on constitutional development, the political culture, voting, political parties, campaigns and elections, interest groups, public opinion, and the three branches of the national government to increase the student's awareness and understanding of the political arena. This course fulfills the Federal Constitution requirement for the Arizona Teaching Certificate.

3 hours lecture.

### **PS 167 National and Arizona Constitution/3 Units**

Prerequisite: Sophomore standing.

A study of the governments of the United States and Arizona through the interpretation of the Constitution of each political entity. Approved for teacher certification. Teachers needing only Arizona Constitution may take the Arizona portion of the course for one unit of credit. Students majoring in Political Science should take PS 120.

3 hours lecture.

### **PS 230 Introduction to International Relations/3 Units**

Prerequisite: PS 120 or permission of instructor.

Introduction to the concept of international relations as it has developed from the rise of nation-states with emphasis on the modern concept as choices and options that governments and to a degree individuals face in making decisions in a world of "sovereign" states. Taught spring semester only.

3 hours lecture.

### **PS 199-299 Individual Studies/1-4 Units**

Prerequisite: Approval of the department chairman and instructor

The student will complete a research problem or an outlined course of study under the direction of a faculty member. The contract for the individual study must be agreed upon by the student, the instructor and the department chairman prior to initiation of the study. May be repeated for credit

## **PSYCHOLOGY**

### **PY 101 Elementary Psychology/3 Units**

Prerequisite: None. High school biology and algebra strongly recommended.

A survey of the fundamental methods and principles of psychology with major emphasis on growth and development learning and conditioning principles, psychological measurements, testing, motivation, and statistics.

3 hours lecture.

### **PY 102 Elementary Psychology/3 Units**

Prerequisite: PY 101

A more intensive study of the realm of psychology with emphasis on the psychobiological basis of behavior, intelligence, psychotherapy and psychological disorders, personality, and statistics.

3 hours lecture.

### **Personality and Adjustment/3 Units (See Counseling)**

### **PY 113 Child Psychology/3 Units**

Prerequisite: None. High school algebra and biology recommended.

A study of human maturation through an analysis of the inter-relationships of biological and psychological development from infancy to adulthood.

3 hours lecture

### **PY 210 Social Psychology/3 Units**

Prerequisite: None. PY 101 and PY 102 recommended.

An introduction to basic theories and concepts necessary to the study of social psychology with emphasis on culture and group situations as they are related to the individual.

3 hours lecture.

### **PY 199-299 Individual Studies/1-4 Units**

Prerequisite: Approval of the department chairman and instructor.

The student will complete a research problem or an outlined course of study under the direction of a faculty member. The contract for the individual study must be agreed upon by the student, the instructor and the department chairman prior to initiation of the study. May be repeated for credit.

## **SCIENCE**

### **SC 010 Developmental Science/3 Units**

Prerequisite: None

A survey course, including laboratory experience to acquaint students with science in general and to study in particular certain aspects of astronomy, physics, chemistry, biology, and ecology. Also deals with scientific topics of current interest.

2 hours lecture; 3 hours laboratory.

### **SC 201 Introduction to Elementary School Science Teaching/3 Units**

Prerequisite: None

Introduction to some of the methods and techniques of science relating them to elementary science instruction, utilizing a variety of equipment, teaching materials and associated activities to present current trends in elementary school science teaching.

2 hours lecture; 2 hours laboratory.

## **SOCIAL SCIENCE**

### **SS 101 Introduction to Social Sciences/3 Units**

Prerequisite: None

An introduction to the several disciplines in the social sciences: anthropology, psychology, sociology, economics, political science, and international relations, using a systems approach. Freshmen are encouraged to enroll in this class to discover what discipline interests them for continuation. Accepted as an elective for AA degree.

3 hours lecture.

### **SS 103 Manual Communications I/3 Units**

Prerequisites: None

Principles, methods and techniques of communicating manually with deaf and other persons with communications handicaps

3 hours lecture

### **SS 201 The Chicano in Contemporary Society/3 Units**

Prerequisite: None

A survey of the Chicano culture, traditions, attitudes and ideals from the historical and sociological viewpoints with emphasis upon contemporary problems and conditions. Special attention will be given to social, cultural, economic, political, and educational developments of the Chicano in the Southwest.

3 hours lecture.

### **SS 202 Heritage From Mexico/3 Units**

Prerequisite: None

A study of the various facets of culture and their historical setting which have contributed to the traditions, life style and uniqueness of Mexicans and Americans of Mexican heritage both past and present

3 hours lecture.

## **SOCIOLOGY**

### **SO 101 Introduction to Sociology/3 Units**

Prerequisite: None

A presentation of some critical sociological issues, especially power, conflict and change, with emphasis on large-scale institutions and their role in society through the use of a text of selected readings from research and of student experience through participation in activities grounded in the scientific method.

3 hours lecture.

### **SO 202 Social Problems/3 Units**

Prerequisite: None

A study of contemporary major social concerns through summaries of research and writings of authors with varying perspectives to help the student acquire "a framework for thinking."

3 hours lecture.

### **SO 207 Introduction to Social Welfare/3 Units**

An introduction to our social welfare and social insurance system. Designed to acquaint the student to the various programs available to the general public through legislation and/or private means.

3 hours lecture.

### **SO 210 Marriage and the Family/3 Units**

Prerequisite: None

Courtship, choosing a mate, marriage, marital adjustment, parenthood and family living from the sociological and psychological points of view.

3 hours lecture.

### **SO 199-299 Individual Studies/1-4 Units**

Prerequisite: Approval of the department chairman and instructor.

The student will complete a research problem or an outlined course of study under the direction of a faculty member. The contract for the individual study must be agreed upon by the student, the instructor and the department chairman prior to initiation of the study. May be repeated for credit.

## **SPANISH**

### **001, 002, 003, 004 Conversational Spanish/3-3-3-3 Units**

Prerequisite: SP 001 for 002, 002 for 003, 003 for 004 or the satisfactory performance upon a written and oral exam in lieu of any one of the courses in this series.

To give students a practical working knowledge of Spanish in an everyday setting with emphasis on conversational aspects and vocabulary building. Credit toward AA program but transferable upon satisfactory performance on a proficiency examination.

### **SP 011 Spanish Orthography/1 Unit**

Prerequisite: None

A concentrated course on Spanish spelling. Emphasis on a step-by-step procedure from the simplest to almost any word in the Spanish language. Special attention given to the accent mark, colloquial and common errors and to areas of specific spelling problems.

1 hour lecture.

### **SP 025 Spanish for Teachers/3 Units**

Prerequisite: None

A course designed for the classroom teacher who needs a basic familiarity with Spanish to communicate with Spanish-speaking pupils and parents.

3 hours lecture.

### **Sp 101, 102 Elementary Spanish/4-4 Units**

Prerequisite: SP 101 is a prerequisite of 102.

Methodical presentation of the structure of the language through practice in understanding, listening, speaking, reading, and writing Spanish. Training in correct pronunciation, phrasing, and idiomatic usage.

4 hours lecture; 1 hour laboratory.

### **SP 155 Appreciation of Mexico/3 Units**

Prerequisite: None

For students who have an interest in Mexico, its people and culture, includes a 9-11 day tour in the interior of Mexico, including metropolitan and rural areas with special emphasis upon archeology, architecture, history, anthropology and contemporary life; conducted in English with Spanish instruction available. Accommodations in hotels, guide service and all transportation included. A written report and additional sessions are required for credit. Enrollment fee required 30 days prior to departure of tour. Also credit for HU 105.

### **SP 201, 202 Intermediate Spanish/4-4 Units**

Prerequisite: SP 102, or two years of high school Spanish taken not earlier than one year prior to registration at Cochise and completed with average grade or better, or competency as demonstrated to the satisfaction of the instructor.

Review of grammar, reading, vocabulary building, discussion, and short writings on modern literature.

4 hours lecture; 1 hour laboratory.

### **SP 275, 276 Intermediate Composition and Conversation/3-3 Units**

Prerequisite: SP 202 or completion of course similar to SP 202, Mexican schooling about 6th grade, or four years of high school Spanish.

Topic-centered, composition and discussion. Application of grammar and increased vocabulary from a variety of readings, class discussions and individual presentations. Course conducted in Spanish.

3 hours lecture.

### **SP 304, 305 Introduction to Spanish Literature/3-3 Units**

Prerequisite: SP 202 and permission of instructor or completion of course similar to SP 202, Mexican schooling above 6th grade or 4 years of high school Spanish.

A survey of the development of Spanish literature, emphasizing the growth of thought and form in relation to historical and social backgrounds. SP 304 covers the period from the beginning to 1700; SP 305 from 1700 to the present.

3 hours lecture.

### **SP 307, 308 Introduction to Mexican Literature/3-3 Units**

Prerequisite: Spanish 202 and permission of the instructor

An introduction to the works of many representative Mexican authors and a historical look at the literature of Mexico during the Colonial period and the period of Independence. Taught in Spanish.

3 hours lecture.

### **SP 199-299 Individual Studies/1-4 Units**

Prerequisite: Approval of the department chairman and instructor

The student will complete a research problem or an outlined course of study under the direction of a faculty member. The contract for the individual study must be agreed upon by the student, the instructor and the department chairman prior to initiation of the study. May be repeated for credit.

### **Spanish Immersion Program**

Intensive day-long instruction in Spanish for non-native speakers. Program is designed to provide a basic speaking-listening facility in the Spanish language. Students receive credit for Spanish 101, 102, 201 and 202. Offered spring semester only. A seven-week summer program offers credit for Spanish 101 and 102

## **SPEECH**

### **SE 102 Fundamentals of Speech/3 Units**

Prerequisite: None

Study of fundamentals of speaking and listening communication and techniques of research, organization and delivery of speeches of various types.

3 hours lecture.

### **SE 106 Interpersonal Communications/3 Units**

Prerequisite: SE 102 or permission of instructor.

Study of the theory of communication and human interaction; emphasis on verbal and non-verbal behavior, the sociological and psychological aspects of communication with practical applications within the private and commercial world.

3 hours lecture.

### **SE 110 Public Speaking/3 Units**

Prerequisite: SE 102 or permission of instructor.

Review of fundamentals of communication and in-depth study of organization and delivery of various types of speeches. Study of uses of voice and body in public speaking, parliamentary procedure and public discussion

3 hours lecture.

### **SE 115 Argumentation and Debate/3 Units**

Prerequisite: SE 102 or permission of instructor.

A study of skills of practical reasoning, appraisal and use of evidence, recognition of fallacies and application of debate forms and oral style of argumentation. Intercollegiate debate optional for class members.

3 hours lecture

### **SE 125 Forensics/1 Unit**

Prerequisite: None, although SE 102 or high school speech beneficial.

Development of skills in one or more of the following for participation in intercollegiate speech contests and tournaments: debate, persuasive speaking, informative speaking, extemporaneous speaking, impromptu speaking, oral interpretation of literature, readers' theater. Practice for and participation in at least one intercollegiate speech contest or tournament. Course may be repeated for a total of four semester credits.

## **SURVEYING TECHNOLOGY**

### **ST 100 Engineering Surveys I/3 Units**

Prerequisite: None

Mensuration through the application of surveying techniques; theory of errors and their analysis; fundamental concepts of horizontal, vertical, and angular measurements; basic surveying operations and computations, control systems, and datums for engineering surveys; locating & positioning man-made structures. 2 hours lecture; 4 hours laboratory

### **ST 101 Engineering Surveys II/3 Units**

Prerequisites: ST 100 Engineering Survey I

Advantages, disadvantages and restrictions of various methods used in surveying and mapping; principles of directional control; geodetic relationships and subdivision layout. 2 hours lecture; 3 hours laboratory.

## **TRADE AND INDUSTRIAL**

\*\$10 lab fee

### **TI 005 Oxyacetylene Welding/3 Units**

Prerequisite: None

Safety practices, set-up and operation of oxyacetylene welding equipment. Welding in flat, horizontal and overhead positions of standard alloys of steel; brazing and soldering of ferrous and non-ferrous metals. 1 hour lecture; 4 hours laboratory.

### **TI 006 Arc Welding/3 Units**

Prerequisite: TI 005 or permission of instructor.

Safety practices, set-up and operation of arc welding equipment. Techniques of joining metals in all positions by electric arc with the use of the electrode. 1 hour lecture; 4 hours laboratory.

### **TI 008 Sewing Machine Maintenance/3 Units**

Prerequisite: None

A complete maintenance, servicing, adjustment and set-up of industrial sewing machines currently in common usage. This course is designed to provide the factual information and manipulative skill necessary to set up any commonly used industrial sewing machine that has been used, abused, or otherwise requires maintenance or set-up for a particular fabric. Particular emphasis will be placed upon trouble shooting and preventive maintenance. 1 hour lecture; 4 hours laboratory.

### **TI 012 General Automotive Mechanics I/3 Units**

Prerequisites: None

Automotive maintenance and repair including tune-up, electrical systems, fuel systems, cooling systems, lubrication systems and oils, transmissions and clutches, brake systems and accessories, such as air conditioning. 1 hour lecture; 4 hours laboratory

### **TI 013 General Automotive Mechanics II/3 Units**

Prerequisite: None

Classroom theory and supporting laboratory experience for routine automotive maintenance to develop entry-level skills for carburetor overhaul, valve system, emission controls, basic welding, brake system service, alternator and regulator service, battery, starter system service, circuit trouble-shooting, basic of electricity as related to the automobile, safe use of basic shop equipment, use of miscellaneous equipment—hydraulic press, port-a-power, etc. and the use of tuneup test equipment. 1 hour lecture; 4 hours laboratory

### **TI 014 Know Your Automobile/3 Units**

Prerequisite: None

Classroom theory and supporting laboratory experience for basics of engine operation, powertrain operation, use of tools, care and selection of tires, use of jack, changing tires, lubrication system service, checking of all fluid levels, cooling system and minor service, use of repair manuals, brake system theory and minor service, repack wheel bearings, fuel system theory and very minor service, basics of electricity, basics of battery, starter, and charging system theory, ignition system and basic emission control system theory, ignition system service, diagnosis—what to do if the car won't start, selecting a used car. 3 hours lecture.

### **TI 016 Basic Refrigeration/3 Units**

Prerequisite: None

Basic application of theory of refrigeration and techniques of servicing automotive air conditioners. 1 hour lecture; 4 hours laboratory.



**TI 017 Automobile Refrigeration/3 Units**

Prerequisite: TI 016 or permission of instructor.

Advanced techniques of testing, trouble-shooting and repair of automotive air conditioner.

1 hour lecture; 4 hours laboratory.

**TI 018 Commercial Refrigeration/6 Units**

Prerequisite: TI 016

Theory, techniques and practices of commercial refrigeration  
Servicing of refrigerators, freezers, and commercial air conditioners.

1 hour lecture; 4 hours laboratory.

**TI 020 Principles of Industrial Management/3 Units**

Prerequisite: None

Insight into the fundamental principles of management and problems, if employed in a supervisory capacity. Solutions to real-life, actual labor and management problems in lecture-discussion classes. Requires student to investigate a problem situation and write a report with alternate solutions. Special emphasis given to labor relations and dealing with union organizations

3 hours lecture.

**TI 021 Elements of Production Management/3 Units**

Prerequisite: TI 020

A complete study of decision-making based on cost data associated with production systems and processes. In-depth study relating to plant layout problems relevant to motion and time study. Particular emphasis on production planning and control, including inventory and production standards.

3 hours lecture.

**TI 022 Water and Waste Water Plant Operation/3 Units**

Prerequisite: None

Provides the student with the knowledge, skills, and techniques required to pass a State of Arizona Certification Examination or Class I or Class II Water or Waste Water Plant Operator.

2 hours lecture; 3 hours laboratory

**TI 029 Radio Servicing/3 Units**

Prerequisite: None

Electronic theory, trouble-shooting and repair of AM radios.

1 hour lecture; 4 hours laboratory.

**TI 030 Black and White Television Servicing/3 Units**

Prerequisite: TI 029 or permission of instructor.

Television theory, trouble-shooting and repair of black and white televisions.

1 hour lecture; 4 hours laboratory.

**TI 031 Color TV Servicing/3 Units**

Prerequisite: TI 030

Trouble-shooting, repair and installation of color TV systems and antenna systems

1 hour lecture, 4 hours laboratory

# Governing Board, Faculty, and Professional Staff

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## FACULTY AND PROFESSIONAL STAFF

Frank Adams; Instructor, Agriculture (1978)  
University of Arizona B.S.

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