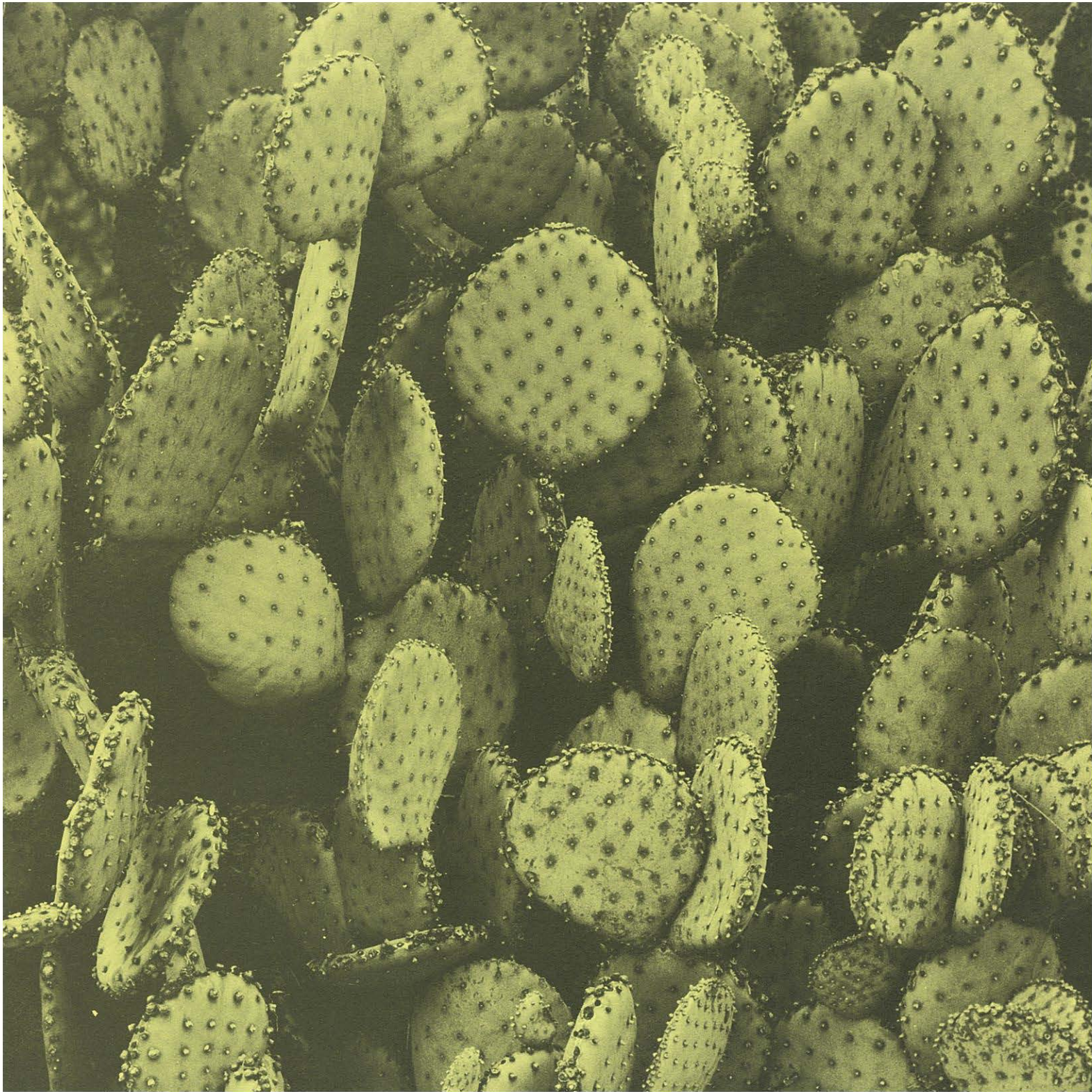


PIMA COLLEGE 70-71 CATALOG







**To Serve The Community
...Pima College**

Temporary Campus
540 North Wilmot Road
Tucson, Arizona 85711
Phone: (602) 296-7481



Pima College Philosophy

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

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

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

Goals

Pima College provides an open door to educational opportunity. It is more interested in what a student is ready to do than in what he has done. Seriousness of purpose and the ability to profit from selected instruction are the most important qualifications for enrollment.

Pima College es una institución educativa que reconoce la diversidad de las necesidades de toda la comunidad, igual que acepta las valiosas contribuciones de los múltiples grupos étnicos de nuestro Suroeste.

Los programas educativos de Pima College, en los cuales cualquier persona podrá participar sin importar su nivel de instrucción formal, responderán a las necesidades de toda la comunidad. Se efectuarán los programas en un ambiente rico en la diversidad de técnicas pedagógicas, de materiales, y de materias, algunas de las cuales se dictarán en español, de acuerdo con las necesidades del alumnado.

Para más informes en español, comunicarse con la Oficina de Admisión.

Functions

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

Operating within this definition, Pima College declares its functions to include:

1. General education designed to increase the individual’s awareness of man’s knowledge and his capacity for intelligent and responsible participation in society.
2. Educational programs of varying length to prepare students for useful and satisfying vocations with emphasis on community needs.
3. Two years of lower division collegiate work to enable students to progress smoothly into upper division work at the universities.
4. Continuing education courses to satisfy the vocational and avocational aspirations of those young

people and adults who are interested in attending evening classes.

5. A professional staff responsive to the needs of individuals for assistance in career guidance, academic work, and personal counseling.
6. Community services related to specific needs including cultural, recreational and general interest programs.

Applicants will be admitted regardless of past performance. The faculty will help each student to develop an individual program.

Accreditation

Pima College currently has correspondence status with the North Central Association of Colleges and Secondary Schools, thus permitting the college to offer various programs, including the Associate of Arts and Associate of Science Degrees. Full accreditation will be sought through appropriate procedures following the official opening of Pima College in September, 1970. The Arizona State Board of Junior Colleges has approved the offerings contained in this catalog.



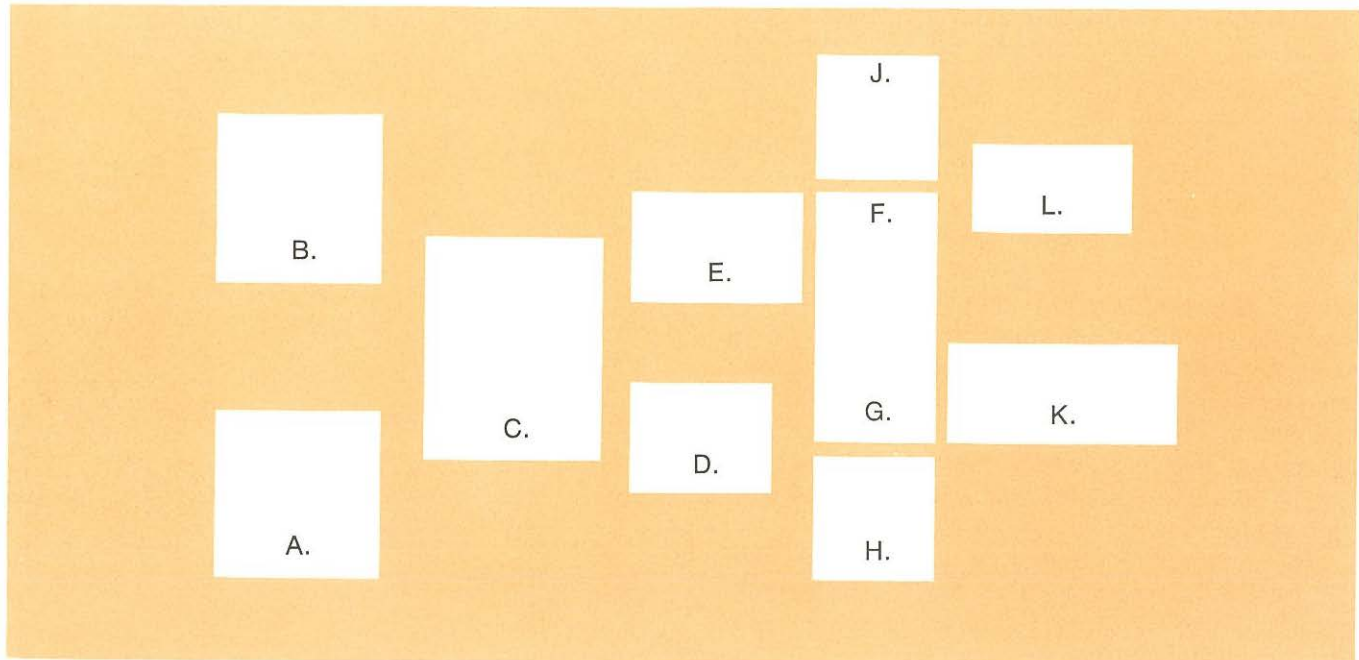


- A. College Union
- B. Gymnasium
- C. Learning Resource Center
- D. Fine Arts & Music
- E. Vocational Technical
- F. Large Group Instruction
- G. Large Group Instruction
- H. Academic House
- J. Academic House
- K. Science & Business Education
- L. Propulsion Lab

The College Campus

The Pima College campus is being constructed three miles west of Tucson's central business district. It is bounded by Anklam Road and Speedway Boulevard on the south and north, and by La Cholla and Greasewood Roads on the east and west. Eight classroom and administrative buildings are scheduled to be ready for students in 1971. Temporary offices are located at 540 North Wilmot Road.

No dormitories are included in present construction plans. Assistance will be provided, however, for students requiring housing in Tucson.





Intercultural Committee

Located in an area where history has for generations reflected the interaction of peoples from varied ethnic and cultural backgrounds, Pima College is committed to the concept of a pluralistic society.

Representatives of the four major groups in Pima County—Indians, Mexican Americans, Anglos and Blacks—and of the varying points of view within each of those groups make up the college Intercultural Committee, whose major responsibility is fostering individual cultural identity and cross-cultural communication.

Members of the committee serve as resource persons within the college, contacts with various groups in the total community and sponsors of intercultural activities. Among their activities are the reviewing of courses and programs for intercultural content, the securing of special grants for curriculum development and assistance to both faculty and students in the area of cultural and community awareness and sensitivity. A major in Intercultural Studies is being planned and will be offered as a degree program.

An additional function of the Intercultural Committee is to provide assistance to persons seeking information, professional guidance or special programs from the College.



Pima College Academic Calendar

	1970-71
Registration, Orientation	Aug. 31-Sept. 4
Labor Day	Sept. 7
Day Classes Start	Sept. 8
Evening Classes Start	Sept. 14
Late Registration Ends	Sept. 18
End of Schedule Adjustment Period	Sept. 25
First 8-Week Class Period Ends	Oct. 30
Second 8-Week Class Period Starts	Nov. 2
Veterans Day	Nov. 11
Thanksgiving Vacation	Nov. 26-29
Christmas Vacation Begins, First Semester Ends	Dec. 23

Registration, Second Semester Counseling	Jan. 11-15
Classes Start	Jan. 18
Late Registration Ends	Jan. 29
End of Schedule Adjustment Period	Feb. 5
Rodeo Day	Feb. 25-28
First 8-Week Class Period Ends	Mar. 12
Second 8-Week Class Period Starts	Mar. 15
Easter Vacation	Apr. 4-10
Last Day of Classes, Second Semester Ends	May 14

Admission Requirements & College Admissions

Admission is available to any person upon completion of an official application form, except that (a) non-high school graduates who are under 19 years of age must obtain the written permission of their high school principal, and (b) students who are currently under suspension for nonacademic reasons must submit a written petition to the Admissions Office at least two weeks prior to registration. Their requests for admission will be reviewed by the Admissions Committee.

It is important that transfer students, admitted while under suspension of any type, be aware that credits earned during their period of suspension may not be accepted for transfer by most colleges and universities.

Registration

The college will provide a schedule of each semester's classes to each student who submits an application. The schedule will include registration instructions and will be available in advance of the registration period.

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

- a. An official transcript of any work at high school level or above must be provided by (1) students who intend to enroll for full-time status — 12 or more credit hours, (2) part-time associate degree candidates, and (3) all veterans enrolled under the GI Bill.
- b. A recent medical examination is required of all full-time students under 21 years of age and of those who expect to participate in physical activities.
- c. Although no college placement examination is required, students who have taken the ACT (American College Test) are invited to submit the results to Pima College for use in preparing individual courses of study.

Fee Schedule

Tuition	1970-71
County resident	None
Out-of-County, In-State Resident (12 + hours.)	\$300.00*
Per semester hour (7-11)	28.00
Out-of-State Resident (12 + hrs.)	600.00
Per semester hour (7-11)	50.00
Registration Fee	
Full-time Student (12 + hrs.)	60.00
Part-time Student (7-11 hrs.)	40.00
Part-time Student (1-6 hrs.)	20.00
Laboratory Fees	
Nominal non-refundable lab fees may be assessed for lab courses.	
Special Fees	
Out-of-State Application (non-refundable)	10.00

Late Registration	5.00
Graduation	10.00
Credit by Examination (per semester hour)	5.00
Late Payment of Fees	5.00

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

Refunds

Tuition Refunds: The following graduated scale for refunding tuition fees for students who officially withdraw or are dismissed from the College applies to all students. The refund schedule is:

75% if the withdrawal is prior to the seventh (7th) calendar day after college scheduled classes commence.

50% if withdrawal is between the eighth (8th) and fourteenth (14th) day after college scheduled courses commence.

Registration Fee Refund: Registration fees are non-refundable after the first day of classes.

50% of registration fees will be refunded to students who withdraw officially before the first (1st) day of college scheduled classes.

Residency Requirements for Arizona Junior Colleges

A student shall be considered a resident student for fee purposes provided he qualifies under any of the following:

1. Living in district with parent or parents having custody.
2. Parent or legal guardian has legal residence in district.
3. Living in district with person or persons designated as legal guardians.
4. Living in district as an "emancipated minor" (must have administrative approval) provided he

has been a resident of the district for at least six months directly prior to the first day of instruction of a semester.

5. An unmarried minor who for at least two years has been in the continuous direct care and control of, and has lived with, an adult resident of the district other than his parent.
6. Living in district, legally married, under 21 years of age — provided he has been a resident of Arizona for at least six months directly prior to the first day of instruction of a semester.
7. Living in district as a “ward of the court,” having been placed in district by court action.
8. Living in district and being at least 21 years of age — provided he has been a resident of Arizona for at least six months prior to the first day of instruction of a semester.
9. If an alien who has taken out first naturalization papers — that residence has been maintained in the district for at least six months prior to the first day of instruction, and that he has filled with the United States Immigration and Naturalization Service an application for such citizenship or a declaration of intention to make such application when eligible.

Non-resident tuition shall be waived for students registering for six or fewer semester hours of credit.

Non-resident tuition shall be waived for members of the immediate families of those on active duty in the Armed Forces of the United States stationed within the State of Arizona.

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

Veterans

Pima College is approved for the enrollment of veterans and their dependents under the provisions

of Title 38, U.S. Code. Students who qualify under this program should apply to the Veterans Administration Regional Office at 230 N. First Ave., Phoenix, Arizona, in sufficient time to receive their certificate of eligibility before the start of the term. These certificates are then presented to the Office of Admissions and Records at the time of registration for classes.

Admission of Foreign Students

A foreign student at Pima College is defined as a non-citizen who has entered the United States for the expressed purpose of full-time enrollment at a college or university. In such a case, a non-immigrant student visa must be obtained from the nearest Immigration Office for this purpose.

Foreign student applicants generally should have completed a secondary school program equivalent to the twelfth grade in the U.S. A transcript of this high school record and any courses taken at a college or university must be sent directly to Pima College, preferably written in English or Spanish. A reasonable proficiency in the English language is desirable.

Pima College has no financial aid programs specifically for foreign students. Therefore, each student must come prepared to meet the necessary financial obligations for the full time he will be in the United States. Since foreign students are required to pay out-of-state tuition, it is estimated that each will need approximately \$3,000 per academic year in order to meet all expenses, exclusive of travel.

Financial Aid

Pima College offers a complete program of financial assistance to its students through scholarships, loans, grants, and jobs. The principal objective of the Pima College financial aid program is to remove any financial barriers to college attendance by sincerely motivated students without regard to age, ethnic heritage or personal circumstances.

Types of Financial Aid

Scholarships: A limited number of scholarships have been established for Pima College students by generous private donors. The awards range from \$120 to \$500 and often can be renewed for a second year.

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

Grants: A large number of Educational Opportunity Grants are offered to students with exceptional financial need. A law Enforcement Education Grant program is available to students who are employed by law enforcement or correctional agencies.

Employment: Pima College maintains a large student employment program to enable students to earn a portion of their college costs and to provide opportunities for work experience. Part time positions are available on campus through regular employment or the College Work-Study Program and an active placement service maintains listings of available off-campus openings.

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

Application: Pima College, in cooperation with the other colleges and universities in Arizona, uses the standard "Arizona Financial Aid Application" form along with the American College Testing Service Family Financial Statement form. Both forms are available in the Pima College Financial Aid Office or the office of any Pima County high school counselor.

Because funds under all programs are limited in the amount available each year, applicants are encouraged to apply early to insure full consideration. The financial aid staff welcomes inquiries and members may be called upon to meet with groups of students and their families in high schools and neighborhood centers to provide information and counsel about financing college expenses. Inquiries should be directed to the Director of Financial Aid and Placement.

Counseling for Students

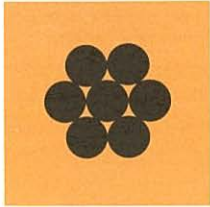
As a student, you may need occasional help to get the most out of your life at Pima. All of the faculty wants to and will help you. To start then, for most things, go to the teacher you know best. This may be the one in your favorite class or the one on your learning team or the one you just happen to know informally.

The probability is very high that this first conversation with the teacher of your choice will go a long way toward getting you the help you want. In addition, to help both you and the teachers, there are persons on the faculty called Student Development Specialists. They frequently can spend more time than the average teacher getting you the help you want. They may also have a particular skill or area of information that you may need to check out. For example, members of this team work in these areas; financial aid, admissions, career information, family services, individual appraisal of abilities and interests, development of skills in handling personal problems, and skills in meeting and working with groups of persons.

Student Health Services

Professional assistance, both in immediate and long-term health problems will be offered to the student. It is hoped that students will avail themselves of these services as they recognize their own health needs.





Exploratory Program, Student Learning Teams, Physical Activities

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

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

Some will choose to make this aspect the major focus of their studies at Pima College through the Exploratory Program, which may lead either to an Associate of Arts degree or to selection of a particular transfer major or career oriented program.

All may participate in activities within the college community which add important dimensions to class work; student organizations that provide experiences in leadership and democratic processes, small learning teams that provide opportunities to understand ideas and human relationships, and physical activities that encourage teamwork, foster good health and teach skills for wholesome lifetime recreation.

For the student who has still to define his personal and career goals, the **Exploratory Program** is an individualized approach to education. While in the Exploratory Program, he will be encouraged to sample many ideas, technical skills, arts, crafts, and human relationships.

Courses can be grouped from regular Pima College courses or planned to meet individual needs through consultation with a faculty member. Each person is encouraged to explore a variety of subjects to determine interests and aptitudes.

Whether an individual remains in the Exploratory Program until completion of the minimum requirements for an Associate of Arts degree or moves into another program will be a personal choice which may be made at any time. Once a desired career or educational goal has been determined by a student, he may proceed at his own rate to attain it.

You are invited to discuss and plan your program with any member of the Student Development Faculty.

The style of education at Pima College will include small groups of students meeting with a faculty member as informal **Student Learning Teams**. Through a learning team, each student will have a chance to explore ideas and experiences in many different areas of study, work, cultural awareness and community involvement.

Field experience, outings, guest resource persons, exchanges with other groups and recreation activities will be shared by members of each learning team.

Teams are expected to be developed in connection with a number of courses and program areas (such as business, industrial technology and the social sciences) and will be especially emphasized in the Humanities Workshop, a one credit course which may be taken separately or as one hour of the four credit Humanities I course.

The workshops will be conducted as forums for discussion of concerns of members — experiences with their academic courses, personal goals,

inquiries into community problems and consideration of ideas, art and literature. Faculty facilitators will come from all program areas of the college.

Membership in each group will be limited to from 8 to 16 persons who will meet together informally once a week for two hours. Any student who wishes may repeat the Workshop for credit for as many as four semesters at Pima College.

Each student at Pima College is encouraged to participate in the wide variety of **Physical Activities** provided. According to his ability and interest, the individual may choose a lifetime sports or recreational activity, intramural competition or intercollegiate athletics as a part of his college program.

Students will be given an important role in deciding both the kinds of intramural activities to be offered in any semester and their own and Pima College's participation in intercollegiate athletic competition.

Grading Policies

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

A — Superior (4 grade points per credit hour), B — Good (3 grade points per credit hour), C — Average (2 grade points per credit hour).

By arrangement with the instructor, a student may take a course under special circumstances which will be recorded on his transcript in the following manner: P — Pass (C or better without grade differentiation ordinarily indicated by the college grading system), AU — Audit, NC — Non-credit course.

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

At the discretion of the instructor, an individual may elect to receive credit for a course without being given a grade other than "Pass."

Individuals who are officially registered may audit courses with the permission of the instructor. No credit will be earned. Requests for audit status must be made before the end of the regular schedule readjustment period of each term.

A record of "Incomplete" as a grade will be made at the individual's request or at the instructor's option.

Withdrawals

Individuals may withdraw from a course at any time. Students who feel they must withdraw from a course should consult with the instructor or a faculty-counselor before doing so.

If, after such consultation, withdrawal is still considered necessary, the student should notify each instructor or the Registrar's Office of his intention. An accurate record of the date and reasons for each withdrawal must be kept because student records are subject to audit by many state and federal agencies which provide financial support.

Degrees

Pima College offers both Associate of Arts and Associate of Science degrees in a variety of study areas. In general, these degrees are granted upon successful completion of a program, usually two years in duration, outlined by the Pima College faculty and approved by the Arizona State Board of Junior Colleges. Details of programs now being offered are listed.

In addition, Pima College will offer a number of technical, skill improvement, special interest and adult continuing education programs. These may range in duration from a one-day seminar to several semesters. In general, certificates will be awarded to those successfully completing the work covered in such courses.

Classes will be scheduled as need and interest in non-degree programs are demonstrated. As others are added to the ones listed in this catalog, information will be made available to the public through appropriate supplementary bulletins and releases to news media.

Appropriate credit will be given at Pima College for work done at other institutions as determined by the faculty of each program area. The equivalent of at least one semester of full time attendance at Pima College will normally be required of degree candidates.



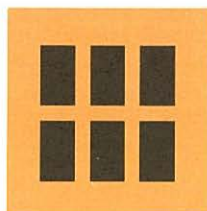


Pima College Programs

Accounting
Applied Arts
Art
Arts and Crafts
Automotive Mechanics
Automotive Technology
Chemical Technology
Community Planning
Community Services
Computer Science
 Key Punch Operator (one semester)
 Computer Operator (one year program)
 Office Technician/Control Clerk
 (one year program)
 Computer Programmer/Analyst
 Computer Systems Programmer
 (continuing education)
Drafting Technology

- Drama
- Electronics Technology
- Engineering
- Exploratory
- Fire Science
- General Business
- Health, Physical Activities, Recreation
- Home Economics
 - Food and Nutrition
 - Food Services
 - Merchandising and Fashion
 - Child Development and Family Relations
 - General Home Economics
 - Education for Home and Family Life
- Law Enforcement
- Liberal Arts
 - Behavioral Sciences
 - Biology
 - Chemistry
 - Communicative Arts
 - Economics
 - Geology
 - Languages
 - History
 - Humanities
 - Literature
 - Mathematics
 - Philosophy
 - Political Science
 - Physics
 - Religions (Comparative)
 - Speech
- Mid-Management
- Music
- Nursing
- Physics
- Pre-Environmental Design
- Radiologic (X-ray) Technology
- Respiratory Therapy
- Secretarial Studies
 - Clerical
 - General Secretary

- Legal Secretary
- Medical Secretary
- Executive Secretary
- Tool and Machine Technology



Accounting

The Accounting program at Pima College combines four semesters of class work with internship at an approved firm.

The principal courses will be taught in English or in Spanish and students completing the program will be prepared to enter accounting departments of private firms or, in some cases, public accounting offices.

A typical two-year program might include two semesters of Accounting (BUS 1 & 2), a semester of Cost Accounting (BUS 56) and a semester of Tax Accounting (BUS 57). Important related courses would probably be Introduction to Computer Science (CSC 47), Programming (CSC 60), Systems Analysis (CSC 80 & 81), Business Mathematics (BUS 51), Business Machines (OED 21), Typing (OED 11), Business Law (BUS 10), Cooperative Accounting (BUS 66), and Payroll Accounting (BUS 63).

Supplementing these would be courses in Technical Writing (COM 4), Economics (ECO 2 & 3), a semester of Management and a semester of Government as well as one elective course in each of four semesters. A typical two-year program will include 63-68 semester hours of credit.



Applied Arts

Students successfully completing the two-year Applied Arts program will be able to enter fields of commercial illustration, photo-journalism, studio photography, industrial or furniture design, audio-visual production, scientific illustration, commercial graphics, signwriting or typography.

Appropriate courses would include Perception (ART 1); Graphics (ART 10), (ART 20), Photography (ART 13); Audio-Visuals (ART 23) and Functional Design (ART 22).

These would be supplemented by related courses in Humanities, Writing, Human Relations, Art History and electives to make up an average semester class load of 16 credit hours.

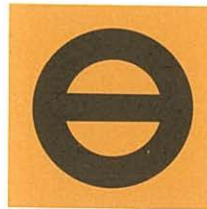


Art

Students completing the two-year Art program will have most of the humanities background neces-

sary to transfer to a university or a professional school to continue formal studies in a chosen art field.

Courses in Perception (ART 1), Art and Culture (ART 15), Graphics (ART 10 or 20), Photography (ART 13), Functional Design (ART 22) and Art History (ART 25) should be supplemented by studies in Humanities, Communicative Arts, Social Science and electives to make up an average semester class load of 17 credit hours. It should be noted that at least 24 credit hours of Art courses are recommended and that at least three semester hours of mathematics or science should be included in the two-year program.



Arts and Crafts

Graduates of the Arts and Crafts program will be artistically proficient in at least one medium, with some background in several media — such as print making, painting, sculpture, ceramics, silversmithing, fabrics and leather.

Students should complete a total of 34 credit hours in Art courses, including Perception (ART 1), Crafts Workshop (ART 9), Graphics (ART 10), Photography (ART 13), Art and Culture (ART 15), and Functional Design (ART 22).

Related courses in Communicative Arts, Behavioral Sciences and Humanities for a total of at least 14 credit hours are recommended.





Automotive Mechanics

Automotive Mechanics/Technology programs are designed to meet a wide range of student needs with the primary objective of fitting the student for job entry at whatever level of study he has completed. The student may at any time complete additional study units to advance his knowledge and qualify himself for a more highly skilled job in his chosen field.

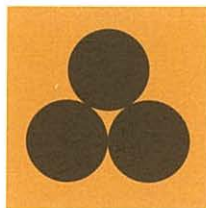
Programs include those designed to qualify an individual as a service station attendant (one year), automobile mechanic (two years of study leading to a certificate) and automotive technology (two years of study leading to an Associate of Science Degree). Shorter periods of study will qualify the individual in automotive tune-up, automotive drive-line repair, and as an automotive chassis and automatic transmission mechanic.

The Service Station Attendant one-year course will normally include 22 credit hours of study in such areas as Engines I (AUT 53), Service Mechanics (AUT 59), Introduction to Mathematics (MTH 84–85), Electricity (ETR 65), Writing (COM 50), Salesmanship (MAN 50), Merchandising (MAN 51) and Human Relations (MAN 58). (22 semester hours.)

The two-year Automotive Mechanic program would add to these basic courses studies in Automatic Transmissions (AUT 50-51), Chassis (AUT 58), Tune-Up (AUT 56), Drive Line (AUT 57), Accounting (BUS 1) and Overhaul (AUT 55). (30 semester hours.)

The degree program in Automotive Technology would further add studies in Management (MAN 63),

Technical Physics (PHY 50), Engines (AUT 54), Electricity (ETR 86-69), Accounting (BUS 1), Air Conditioning (ACD 63), Special Topics in Behavioral Science (BSC 51), and an elective. A total of 64 credit hours would be required for the A.S. degree in this area.



Chemical Technology

A two-year career program in Chemical Technology is in the planning stage at Pima College. Students interested in such a program should check with an admissions counselor at registration.

Recommended first-year courses for this program include Writing (COM 1 & 2), Mathematics (MTH 11, 20, 60, 61, 80 or 81 for a total of from four to seven credit hours), Applied Chemistry (CHM 60-61), Introductory Physics (PHY 2), Slide Rule (CHM 80), and Earth, Man and Environment (LSC 54).



Community Planning

The Community Planning Program is designed primarily to qualify students for employment as assistants to professional planners. Upon completion of the curriculum and requirements, graduates

could work in public and private, city and regional planning offices, redevelopment agencies, and other organizations responsible for urban planning and its administration. It is planned that courses in this study area, leading to an Associate of Arts degree, will be offered beginning in the spring of 1971.

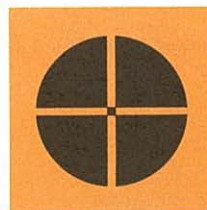


Community Services

The Community Services technician program is designed to prepare students for entry into various agencies which provide community and social services.

Upon completing the program, which leads to an Associate in Arts degree, the graduate is prepared for further education or employment in welfare agencies, youth programs and other private or public enterprises.

The two-year program should include courses in Writing (COM 1 & 4); Earth, Man and Environment (LSC 54); Behavioral Sciences (BSC 20, 31, 32, 33, 34); Mathematics (MTH 60); Oral Communications (SPE 2); Health (PAC 47), Child Development (HEC 17), Humanities (1); Ethnic Studies, Economic Development (ECO 50) and electives. (A typical program should include at least 60 semester hours of credit).



Computer Science

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

Certificates are awarded upon completion of the shorter programs, indicating that the student is qualified as a computer operator, a key-punch operator or an office technician/control clerk.

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

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

In one semester, a student may be prepared to work as a Key-Punch Operator. Courses necessary to this career program include Key Punch (CSC 52), Introduction to Business (BUS 50), Human Relations (MAN 58), Writing (COM 50), Technical Reading (REA 61), Business Machines (OED 21) and either Data Processing Projects (CSC 68) or the Humanities Workshop. (17 semester hours.)

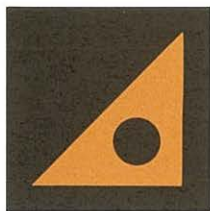
The one-year Office Technician/Control Clerk program adds to the above curriculum Accounting (BUS 1 & 2), Typing (OED 11), Unit Records (CSC 54), Business Mathematics (BUS 51) and related

courses for a total of 34 semester hours of credit.

The two-year Computer Programmer/Analyst program includes 20 credit hours of Computer Science (Introduction, CSC 47; Programming, CSC 60, 62, 70); Systems Analysis (CSC 80-81) and Data Processing Projects (CSC 98). These are supplemented by Accounting (BUS 1 & 2), Economics (ECO 2 & 3), Writing (COM 1 & 2), Cost Accounting (BUS 56), Business Statistics (BUS 6), Reading, Humanities, Human Relations and Philosophy or Science electives for a total of 56-57 semester hours of credit. The Associate in Science degree in Computer Science is awarded upon successful completion of a similar program, made up of at least 67 semester hours of course work.

Additional credits beyond the degree in a three semester continuing education program may be taken by an individual wishing to become a Computer Systems Programmer.

These credits should be distributed among Computer Science (CSC 40), Systems Programming (CSC 90), Operating Systems (CSC 76), Teleprocessing (CSC 94), Advanced Computer Science (CSC 43), Data Processing Projects (CSC 98), Analytic Geometry & Calculus (MTH 30-31). (30 semester hours.)



Drafting Technology

Two-year programs in Drafting Technology lead to the Associate in Science degree and opportunities for employment in drafting departments of

several types of industries. The degree candidate may specialize in architectural, electro-mechanical or mechanical drafting.

Basic courses in all three drafting specialties include Technical Mathematics (MTH 80-81), Technical Drafting (DFT 55-56), Writing (COM 1 & 2), Materials (MAC 90), and Engineering Graphics (MTH 2). Two semesters of Physical Activities are recommended.

Architecture majors should substitute Perception (ART 1), Graphics (ART 10) and Construction Drafting (DFT 61-62) for Technical Drafting.

In the second year, Mechanical majors should add Introduction to Electricity (ETR 53), Introductory Physics (PHY 2), Industrial Processes (MAC 91), Technical Drafting & Tool Design (DFT 57 & 58), Structural Drafting (DFT 64), Technical Illustration (DFT 71), Electronic Drafting (DFT 73) and four hours of electives in Humanities, Social Science or Human Relations.

Second Year Electro-Mechanical majors should take a Mathematics elective and Introduction to Computers (CSC 51) in place of Tool Design and Structural Drafting.

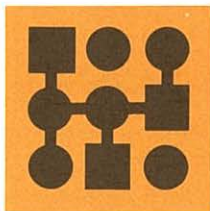
Second year Architectural majors will need a Mathematics elective, Surveying (ENG 21), Architectural Illustration (DFT 63-64), Functional Design (ART 12), Physics (PHY 2), Utilities Drafting (DFT 65), Human Relations (MAN 58), Introduction to Computers (CSC 51) and a Special Project. Drafting majors should include from 62 to 66 semester hours of course work in their programs.



Drama

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

A typical Drama program should include Acting (DRA 5, 6, 48, 49), Stagecraft (DRA 20 & 21), Writing (COM 1 & 2), History (DRA 40 & 41), four semesters of Humanities and electives in Physical Activities and science for a total of 62 to 66 semester hours of credit.



Electronics Technology

Graduates of a two-year Electronics Technology program may expect to find employment in many areas of the electronics field, having completed basic studies in the area. Specialties within the field will probably require additional part-time study or on-the-job training to acquire specific knowledge and skills.

A typical program should include 33 semester

hours of Electronics (Introduction, ETR 53; Semi-Conductors, ETR 55; Circuits, ETR 57; Advance Circuits, ETR 61; Pulse Circuits, ETR 66, and Special Studies in Electronics, ETR 63 or 67). These should be supplemented with studies in Writing, Drafting, Chemistry, Physics, Mathematics, Humanities, Philosophy and Behavioral Sciences. At least one semester of Physical Activities is recommended. A total of 67 semester hours is typical of an Electronics Technology program.

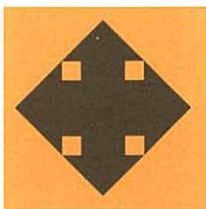


Engineering

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

A typical program in Engineering at Pima College might include three semesters of Analytic Geometry (MTH 30, 31, 32), Chemistry (CHM 3 & 4), Engineering Graphics (ENG 2), Computer Science (CSC 40), Mechanics (PHY 10), Electricity (PHY 16), Waves and Heat (PHY 21), Engineering Analysis (CSC 45), some engineering courses and electives in social sciences, humanities and physical activities for a total of 68 semester hours.





Exploratory

Exploratory programs, to satisfy individual interests, may be arranged through conferences with members of the Student Development Faculty.



Fire Science

At least half of the 60 semester hours required for an Associate in Science degree in Fire Science should be in courses directly related to the field, designed to prepare the graduate for service or additional responsibility in a municipal, rural, or private fire department. The other half of each individual's program, selected after consultation with a registration advisor, should include work in chemistry, mathematics, life science, basic psychology, sociology and American government.

Specialized courses are Introduction to Safety (FSC 51), Fire Suppression (FSC 53), Fire Protection (FSC 52), Fire Prevention (FSC 54), Tactics

(FSC 60), Materials (FSC 61 & 62), Protective Systems (FSC 64), Equipment (FSC 65) and Safety Laws (FSC 71).

Recommended electives are Earth, Environment and Man (LSC 54), Chemistry (CHM 1 & 2), Humanities (HUM 10 & 11) and Algebra (MTH 11).



General Business

General Business programs are designed to enable graduates to enter the modern business world with salable skills in such areas as cashier, bank teller, salesman or Civil Servant. They may also transfer to a four-year college or university to continue their studies toward a Bachelor of Science degree. Many of the courses provide skills of special value to the person operating his own business.

All Business students are advised to include in their programs such courses as Accounting (BUS 1 & 2), Writing (COM 1), Business Law (BUS 10), College Algebra (MTH 20), Math for Business (MTH 25–26), Economics (ECO 2 & 3), and electives in Behavioral or Social Sciences, Humanities or Physical Activities.

Students in the two-year-career should also take Typing (OED 11), Business Communications (BUS 59), Business Management (MAN 52), College Algebra (MTH 20), Business Mathematics (BUS 51), Salesmanship (MAN 50), Introduction to Computers (CSC 47), Personnel Supervision (MAN 54), Earth, Environment and Man (LSC 54), Merchandising (MAN 51), Advertising (MAN 53), and Professional Communications (SPE 20) for a total of 60 semester hours.



Health, Physical Activities, Recreation

Physical activities at Pima College are divided into six broad categories: The philosophical basis of sports; life-long sports activities; intramurals and community competition; cultural movements; explorations; and career orientation.

Students, in beginning courses, will be taught fundamental skills of sports and activities along with rules, scoring, etiquette and safety measures.

Intermediate courses are open to all individuals who have a basic understanding of an activity and wish to improve their skills. Courses on the advanced activity level emphasize special techniques, styles, and strategy of various sports.

The career oriented program at Pima College is designated to meet teaching requirements for health, physical education and recreation major and minor transfers.

Persons planning to major in health or recreations should plan a two-year program with their advisors. They should also familiarize themselves with requirements of universities to which they plan to transfer.

A typical transfer program will include 16 semester hours of Physical Activities courses, Algebra (MTH 11 or 20), Writing (COM 1 and 2), Oral Communications (SPE 2), Child Development (HEC 17), Psychology (BHS 20), Humanities (HUM 10 and 11), Government (POL 10 and 11) and Anatomy (LSC 20 and 21). A total of 64 semester hours is typical of the program.



Home Economics

Both transfer and career programs in Home Economics permit specialization in food and nutrition; food services; merchandising and fashion promotion; child development or family relations and general home economics. The Education for Home and Family Life program, which leads to an Associate in Arts Degree, helps students to prepare for marriage and parenthood. Students may work with advisors to arrange highly individualized course groupings.

Basic studies in Home Economics (HEC 9), Writing (COM 1 and 2), Psychology (BHS 20), Perception (ART 1), Speech (SPE 2) and Economic History (ECO 1) are common to all Home Economics majors.

Food and Nutrition specialization will also include Chemistry (CHE 1 and 2), Sociology (BHS 20), Home Management (HEC 6), Nutrition (HEC 12), Institutional Meal Management (HEC 32) and Family Meal Management (HEC 22). 63 semester hours represent a typical program. Emphasis may be on either home or institutional meal planning, preparation and services.

Merchandising and Fashion specialization should include courses in Clothing (HEC 5), Furnishings (HEC 25), Textiles (HEC 45), Costume Selection (HEC 35), Advanced Clothing (HEC 15).

Child Development and Family Relations programs should include Home Management (HEC 6), Biology (LSC), Education for Marriage (HEC 27), Nutrition (HEC 12 and 42). (64 semester hours.)

General Home Economics majors will need 30 hours of Home Economics courses distributed among first and second year general, foods and

nutrition and clothing and textiles courses. (62 semester hours.)

A similarly diverse program is recommended for the career program in Education for Home and Family Life, which has a somewhat greater emphasis on the Humanities Workshop, of which four semesters are recommended. Up to 27 semester hours of electives in varying fields of interest permit highly individualized development of programs in this area.



Law Enforcement

This two-year program provides professional education and some skills in the field of law enforcement for those seeking a career in either public service or private industry. It is also planned to assist those already employed in law enforcement to improve their professional skills.

Courses within the program are equally appropriate for those seeking an Associate of Arts degree and those planning to continue their studies at a four-year college or university.

Well-rounded education for prospective officers should include courses in Writing (COM 1 & 2), Government (POL 10 & 11), Sociology (BHS 30), Psychology (BHS 20), Humanities (HUM 10 & 11), and Physical Activities in addition to special Law Enforcement classes: Introduction to Law Enforcement (LEN 100), Criminal Law (LEN 102), Crime Investigation (LEN 104), Traffic (LEN 106), and Police and Community Relations (LEN 108). Speech (SPE 2), Economics (ECO 20) and 15 to 17 semester hours of electives round out the program to from 64 to 66 semester hours of course work.



Liberal Arts and Sciences

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

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

The typical program should include 16 hours of Foreign Language, six hours of Writing, eight hours of Humanities, six hours of Social Science and six to eight hours of mathematics or science plus electives in addition to 12 hours in the major field of study.



Mid-Management

Mid-Management, an area of Distributive Education, is an occupation-oriented training program for

students who plan to qualify for junior executive positions in the field of marketing and distribution. Class instruction will be combined with on-the-job training and some basic courses will be taught both in English and in Spanish.

Courses under the general category should include Accounting (BUS 1 & 2), Salesmanship (MAN 50), Merchandising (MAN 51), Marketing (MAN 1), Micro and Macro-Economics (ECO 2 & 3), Business Management (MAN 52), Management Trends (MAN 63 & 64), and Mid-Management (MAN 60 & 61). A typical program would be made up of 62 semester hours of credit.

Students specializing in Advertising should have Advertising Design (MAN 56), Advertising Principles (MAN 53), and Advanced Advertising (MAN 57), as well as Accounting (BUS 1 & 2), Marketing (MAN 1), Salesmanship (MAN 50), Business Management (MAN 52), Merchandising (MAN 51), Management Trends (MAN 63 & 64), Mid-Management (MAN 60 & 61), and Micro-Economics (ECO 2.) Sixty-three semester hours would be typical of a program in this area.



Music

The music program suggested provides the first two years of music experiences generally required by higher institutions of learning. Arizona's three universities require an examination of all students who transfer applied work. All courses listed are merely suggestions. Since different degree problems require different or specific requirements, it

is necessary that each student consult with the music faculty for specific program requirements.

Among suggested courses are Music Literature (MUS 1), Music Theory (MUS 3 & 5), Conducting (MUS 7), Private Instruction (MUS 42 & 43), Piano (MUS 40 & 41) and Voice (MUS 38 & 39). A music program typically includes 22 hours of required courses in Writing, Mathematics, Behavioral Sciences, Humanities or Foreign Language.



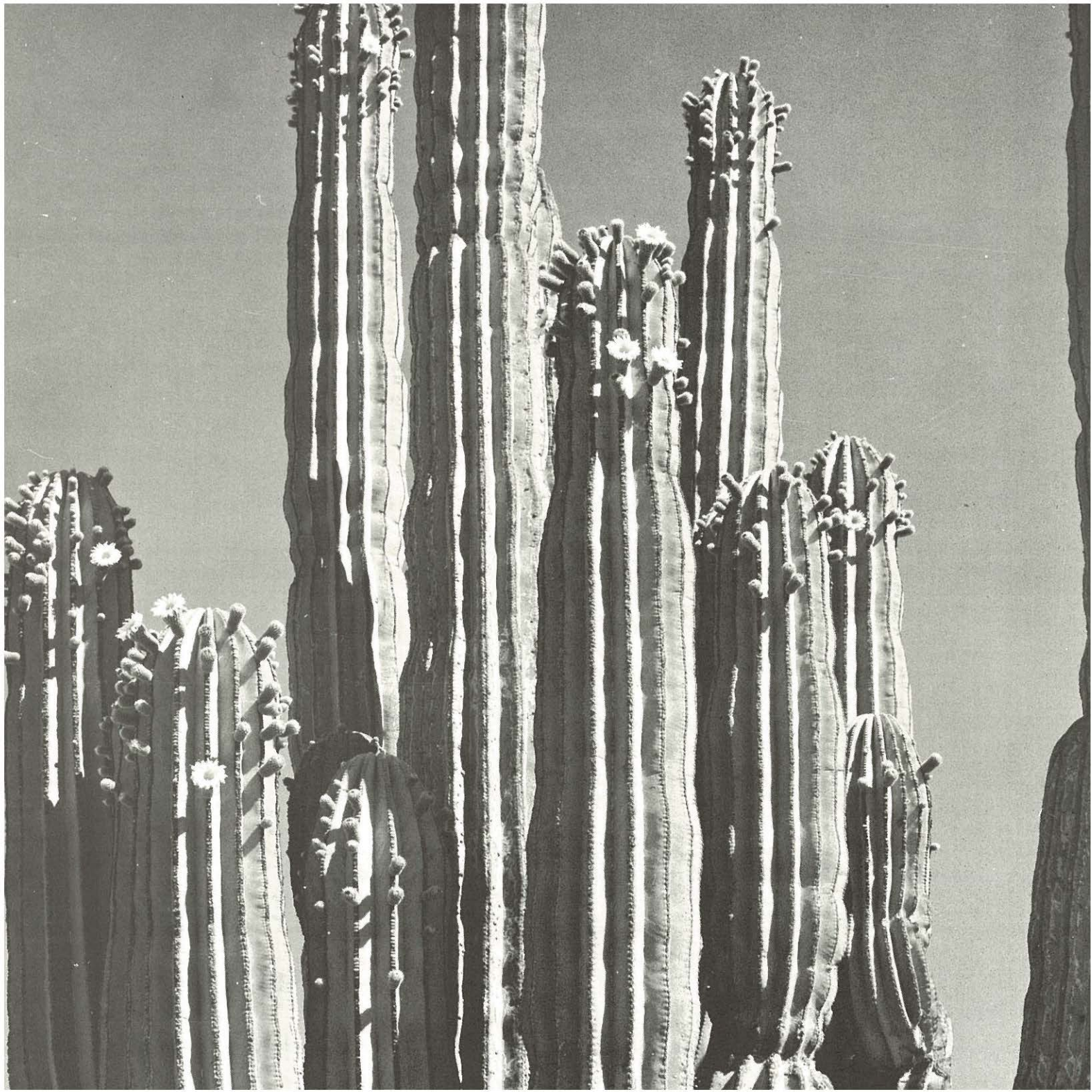
Nursing

Health problems significant to the local community will be stressed during the two-year program which combines general education with a firm foundation in patient care. Students entering the program must have a high school diploma or equivalency certificate, and submit a complete health form, including chest x-ray.

In addition to being prepared to take the state licensing examination for Registered Nurse, the new graduate also will be capable of giving quality nursing care with some degree of independence under the supervision of an experienced professional nurse.

Every student should study Nursing I through IV (NRS 70, 72, 80, 82), Anatomy (LSC 20 & 21), Psychology I (BHS 20), Child Development (HEC 17), Sociology (BHS 30) and Microbiology (LSC 7). (66-68 semester hours.)

All nursing courses must be taken at Pima College.





Pre-Environmental Design

Graduates of the two-year Pre-Environmental Design transfer program will have enough background to work in an architectural office or in related work while completing their education in architecture or environmental design at a university. Courses also will provide a humanist background.

For transfer, students should take Humanities (HUM 10 & 11), Mathematics (MTH 2, 11, 20, 24, 30, 31, or 40), Art and Culture (ART 15), Functional Design (ART 12 & 22), Graphics II (ART 20), Introductory Physics (PHY 2 & 3) or Introductory Physics with Calculus (PHY 4 & 5) and Photography (ART 13) or Crafts (ART 9), along with electives for a total of 64-67 semester hours of credit.



Radiologic (X-Ray) Technology

The total program consists of four semesters on campus and at least 2,400 hours of externship (practicum) in an approved, affiliated hospital x-ray department. Graduates will be qualified for the Associate of Science degree in Radiologic Technology and for application for certification with the American Registry of Radiologic Technologists.

Students, in addition to having a high school diploma or G.E.D. equivalent, must be accepted into an affiliated hospital x-ray department prior to entrance into the program. High School preparation in algebra, geometry, biology and physics will be most helpful. Credit requirements call for 66 semester hours of work with a minimum of 36 semester hours to be completed on campus.

Introduction to Radiography (RAD 71), Positioning (RAD 73, 81, & 84), Radiographic Chemistry and Techniques (RAD 72), Radiographic Physics (RAD 82), Radiobiology (RAD 87), Therapy (RAD 85), Clinical Procedures (RAD 83 & 86), Anatomy (LSC 20 & 21), Introductory Physics (PHY 2) and Writing (COM 2 & 3) should be included in this program.



Respiratory Therapy

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

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

Special courses in the program include Equipment (RTH 71, 80, 81, 87, and 90), Basic Health (RTH 73), Pharmacology (RTH 76), Microbiology (RTH 78), Physiology (RTH 82), Diseases (RTH 86 & 89). In addition the student should take related courses in Writing (COM 1 & 2), Mathematics (MTH 60), Chemistry (CHM 12), Anatomy (LSC 20), Physics (PHY 2), Psychology (BHS 20), Supervision of Personnel (MAN 54) and Humanities (HUM 1).

The completion of the required course work, plus 600 hours of clinical practice will normally necessitate summer work, or an additional semester of study beyond two academic years.



Secretarial Studies

Secretarial studies students will receive practical experience and on-the-job training with course instruction for general, medical, legal, or executive secretary. For on-the-job training, it is recommended that students have either a high school diploma or equivalency certificate. Beginning skill classes will be offered in Spanish as well as English.

Courses provided under the clerical program are Writing (COM 1 & 2), Typing (OED 11, 12 & 13), Business Machines (OED 21), Duplicating Machines (OED 22), Business Law (BUS 10), Business Communications (BUS 59), Business Mathematics (BUS 51), Accounting (BUS 1), and Office Management (OED 57). (66 Semester Hours.)

General secretarial courses include Typing (OED 11, 12, & 13), Shorthand (OED 1, 2 & 3), Record Management (OED 64), Introduction to

Computer (CSC 47), Accounting (BUS 1 & 2), Microeconomics (ECO 2), Business Communications (BUS 59), and Business Law (BUS 10). (63 Semester Hours.)

Additional courses for those planning to be Medical Secretaries are Anatomy (LSC 20 & 21), Medical Shorthand (OED 55), Medical terms (OED 56), Office Internship (OED 60 & 61), and Office Management (OED 62 & 63). (67 Semester Hours.)

Courses for the Executive Secretary include Office Management (OED 62 & 63), Microeconomics (ECO 2), Introduction to Business (BUS 50), Office Internship (OED 60 & 61), Human Relations in Business (MAN 58), Business Math (BUS 51), Business Law (BUS 10) and Accounting (BUS 1). (66 Semester Hours.)

Additional courses for the Legal Secretary include Legal Shorthand (OED 50), Legal Terms (OED 51), and Business Law (BUS 10), in addition to the Executive Secretary curriculum to replace six hours of electives and Introduction to Business. (66-69 Semester Hours.)



Tool and Machine Technology

Basic courses for a career program in Tool and Machine Technology will be offered in the Fall of 1970.

Students planning a career in this field should consult with an admissions counselor in setting up an individual program directed toward more advanced studies in the field when additional courses are added.







Pima College Courses

Course Numbering System

Courses at Pima College numbered 1 through 49 correspond with courses generally offered during the first two years at four-year colleges and universities. Credit for these courses, in most cases, will be transferable for students planning to continue their studies.

Courses numbered 50 through 99 carry Pima College credit. In some instances, these, too, may be transferable to four-year colleges and universities for credit. Students planning a transfer after completing two years at Pima College should check the catalog of the institution they wish to attend.

Courses numbered 100 through 120 are equivalent to those offered in the junior or senior years at Arizona universities. Credit for these upper division courses may be transferable. Each case should be checked individually by the student seeking transfer credit.

Non-credit and workshop type courses are numbered 121 through 199.

An asterisk (*) indicates a course which is a part of the Pima College curriculum but will probably not be offered in 1970-71.

AIR CONDITIONING

ACD 60 Air Conditioning Fundamentals I 4 sem. hrs.
Emphasis is on detail and specific treatment of air conditioning and problem solving techniques. Areas covered are psychrometry, ventilation, heating and cooling load calculations.

Laboratory work consists of refrigeration tube bending, flaring, soldering and brazing; cooling load calculations, dew point determination; and precision measurement of air temperatures, quantities and velocities.
First or Second Year Level.

ACD 61 Air Conditioning Fundamentals II 4 sem hrs.
Continuing detailed study of air conditioning fundamentals and problem solving methods. Areas covered are compression and absorption, refrigeration cycles; fans and blowers, and duct design. Laboratory consists of refrigeration compressor and disassembly, and expansion valve performance check. (To be offered in the Spring of 1971.)
First or Second Year Level.
Prerequisite: ACD 60.

ACD 63 Air Conditioning Basics (Automotive) 1 credit
Fundamentals of refrigeration; Principles of Automotive Air Conditioning Design; Related Mathematics & Drawings; Specification Charts & Tables; and Safety Practices.

ART

ART 1 Perception 4 sem hrs.
A pursuit of environmental awareness and methods of non-verbal communication through rediscovery of light, color, texture, form, space and movement. Work with cameras, models, constructions, graphics. Demonstrations and presentations by members of the faculty, student body and community will be followed by small group sessions for discussion and interaction.
First Year Level.

ART 9 Crafts Workshop 2 to 4 sem. hrs.
Application of perceptual concepts to craftwork, including exploration of such activities as leather work, silversmithing, silk screen, and printing. Students of various levels of experience work alongside one another or with a craftsman to pursue the disciplines of a craft.
First Year Level.
Prerequisite: ART 1.

ART 10 Graphics I 2 to 4 sem. hrs.
Exploration of sensory experience and visual communication. Introduction to drawing, lettering and conceptual problems of design in extensive studio practice and experimentation.
First Year Level.
Prerequisite: ART 1.

ART 12 Functional Design I 2 to 4 sem. hrs.
Application of perceptual concepts to our physical and technological environments. Participants, individually and in teams, develop models for exploring simple problems of function. Studio activity is as directly involved with real environment as possible. (To be offered in the Spring of 1971.)
First Year Level.
Prerequisite: ART 1.

ART 13 Photography **3 sem. hrs.**
Black and white photography as a craft and its creative use in expression and illustration. Awareness exercises lead to use of the view camera in the field and studio and completion in the dark room. Group discussions and critiques.
First or Second Year Level.
Prerequisite: ART 1 or equivalent.

ART 15 Art and Culture **3 sem. hrs.**
Illustration and discussion of meaning and value in art forms from various traditional and contemporary cultures. Some studio experience included. (Same as Philosophy 15.) (To be offered in the Spring of 1971.)
First Year Level.
Prerequisite: ART 1 or equivalent.

***ART 20 Graphics II** **3 to 6 sem. hrs.**
Continuation of the two dimensional design foundation into the special problems of the graphics industry and commercial design. On an individual basis, the student pursues solutions to problems of a meaningful graphic environment.
Second Year Level.
Prerequisite: ART 10.

***ART 21 Visual and Spacial Arts** **2 to 6 sem. hrs.**
Intensive studio experience with one or more media such as easel painting, carving, figure drawing or modeling, print making and metal sculpture. Stress is on individual exploration, leading to the development of self discipline.
Second Year Level.
Prerequisite: ART 10

***ART 22 Functional Design II** **3 to 6 sem. hrs.**
Introduction to architectural, landscape, interior and industrial design problems. Individuals and small teams pursue problems in designing environmental solutions as well as participating in studio exercises.
Second Year Level
Prerequisite: ART 10, 12, 20.

***ART 23 Audio Visual Communication** **2 to 4 sem. hrs.**
Expansion of the still photography experience to the photo essay, slide tape programs, and sound film production. Individual and group projects will explore communication through visual statements integrated with verbal, sound or musical content.
Second Year Level
Prerequisite: ART 13.

***ART 25 Art History** **2 to 4 sem. hrs.**
Study of particular schools, periods or cultural traditions in art. Individual students design a program for pursuing a limited aspect of developments in art and film. Periodically, students present their experiences to a larger audience.
Second Year Level.
Prerequisite: ART 15.

ART 26 Early African Art **3 sem. hrs.**
Traditional forms of African art from pre-literate times to the present will be covered through visual and audio presentations. Discussion will be aimed at understanding the relationship of African art to the Western world. Student projects and field trips.
First or Second Year Level.

ART 27 Pre-Columbian Art **3 sem. hrs.**
A visual survey of the art styles of ancient Mexico. Students will be involved in reproducing some of the materials studied. Movies and field trips will be included.
First or Second Year Level.

ART 121 Handwriting
Introduction to handwriting through demonstrations and practice with the pen.
Non-Credit.



AUTO MECHANICS

AUT 50 Automotive Transmissions I **2 sem. hrs.**
A two semester course covering the construction, operation, maintenance, adjustment and overhaul of automatic transmissions.

AUT 51 Automatic Transmissions II **2 sem. hrs.**
Continuation of AUT 50 for a complete automatic transmissions study.

AUT 53 Engines I (Auto.) **2 sem. hrs.**
This is a basic course which covers the function of the gasoline and diesel automotive engines.

AUT 54 Engines II (Auto.) **3 sem. hrs.**
Offers the student practical experience in engine maintenance and service. Fundamental knowledge in theory design construction and service procedures are studied.

AUT 55 Engine-Overhaul, Automotive **3 sem. hrs.**
Development of work skills and proficiency in engine rebuilding are emphasized.

AUT 121 Know Your Car
This course is designed to help laymen (and women) to understand basically how a car is supposed to function, what to expect from the car and how to recognize trouble signs. Safety and how to deal with a mechanic or service man also will be discussed. (12 week course offered three times a year. Includes one hour lecture and two hours lab work.)
Non-Credit Course.



BEHAVIORAL SCIENCES

BHS 1 Introduction to Cultural Anthropology **3 sem. hrs.**
A study of how our culture influences the way we behave. A look at our culture and other cultures, using the tools of anthropology. (Offered Fall of 1970.)
First Year Level.

BHS 2 Introduction to Physical Anthropology 3 sem. hrs.
Man's evolution, including his origin, distribution, and variation. Race and racism in the modern world also will be explored. (To be offered in the Spring of 1971.)

***BHS 3 Cultural Anthropology 3 sem. hrs.**
An intensive introduction to the methods by which different cultures are studied and compared. Particular attention will be given to anthropological theory, the meaning of culture and cultural change, and the relationships between dominant and minority groups. (Offered Fall of 1971.)
Second Year Level.
Prerequisite: BHS 1.

BHS 4 Archaeology 3 sem. hrs.
The history of archaeological research, and a survey of concepts and methods for the study of prehistoric cultures. The student will be exposed to how archaeologists reconstruct human history from the past through material they find in the field. (May be offered in the Spring of 1971.)
Second Year Level.
Prerequisite: BHS 1.

BHS 6 Contemporary Indian Groups of the Southwest 3 sem. hrs.
Studies in the history and life styles of living tribes of the Southwest, with emphasis on Arizona. Discussions and field trips will help the student compare modern Indian groups and their ways of life. (May be offered in the Spring of 1971.)
First or Second Year Level.

BHS 7 Papago History and Culture 3 sem. hrs.
Where have the Papago people been, who are they, where are they going? In answering these questions, the class will examine the history and culture of the Papago. (May be offered in the Spring of 1971.) (Same as History 7.)
First or Second Year Level.

BHS 8 Indians of North America 3 sem. hrs.
The origins of North American tribes, their relationships and contemporary problems are examined. (May be offered in the Spring of 1971.)
First Year Level.

BHS 9 History and Culture of the Mexican-American in the Southwest 3 sem. hrs.
(Same as History 9.)

BHS 10 The Mexican-American in Transition 3 sem. hrs.
What is it like to be a Mexican in American society today? The problems resulting from differences in cultures, values and needs will be examined through class discussion and participation in related activities in the community. (May be offered in the Spring of 1971.)
First or Second Year Level.

***BHS 11 Culture and Personality of the Mexican-American 3 sem. hrs.**
A review of how the culture and personality of the Mexican-American differ from those of other people and what it means to the individual.
First or Second Year Level.

BHS 12 Afro-American History and Peoples 3 sem. hrs.
What does the Afro-American have to face because he is a Black in American society? His past, present and future are examined. (Same as History 12.)
First or Second Year Level.

***BHS 13 History and Peoples of Africa 3 sem. hrs.**
(Same as History 13.)

BHS 14 History and Peoples of Latin America 3 sem. hrs.
(Same as History 14.)

***BHS 15 History and Peoples of Asia 3 sem. hrs.**
(Same as History 15.)

BHS 16 Introduction to Community Organization and Development 3 sem. hrs.
A study of the theory of organization of groups to effect change and of the role of the professional organizer. Students, under direction, will be involved in informal and formal groups within the Tucson community for purposes of observation and experience. (May be offered in the Spring of 1971.)
First Year Level.

BHS 19 Individual Studies in Anthropology 1 to 3 sem. hrs.
Independent readings or special projects of interest to the student, through arrangement with the instructor. (To be offered in the spring of 1971.)
First Year Level.

BHS 20 Introduction to Psychology I 3 sem. hrs.
Psychology as it is related to the problems of every-day life. (Offered Fall of 1970.)
First or Second Year Level.

BHS 21 Introduction to Psychology II 3 sem. hrs.
This course is specifically designed as preparation for upper division courses in psychology. (To be offered in the Spring of 1971.)
First or Second Year Level.

BHS 22 Introduction to Social Psychology 3 sem. hrs.
A look at how an individual interacts within a group. (Offered Fall of 1970.)
First or Second Year Level.

BHS 23 Normal Personality and Human Potential 3 sem. hrs.
What could a person be if he were at his best? This course may suggest some ways of starting toward that. (Offered Fall of 1970.)
First or Second Year Level.

***BHS 24 Life Styles in Ghetto Society 3 sem. hrs.**

A study of the life of urban disadvantaged groups. (Offered Fall of 1970.)

First or Second Year Level.

BHS 25 Social Psychology Practicum 3 to 5 sem. hrs.

Familiarization with some specific area of social psychology through a review of pertinent research, directed observation, and personal participation in relevant experimental or natural settings. (Offered Fall of 1970.)

First or Second Year Level.

Prerequisite: Permission of instructor.

***BHS 26 Explorations in Prejudice 3 sem. hrs.**

Why we hate each other. What we as participants in this course do about our own prejudice and prejudice in the community.

(Offered Fall of 1970.)

First or Second Year Level.

BHS 30 Introduction to Sociology 3 sem. hrs.

What this society is, how we live in it, and what we can do with it. (Offered Fall of 1970.)

First or Second Year Level.

BHS 31 Current United States Social Problems 3 sem. hrs.

How individuals get constructively involved. (Offered Fall of 1970.)

First or Second Year Level.

***BHS 32 Introduction to Civil Rights Practices 3 sem. hrs.**

An explanation of legal practices and regulations with emphasis on individual rights and problems, the welfare system, financial contracting, health and building codes, and administrative processes in the schools. Applied field work included. (Included in Political Science 49.) (Offered Fall of 1971.)

First or Second Year Level.

BHS 33 Introduction to Social Welfare 3 sem. hrs.

Our social welfare system; what it has been, what it is, and what it may become in the nation and in the local community.

(Offered Fall of 1970.)

First Year Level.

BHS 34 Introduction to Casework 3 sem. hrs.

An introduction to the theory and practice of casework within the context of the Southwest: interviewing, case history and review, and how to develop a helping relationship. (To be offered in the Spring of 1971.)

First Year Level.

***BHS 35 Introduction to Group Work 3 sem. hrs.**

Group work including personal growth, leadership and organization development in different economic and cultural settings. Both directive and non-directive techniques will be studied. (Offered Fall of 1970.)

Second Year Level.

BHS 47 Investigations in Values: Contemporary and Future 3 sem. hrs.

(Same as Philosophy 47.)

BHS 48 Special Topics in the Behavioral Sciences (or) Meeting with Change 3 to 6 sem. hrs.

Topics such as alienation, altered states of consciousness, death, parapsychology, Utopian society, man and his symbols, human sexual behavior, and ceremonial behaviors. To be offered dependent on the background and current interests of faculty and students. (Offered Fall of 1970.)

First or Second Year Level.

Prerequisite: Permission of instructor.

BHS 49 Individual Studies in Behavioral Sciences 3 to 6 sem. hrs.

Exploration of areas of special interest. Content to be determined by student and facilitator-instructor. (To be offered in the Spring of 1971.)

First or Second Year Level.

Prerequisite: Permission of instructor.

BHS 50 Man in the Computer Age 3 sem. hrs.

A view of the world into which we are moving, emphasizing man's relationship to machines, particularly the computer. A cross-curriculum course including units from computer science, behavioral science, economics and technological areas. (Same as Computer Science 50.) (To be offered in the Spring of 1971.)

First Year Level.

BHS 51 Special Topics in Human Relations in Business and Industry 3 sem. hrs.

Special aspects of business and industrial psychology developed from the needs of registrants. (Offered Fall of 1970.)

First or Second Year Level.

***BHS 52 Teachers and Children 3 sem. hrs.**

A discussion of pertinent topics developed for practicing teachers and teacher aides evolving from needs of individual participants. (Offered 1971-72 academic year.)

Second Year Level.

BHS 54 Earth, Environment and Man 3 sem. hrs.

(Same as Life Sciences 54.)

BHS 55 Topics in Community Involvement 1 to 3 sem. hrs.

Direct constructive student involvement in community problems, as individuals or small teams. Specific activities to be determined and guided through periodic consultation with an appropriate faculty advisor. (Offered Fall of 1970.)

First or Second Year Level.

Prerequisite: Admission at discretion of instructor.

BHS 58 Human Relations in Business and Industry 3 sem. hrs.

(Same as Management 58.)



CHEMISTRY

CHM 1-2 Introductory Chemistry 5-5 sem. hrs.

Classification and structure of matter along with basic principles of chemical reactions and their relevancy to common environments. Designed for the non-science major, the course will meet the needs and interests of these students.

First Year Level.

Prerequisite: MTH 70 or equivalent background.

CHM 3-4 General Chemistry 4-4 sem. hrs.

Essential concepts, models and problem solving techniques. Emphasis is on chemical bonding, periodicity, chemical properties, stoichiometry, kinetics and descriptive inorganic chemistry.

First Year Level.

Prerequisite: High School chemistry, concurrent enrollment in MTH 20, or equivalent background.

CHM 5 Analytic Chemistry 4 sem. hrs.

A course in the use of basic chemical principles and modern instrumentation in the analysis of materials. (May be offered in the Fall of 1970.)

Second Year Level.

Prerequisite: CHM 3-4 or permission of instructor.

CHM 12 Fundamentals of Chemistry 3 sem. hrs.

The classification and structure of matter as a basis for the study of the chemistry of some life processes.

First Year Level.

CHM 40-41 Organic Chemistry 4-4 sem. hrs.

An integrated course in the fundamentals of organic chemistry covering the occurrence, uses, syntheses, analyses and typical reactions of important classes or organic compounds. (May be offered in the Fall of 1970.)

Second Year Level.

Prerequisite: CHM 3-4, equivalent or permission of instructor.

CHM 50 Topics in Physical Science 1 to 4 sem. hrs.

Special topics selected according to needs of students requiring material not covered in regular listings.

Level — Variable.

Prerequisite: Consent of instructor.

CHM 60 Applied Chemistry I 4 sem. hrs.

Introductory chemistry, beginning instrumentation and practical chemistry. Emphasis is placed on the laboratory aspect and is intended to provide the student with immediate employable skills.

First Year Level.

CHM 61 Applied Chemistry II 4 sem. hrs.

A continuation of Applied Chemistry I. More mathematics are employed in the course and there is greater depth in instrumentation uses.

First Year Level.

Prerequisite: CHM 60.

CHM 80 Slide Rule and Calculators 2 sem. hrs.

Practical aspects of slide rule use are studied. Also, short cuts in calculations and experience with various calculating devices.

First Year Level.

Prerequisite: MTH 11 or 60.



COMMUNICATIVE ARTS

COM 1 Writing I 3 sem. hrs.

An introduction to the joy of writing and writing well. Students will share, in small groups, the reading and discussion and individual journals.

First Year Level.

COM 2 Writing II 2 sem. hrs.

The excitement of writing meets the needs of advanced college work. Readings in fiction and poetry are included. Research Paper course (COM 3) must be taken with this course for college transfer.

First Year Level.

Prerequisite: COM 1.

COM 3 Research Paper 1 sem. hr.

This course is a part of Writing I and II (COM 1, 2). Students doing a research paper in any area may take this course to learn techniques and formats of research papers.

First or Second Year Level.

COM 4 Technical Communications 3 sem. hrs.

Basic techniques of writing long and short reports, abstracts and other forms required in scientific and technical occupations. The course will be structured to allow students to work on writings required in current courses and in future occupations. (To be offered in the Spring of 1971.) (Same as Machine Technology 4.)

Second Year Level.

COM 5 Imaginative Writing 1 to 4 sem. hrs.

Creation of imaginative writing and experimental writing such as short stories and poems will be demonstrated, shared, and discussed by class members. Publication will be encouraged. (Same as Spanish 5.)

First or Second Year Level.

COM 6-7 Reporting 3 sem. hrs.

The gathering, selecting, evaluating and writing of news.

First or Second Year Level.

COM 10 Exploring Mass Media 3 sem. hrs.

What is happening to us with TV in our homes and newspapers on our doorsteps? Should persons go to a drive-in or sit at home and watch TV? Evaluation of information and its sources.

First or Second Year Level.

COM 20 Advanced Composition 3 sem. hrs.

Practice in writing a variety of forms such as reports, journals, interviews, essays, letters, and whatever other writing students may wish.

First or Second Year Level.

COM 50 Plain Writing 3 sem. hrs.
Practical experience in solving individual everyday writing problems.
First or Second Year Level.

COM 52 Language Usage 3 sem. hrs.
Students involved in a variety of college programs will meet with several instructors in a student-instructor exchange designed to develop reading, writing and speech skills in each individual. The class will meet five times weekly from 9 a.m. to noon and grades will be on a pass/no-credit system. Limited enrollment. (May be offered in the Fall of 1970.)
First Year Level.



COMPUTER SCIENCE

CSC 40 Computer Science I 1 to 3 sem. hrs.
A study of programming in the FORTRAN IV language. Application of programming to the numerical solution of problems. Includes flowcharting, block diagramming, documentation, and writing of programs. Problems are suited to business, engineering or math, depending upon students' objectives. First half of course satisfies the one unit transfer credit. (Same as Mathematics 40.)
First Year Level.

* **CSC 43 Advanced Computer Science-Mathematics** 3 sem. hrs.
(Same as Mathematics 43.)

* **CSC 45 Engineering Analysis-Modeling and Simulation** 3 sem. hrs.
Construction and analysis of models of engineering systems. Manipulation of these models by digital computers.
Second Year Level.
Prerequisite: MTH 30, 31, 32, PHY 16, 21.

CSC 47 Introduction to Computers 3 sem. hrs.
Relating the computer to manual processing systems through unit record systems. Introduces stored program concept, management information systems, machine configuration and storage, flowcharting and block diagramming, documentation, and the Report Program Generator language. Business problems will be programmed by students in Report Program Generator.
First Year Level.

CSC 50 Man in the Computer Age 3 sem. hrs.
(Same as Behavioral Sciences 50.)

CSC 51 Introduction to Numerical Control 2 sem. hrs.
This course introduces the student to the meaning of numerical control and its application to the control of machines, processes and manufacturing operations. Occupational opportunities in the field are reviewed. (Same as Machine Technology 51.) (May be offered in the Fall of 1970.)
First Year Level.

Prerequisite: High School or equivalent or instructor's permission.

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

CSC 54 Unit Record Concepts, Operations and Procedures 3 sem. hrs.
Basic concepts and operation of unit record systems are taught, including set-up, wiring of panels and operation of IBM peripheral equipment. Procedures and controls in a unit record system will be emphasized, as well as proper card handling. Introduces computer hardware and operations.
First Year Level.

CSC 56 Computer Operations 3 sem. hrs.
Instruction and lab experience in operations of a computer, covering tape, disk, printer, reader-punch, console and in-house role of the operations section including scheduling of jobs. Hands on training in at least one operating system is required.
First Year Level.
Prerequisite: CSC 54, or consent of instructor.

CSC 58 Job Stream Concepts and Operations 3 sem. hrs.
A study of control statements and functions needed for computer operation. Multi-programming considerations, system flow, device assignment, labels on tape and disk, utility programs, and linkage editing are covered. Hands-on operation required. (To be offered in the Spring of 1971.)
First Year Level.
Prerequisite: CSC 47, 56.

CSC 60 Programming II 3 sem. hrs.
Comprehensive study and practice of writing programs in COBOL, standard business language. Proper documentation and programming standards are included, as are programming techniques to utilize auxiliary storage devices. (To be offered in the Spring of 1971.)
First Year Level.
Prerequisite: CSC 47 or consent of instructor.

CSC 62 Programming III 3 sem. hrs.
Comprehensive study and practice of writing programs in a high level language such as PL/1. Proper documentation and programming standards are included, as are programming techniques to utilize auxiliary storage devices.
First Year Level.
Prerequisite: CSC 47 or consent of instructor.

CSC 64 Numerical Controlled Machines I 2 sem. hrs.

The course includes basic numerical control hand programming, steps for the execution of a numerical control job and system components. (To be offered in the Spring of 1971.) (Same as Machine Technology 64.)

First Year Level.

Prerequisite: CSC 51, 52, MTH 80, DFT 55, or consent of instructor.

CSC 65 Computer Programming-Fortran and AD-APT 1 3 sem. hrs.

Develops a basic understanding of the Fortran language in mathematical statements as an introduction to AD-APT language in programming for use on numerical control machines. (To be offered in the Spring of 1971.) (Same as Machine Technology 65.)

First Year Level.

Prerequisite: MTH 80 or consent of instructor.

CSC 68 Data Processing Projects I 1 to 5 sem. hrs.

Practical work experience on assigned projects in a data processing installation, under supervision of the installation's management and the instructor. Work standards and problems met in a work situation will be covered, as will opportunities for occupational advancement.

First Year Level.

Prerequisite: Consent of instructor.

CSC 70 Programming IV 3 sem. hrs.

A study of an Assembly Level language and its relationship to machine language. Emphasis on Standard and Decimal Instruction sets, sub-routine control and linkage. Debugging techniques and basic input/output control system applications are covered. Lab experience is provided.

Second Year Level.

Prerequisite: CSC 47, 62, 65, or consent of instructor.

CSC 74 File Management and IOCS 3 sem. hrs.

Data organization and file management techniques with IOCS applications are thoroughly explored. Interaction of the operating system and multiprogramming considerations are covered.

Second Year Level.

Prerequisite: CSC 70 or consent of instructor.

CSC 76 Operating Systems I 3 sem. hrs.

A study of functions and design of a computer's operating system. Emphasizes system generation as affected by computer size, configuration, and needed library routines and macros. The class will work through an actual generation of an operating system. (To be offered in the Spring of 1971.)

Second Year Level.

Prerequisite: CSC 70 or consent of instructor.

CSC 77 Numerical Controlled Machines II 3 sem. hrs.

This course completes hand programming for point-to-point programs, and starts continuous path programming. Calculations are made manually and computer aided for two-axis numerical control machines using AD-APT language with campus computer.

Second Year Level. (Same as Machine Technology 77.)

Prerequisite: CSC 64 or consent of instructor.

CSC 78 Programming AD-APT II and APT I 5 sem. hrs.

This course completes AD-APT language and two-axis programming and starts APT language and introduces three and multi-axis numerical control programming. (Same as Machine Technology 78.)

Second Year Level.

Prerequisite: CSC 65.

CSC 80 Systems Analysis and Design I 3 sem. hrs.

A study of the tools of systems analysis: program design, data management, logic, decision tables, specifications for auxiliary storage devices, layouts and narratives. A project is required of each student.

Second Year Level.

Prerequisite: CSC 60, 62, 70, or consent of instructor.

CSC 81 Systems Analysis and Design II 3 sem. hrs.

Includes a feasibility study, with analysis of various hardware and applications. Emphasis is upon the need for management information for decision making and control, and an understanding of the place of electronic data processing in this environment. (To be offered in the Spring of 1971.)

Second Year Level.

Prerequisite: CSC 80.

***CSC 85 Computer Programming APT II** 4 sem. hrs.

Completes computer aided parts programming for two axis, three axis, and multi-axis machines. (Same as Machine Technology 85.)

Prerequisite: CSC 78.

CSC 90 Systems Programming Theory I 3 sem. hrs.

The writing of compilers, operating systems, and utility programs. Sorting and timing techniques included. (To be offered in the Spring of 1971.)

Second Year Level.

Prerequisite: CSC 76 or consent of instructor.

***CSC 93 Introduction to Terminals Computer** 2 sem. hrs.

(Same as Machine Technology 93.)

Prerequisite: CSC or MAC 78.

***CSC 94 Teleprocessing Concepts I** 3 sem. hrs.

Topics covered are terminology of teleprocessing systems, hardware characteristics, considerations of direct access, backup and recovery procedures, buffering and queuing techniques.

Second Year Level.

Prerequisite: CSC 74, 81 or consent of instructor.

CSC 98 Data Processing Projects II 1 to 5 sem. hrs.

Practical work experience on assigned projects in a data processing installation, under the supervision of the installation's management and the instructor. Designed to provide

students with experience in defining and solving problems in a work situation. (To be offered in the Spring of 1971.)
Second Year Level.

Prerequisite: Consent of instructor at end of second year program.



DRAFTING

DFT 51 Mechanical Drawing 3 sem. hrs.

Introduction to use of drafting instruments, basic geometric construction, principles of orthographic projection, simple work drawings. Introduction to standard drafting room practices and conventions. Course specifically designed for students who have not met university requirements of one unit of mechanical drawing in high school.
High School Level.

DFT 55 Technical Drafting I 3 sem. hrs.

Designed for the drafting technician student. This is the first of a series of four courses to develop skills and proficiency. The student proceeds through problems encountered in his association with engineers and designers. Familiarization with drafting tools, sketching, lettering, geometric construction, orthographic projection, dimensioning, isometrics, sections and auxiliary views, with use of military standards and specifications as a guide.
First Year Level.

DFT 56 Technical Drawing II 3 sem. hrs.

Continuation of Drafting 55 with the following content utilized for problem solving: pictorial sections, secondary auxiliaries, auxiliary sections, threads, threaded fasteners, detail drawings with tolerance, allowance and true position dimensioning, descriptive geometry and introduction to assembly drawings. (To be offered in the Spring of 1971.)
First Year Level.

Prerequisite: DFT 55.

DFT 57 Technical Drawing III 3 sem. hrs.

This course follows Drafting 56 to further develop skills and drafting applications for the drafting technology major. Topics covered are: intersections, developments, revolutions, topographical drawing, and pipe drawing. (May be offered in the Spring of 1971.)
Second Year Level.

Prerequisite: DFT 56.

*** DFT 58 Tool Design** 4 sem. hrs.

Introduction to the problems of tool design, drill jigs, radius dies, fixtures, welding jigs and assembly jigs. The industrial process and reference books are studied and drawings prepared concurrently with the study of related shop practices, mathematics, geometry, materials and basic tools of jig and fixture fabrications.
Second Year Level.

Prerequisite: ENG 2 or DFT 55.

DFT 61 Construction Drafting I 2 sem. hrs.

Introduction to drafting equipment and blueprint reading. Basic floor plans, plot plans, elevations, roof plans, electrical, plumbing and heating-ventilation plans will be discussed and produced. Framing details and building codes will be involved.
First Year Level.

DFT 62 Construction Drafting II 2 sem. hrs.

A set of plans for a "typical" Southern Arizona area home or small business building will be designed and submitted after consideration of design, structural details, materials and estimate of cost.

First Year Level.

Prerequisite: DFT 61.

DFT 63 Architectural Illustration 2 sem. hrs.

Perspective renderings in black and white, and colors — shades and shadows, and landscaping designs are studied.

Second Year Level.

Prerequisite: DFT 62.

DFT 64 Structural Drafting 3 sem. hrs.

A practical study of structural steel, its strength and design capabilities, its fabrication, welding design and symbols, and standard drawings for steel construction.

Second Year Level.

Prerequisite: DFT 62.

DFT 65 Architectural Utilities Planning 2 sem. hrs.

A study of the basic designs for heating-cooling, plumbing and electrical plans in accordance to specifications and building codes. Familiarity with materials and fabrication details will be stressed.

Second Year Level.

Prerequisite: DFT 62.

DFT 71 Technical Illustration 2 sem. hrs.

Course is designed to provide skills in producing drawings for technical publications, advertising art studios, production illustrations. Content includes freehand sketching of mechanical parts and assemblies and isometric, oblique and perspective drawings, including air brush experience. (May be offered in the Fall of 1970.)

Second Year Level.

Prerequisite: DFT 55, ENG 2, 25.

DFT 73 Electronic Drafting 3 sem. hrs.

Offered primarily for the drafting technician student. A depth of instruction is provided in schematic diagrams, block diagrams, component characteristics, wiring diagrams, and printed circuits.

First Year Level.

Prerequisite: DFT 51 or equivalent, 55.

DFT 75 Drafting for Machine Technology I 4 sem. hrs.

This course includes reading shop prints and other drawings in an industrial establishment, layout practice, the use of tools

for machine shop layout, applying descriptive geometry, free-hand machine shop sketching and an introduction to tool designing (fixture and jig). (Same as Machine Technology 75.) First Year Level.

Prerequisite: High School or equivalent, or instructor's permission.

DFT 76 Drafting for Machine Technology II 3 sem. hrs.

Course provides student with the information and skill necessary for a sound understanding of the tooling trade related to numerical control. The student will demonstrate this knowledge by preparing reports and drawings pertaining to basic tools (fixtures and jigs) for machine operator's documents. (Same as Machine Technology 76.) (To be offered in the Spring of 1971.)

First Year Level.

Prerequisite: DFT 55, MTH 80 or consent of instructor.

DFT 77 Electro-Mechanical Design 4 sem. hrs.

Practical packaging problems common to the electronics industry are studied. Includes electrical, mechanical, environmental, functional and manufacturing involvement in the design of electro-mechanical gear.

Second Year Level.

Prerequisite: DFT 73.

 **DRAMA**

DRA 5-6 Introduction to Acting 3-3 sem. hrs.

Introduction to performance techniques and the development of physical skills for effective performance; techniques of acting and characterization and the actor's relationship to all aspects of theatrical production.

First Year Level.

DRA 9 Ethnic Theater 1 to 4 sem. hrs.

Experience in and study of theater as a social communication, including Mexican-American, Black and American Indian forms of dramatic presentation.

First or Second Year Level.

DRA 20-21 Stagecraft and Production 2-2 sem. hrs.

Study of and experience in the technical organization of the theater, stage management, scenery construction and painting, basic drafting, special effects, and lighting mounting and operations.

First Year Level.

DRA 23 Theater Graphics 2 sem. hrs.

Study and application of basic graphic skills and design elements of theatrical production.

First or Second Year Level.

DRA 40-41 History of the Theater 3-3 sem. hrs.

A study of theater and drama from primitive rituals to the present, including European, Oriental, African and American cultural influences on the development of various dramatic levels.

Second Year Level.

DRA 48-49 Intermediate Acting 3-3 sem. hrs.

The theories of and experiences in creating sustained and logical character portrayals, using all types of dramatic literature from various cultures.

Second Year Level.

 **EARTH SCIENCES**

ESC 1 Physical Geography 4 sem. hrs.

The physical elements — weather, climate, vegetation, land-forms and soils — are interrelated with one another, forming patterns of great importance to man. This course is about those elements, their interrelationships, the resulting patterns and why they are important.

First or Second Year Level.

ESC 2 Cultural Geography 4 sem. hrs.

This is a course about people, where and how they live and some of the reasons why they live as they do. Race, language, religion and the physical environment are woven together and changed by time to produce many different economics and settlement patterns. (To be offered in the Spring of 1971.)

First or Second Year Level.

ESC 3 Economic Geography 3 sem. hrs.

The many ways man earns a living are examined as to level, type, location and interrelationship. World distribution of natural resources, agriculture and manufacturing are shown in relation to transportation, energy sources, markets and climate. (May be offered in the Spring of 1971.)

First or Second Year Level.

ESC 4 Geography for Education Majors (Primary) 3 sem. hrs.

Fundamentals of physical, cultural and economic geography as they relate to elementary education. This course is offered for prospective education majors and elementary teachers. (May be offered in the Spring of 1971.)

First or Second Year Level.

ESC 20-21 Introductory Geology 4-4 sem. hrs.

An introduction to our planet, Earth. About five billion years of history as revealed in common rocks and minerals, fossils and geologic features will be related to principles and processes of the science. Some oceanography, meteorology and astronomy will be incorporated.

First or Second Year Level.

ESC 54 Earth, Environment and Man 3 sem. hrs.

(Same as Life Sciences 54.)

ESC 121 Introduction to Maps

For hunters, hikers, housewives and travelers. How to read, use and obtain road and topographic maps, elements of map construction and an introduction to some special purpose maps. (Can be offered in the Fall of 1970 if enrollment is justified.) Non-Credit.



ECONOMICS

ECO 1 Economic History 3 sem. hrs.
Historical origins of the economic institutions of the United States and their evolution will be surveyed as a basis of understanding our present economy.
First Year Level.

ECO 2 Introduction to Microeconomics 3 sem. hrs.
The role of prices in the allocation of economic resources; market structures, and the distribution of income will be analyzed with specific emphasis given to the individual and the firm in their economic environment.
First Year Level.

ECO 3 Introduction to Macroeconomics 3 sem. hrs.
The relationship between national income, the level of employment, the monetary system, and the foreign trade sector will be analyzed from a policy maker's viewpoint. (To be offered in the Spring of 1971.)
First Year Level.

***ECO 4 Topics in Contemporary Economics** 3 sem. hrs.
Independent studies on specific economic topics based on student interest.
Second Year Level.
Prerequisite: ECO 2, 3.

ECO 50 Economic Development for Minority Groups 3 sem. hrs.
This seminar will aim at the analysis and development of economic policies for low-income groups.
First Year Level.
Prerequisite: ECO 1 or permission of instructor.

ELECTRONICS

ETR 53 Introduction to Electronic Fundamentals 6 sem. hrs.
An introductory course for students having no previous knowledge of electronics who will go on to an electronic technician program or for those who wish to obtain a general background in electronics. Covers basic DC concepts and circuits, power, physical laws on electricity, inductance, capacitance and alternating current fundamentals.
First Year Level.
Prerequisite: Concurrent with MTH 82, or equivalent.

ETR 55 Semi-Conductors, Transistors and Vacuum Tubes 3 sem. hrs.
An extensive examination of the principles and application of semi-conductors, basic analysis, theory of solids and valance rings, Firme level and quantum analysis. These in turn will be applied to transistors and all other solid-state devices. Vacuum tubes will be examined in the same manner consistent with the state of the art techniques.
First Year Level.
Prerequisite: ETR 53, Concurrent with MTH 82, or equivalent.

ETR 57 Electronic Circuit and Systems 7 sem. hrs.
This course provides an extensive examination of electronic circuits and systems, basic and advanced network analysis, alternating current, resonance and power transfer. Most of the course is in lab sessions. Course is required in the electronics program. (May be offered in the Fall of 1970.)
First Year Level.
Prerequisite: ETR 53, Concurrent with MTH 82, or equivalent.

***ETR 61 Advanced Circuits and Systems** 8 sem. hrs.
Advanced techniques which will be weighted toward the student's chosen specialized course.
Second Year Level.
Prerequisite: ETR 57, MTH 83.

***ETR 63 Specialized Course — Microwave** 6 sem. hrs.
The course deals with the microwave spectrum generally, and will give opportunity for study in micro-wave communications, radar, telemetry, UHF amplifiers, transmission lines, amplifiers, magnatrons, klystrons, and radio-wave propagation.
Second Year Level.
Prerequisite: ETR 61, MTH 83.

ETR 65 Electricity — For Automotive Service Station Attendant 2 sem. hrs.
A very basic study in class and lab. of the ignition system, cranking system, charging system, and electrical circuits.

***ETR 66 Specialized Course — Pulse-Circuits** 4 sem. hrs.
Study of wave-shaping, linear and non-linear amplifiers, pulse amplifiers, transit-time analysis. Application of pulse circuits will be weighted toward the major specailized course.
Second Year Level.
Prerequisite: ETR 61, MTH 83.

***ETR 67 Specialized Course — Industrial Implementation** 6 sem. hrs.
Course covers measurement techniques, testing, all contemporary methods of sensing, visual display devices and oscillograph read-outs, and latest industry techniques in the area of electronic quality control.
Second Year Level.
Prerequisite: ETR 61, MTH 83.

ETR 68 Electricity I — For Automotive Technology 4 sem. hrs.
An indepth study in class and lab of basic electronic circuits, design, diagnostic and repair of all types of ignition systems.

ETR 69 Electricity II — For Automotive Technology 5 sem. hrs.
An advanced study in class and lab of the theory, design, and repair of the cranking system, charging system and electro-mechanical accessories.

ETR 70 Air Conditioning Service (Automotive) 2 sem. hrs.
Operation, maintenance, trouble shooting and repair of automotive air conditioning units.

ETR 71 Electricity For Automotive Mechanics 2 sem. hrs.
A general study in class and labs, of A.C., and D.C. electrical circuits — the cranking and charging systems, to enable the mechanic to trouble shoot and repair.

ENGINEERING

ENG 2 Engineering Graphics 3 sem. hrs.
Freehand technical sketching and instrument working drawings. Principles of projection will be reviewed and basic descriptive geometry studied in its application to solving engineering space problems. (Same as Mathematics 2.)
First Year Level.
Prerequisite: DFT 51 or equivalent.

ENG 14 Engineering Mechanics 3 sem. hrs.
Vector algebra, calculus, equilibrium, kinematics, momentum, energy concepts and equivalent force systems.
Second Year Level.
Prerequisite: PHY 10, MTH 31.

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

ENG 21 Elementary Surveying 3 sem. hrs.
Course includes measurement of horizontal distances, use of surveying instruments, angle measurements, traverse surveys and computations, topographics, government land, and construction surveys.
Second Year Level.
Prerequisite: MTH 2, 81.

ENG 25 Engineering Drawing 3 sem. hrs.
Preparation of detail and assembly drawings using standard shop and drafting room practices. Fundamental principles of orthographic projection, sectional views, auxiliary views, graphs, intersection and developments, dimensioning and tolerances will be reviewed.
First Year Level.

FIRE SCIENCE

FSC 51 Introduction to Public Safety 3 sem. hrs.
A study of the history and development of public safety systems and basic information about the field of public safety. (May be offered in the Fall of 1970.)
First Year Level.

FSC 52 Fire Protection 3 sem. hrs.
Basic information related to fire protection is reviewed. (May be offered in the Fall of 1970.)
First Year Level.

FSC 53 Fire Suppression 3 sem. hrs.

A development of understanding of techniques of suppressing fires. (May be offered in the Fall of 1970.)
First Year Level.

FSC 54 Fire Prevention 3 sem. hrs.
Basic material deals with fire prevention codes and their application. (May be offered in the Fall of 1970.)
First Year Level.

FSC 60 Fire Fighting Tactics and Strategy 3 sem. hrs.
The basic theory and practice of fire fighting. (May be offered in the Fall of 1970.)
Second Year Level.

FSC 61-62 Hazardous Materials 3-3 sem. hrs.
Course goes into the impact of modern technology on fire fighting. (May be offered in the Fall of 1970.)
Second Year Level.
Prerequisite: CHM 1, 2, or equivalent, or permission of instructor.

FSC 63 Building Construction 3 sem. hrs.
Building codes and their application are studied. Also, the hazards and problems of various types of building construction. (May be offered in the Fall of 1970.)
Second Year Level.

FSC 64 Fire Protection Systems 3 sem. hrs.
Basic information as to the development, installation, maintenance and operation of fire protection systems. (May be offered in the Fall of 1970.)
Second Year Level.

FSC 65 Equipment Operation and Maintenance 3 sem. hrs.
The theory and practice of operating equipment related to fire fighting. (May be offered in the Fall of 1970.)
First or Second Year Level.

FSC 66 Rescue Practices and First Aid 2 sem. hrs.
Basic training in handling emergency situations. (May be offered in the Fall of 1970.)
First or Second Year Level.

FSC 70 Topics in Fire Science 1 to 4 sem hrs.
Special topics are selected according to the needs of students requiring material not covered in regular listings. (May be offered in the Fall of 1970.)
Variable Level.

FSC 71 Public Safety Laws 3 sem hrs.
Laws relating to the public safety profession are studied. (May be offered in the Fall of 1970.)
Second Year Level.

FRENCH

FRE 1-2 Elementary French 4-4 sem. hrs.
An oral approach to French taught primarily through conversation with reading and writing introduced only after listening

and speaking skills have been acquired. Only French will be used.

First Year Level.

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

A review of basic French skills will be supplemented by regular assignment of compositions in French and a variety of readings. As in the introductory course, only French will be used. Second Year Level.

Prerequisite: FRE 1-2.

FRE 3R Intensive Review and Intermediate French 3 sem. hrs.

Students who have previously studied French and wish a refresher will find in this course an intensive review of basic skills and new materials suitable to their needs. Meets five days weekly.

Second Year Level.

Prerequisite: FRE 1-2 or special permission of instructor.

FRE 25-26 Composition and Conversation 3-3 sem. hrs.

Students having some fluency in French will have an opportunity to develop conversational skills and writing ability. Both creative and analytic papers will be written to illustrate different styles and preparation of term papers.

Second Year Level.

Prerequisite: FRE 4.

FRE 48-49 Intensive French 4-4 sem. hrs.

Planned for students having a background in any Romance language, this course will permit completion of the equivalent of two years of college French in one year. Literature will be emphasized along with intensive practice in conversation, composition and reading.

Second Year Level.

Prerequisite: Permission of instructor.

FRE 50 Contemporary France and its Relation to the World 3 sem. hrs.

France in the world today, its influence, and influences on it by other countries are examined through studies in politics, economics, literature, arts, religion and philosophy. Class in English. (May be offered in the Fall of 1970.)

First Year Level.

FRE 121 Conversational French

Practice in speaking French, emphasizing current usage and promoting facility in the expression of ideas.

Non-Credit.

Prerequisite: FRE 4 or approval of instructor.



GENERAL BUSINESS

BUS 1 Principles of Accounting I 3 sem. hrs.

This course will provide business administration students with the basic concepts and uses of accounting, and accounting majors with a broad foundation for advanced study. Topics

include basic concepts and method, income measurement and valuation problems.

First Year Level.

BUS 2 Principles of Accounting II 3 sem. hrs.

Continuation of Principles of Accounting I. Topics include income measurement and valuation problems, financial reporting, cost accumulation, cost control and financial planning. (To be offered in the Spring of 1971.)

First Year Level.

Prerequisite: BUS 1.

BUS 5 Statistical Methods in Economics and Business I 3 sem. hrs.

Students develop an understanding of statistical techniques and their applications for use in economic and business decision making.

Second Year Level.

Prerequisite: MTH 20.

BUS 6 Statistical Methods in Economics and Business II 3 sem. hrs.

A continuation of Statistical Methods in Economics and Business I.

Second Year Level.

BUS 10 Business Law I 3 sem. hrs.

Nature and sources of business law are studied, such as judicial system, contracts, sales and agency law.

Second Year Level.

BUS 50 Introduction to Business 3 sem. hrs.

A survey of fundamental characteristics and functions of modern business involving business principles, marketing, record keeping and risks, as well as a historical review of business development, including the viewpoint of various ethnic groups. (Offered both semesters.)

First Year Level.

BUS 51 Mathematics of Business 3 sem. hrs.

Designed to develop skills by solving problems involving the application of basic mathematical procedures to business situations. Includes percentage formula application, mark-up, statement analysis, and simple and compound interest. (Offered both semesters.)

First Year Level.

BUS 54 Intermediate Accounting I 3 sem. hrs.

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

Second Year Level.

Prerequisite: BUS 1, 2.

BUS 55 Intermediate Accounting II 3 sem. hrs.

Accounting theory and practice applicable to corporate net worth accounts, investments, reserves and income. This course

is for those who plan to specialize in accounting. (To be offered in the Spring of 1971.)

Second Year Level.

Prerequisite: BUS 54.

BUS 56 Cost Accounting **3 sem. hrs.**

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

Second Year Level.

Prerequisite: BUS 1, 2.

BUS 57 Tax Accounting **3 sem. hrs.**

Course includes all aspects of federal income tax as it concerns individuals. (Offered both semesters.)

Second Year Level.

Prerequisite: BUS 1, 2.

***BUS 58 Business Finance** **3 sem. hrs.**

A basic course dealing with the methods of securing and managing fixed and working capital funds of individual business units. Special problems encountered by minority enterprises in obtaining funds will be highlighted.

Second Year Level.

BUS 59 Business Communications **3 sem. hrs.**

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

First or Second Year Level.

BUS 60 Business Law II **3 sem. hrs.**

This course is designed to emphasize general principles which are followed in business and to provide training in the application of these principles to typical business situations. Subjects include contracts, agency and employment, commercial papers and personal property. (To be offered in the Spring of 1971.)

Second Year Level.

BUS 63 Payroll Accounting **2 sem. hrs.**

Detailed study and work practice in payroll systems. (To be offered both semesters.)

Second Year Level.

Prerequisite: BUS 1, 2.

BUS 64 Accounting for Government Agencies **3 sem. hrs.**

Concepts and procedures of fund accounting, budgeting and financial control. (To be offered in the Spring of 1971.)

Second Year Level.

Prerequisite: BUS 1, 2.

BUS 65 Personal Finance **3 sem. hrs.**

Study of material which will enable individuals to make wise decisions regarding personal and family affairs. Includes banking, taxes, insurance, home ownership and other concerns of consumer financial education. (To be offered both semesters.) (Same as Home Economics 65.)

First or Second Year Level.

BUS 66 Cooperative Accounting Training **3 sem. hrs.**

A supervised cooperative work program is provided for students in an accounting occupation for an average of 15 hours per week. (To be offered in the Spring of 1971.)

Second Year Level.

Prerequisite: Accounting core.

BUS 67 Public Administration **3 sem. hrs.**

A study of management and administration principles and practices found in public agencies.

Second Year Level.

Prerequisite: BUS 1, 2.



GERMAN

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

Simple conversations, reading and writing of short compositions will be used to introduce the beginner to the German language. Readings and audio-visual materials to be selected for their revelation of the life and culture of German speaking countries. Qualified students may register for GER 2. A language laboratory will be used.

First Year Level.

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

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

Intensive reading, small group discussions, frequent writing assignments, and language laboratory assignments will be combined with individualized instruction to develop a deeper understanding of the German language and culture.

First or Second Year Level.

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

GER 5-6 Conversational German **2-2 sem. hrs.**

Extensive and intensive oral use of German to develop a rich vocabulary and fluency. Audio-visual materials, plays, songs, short stories and situational dialogues will be employed.

Second Year Level.

Prerequisite: Two years college level German, four years high school German or equivalent. GER 5 is not a prerequisite for GER 6.



HISTORY

HIS 1-2 Introduction to Western Civilization **3-3 sem. hrs.**

Surveys the historic development of Western man, going through the prehistoric age, ancient Greece, Rome, early Middle Ages, Renaissance to the 20th century.

First or Second Year Level.

HIS 3-4 History of the United States **3-3 sem. hrs.**

Review of history from Jamestown to the present, including the founding and development of American democracy, minority participation in making of the country, and the role of the U.S. in world affairs.

First Year Level.



HIS 5 History of Arizona 3 sem. hrs.

The course moves from the pre-Spanish period, through the Spanish conquest, Arizona becoming a part of independent Mexico to its present statehood. Stress is on intercultural activities.

First or Second Year Level.

HIS 7 Papago History and Culture 3 sem. hrs.

(Same as Behavioral Sciences 7.)

HIS 8 Independent Studies in History 2 to 4 sem. hrs.

Independent history studies or projects arranged by the instructor.

Second Year Level.

Prerequisite: Permission from instructor.

HIS 9 History and Culture of the Mexican-American in the Southwest 3 sem. hrs.

Who is the Mexican-American? What is his cultural heritage, and what has happened to it in the United States? (Same as Behavioral Sciences 9.)

First Year Level.

HIS 12 Afro-American History and Peoples 3 sem. hrs.

(Same as Behavioral Sciences 12.)

***HIS 13 History and Peoples of Africa 3 sem. hrs.**

A survey of history, races, languages and cultures of Africa, south of the Sahara, with special emphasis on changes currently taking place. (Same as Behavioral Sciences 13.)

First or Second Year Level.

HIS 14 History and Peoples of Latin America 3 sem. hrs.

The history of Latin America from the pre-Columbian period to the present with emphasis on the evolution of nationalism through the struggles for economic, cultural, political and social freedoms. (Same as Behavioral Sciences 14.)

First or Second Year Level.

***HIS 15 History and Peoples of Asia 3 sem. hrs.**

The development of Asian civilization from its origin to the present, and the cultural importance of Asia to us. (Same as Behavioral Sciences 15.)

First or Second Year Level.

HIS 16-17 History of Mexico 3-3 sem. hrs.

The student moves from the pre-Columbian era, through the Spanish conquest, a century of political and social upheaval, to the nation of social and economic stability.

First or Second Year Level.

HIS 49 Mexican-American Culture and Thought 3 sem. hrs.

(Same as Philosophy 49.)



HOME ECONOMICS

HEC 2 Foods Study I 3 sem. hrs.

Basic principles related to the selection, care and preparation of foods. (\$15 fee.)

First Year Level.

HEC 3 Foods Study II 3 sem. hrs.

Continuation of HEC 2. Basic principles related to the selection, care and preparation of foods. (\$15 fee.) (To be offered in the Spring of 1971.)

First Year Level.

HEC 5 Clothing Construction 3 sem. hrs.

Basic construction of simple garments using commercial patterns and the fundamental principles of dressmaking; textile study; selection and care of fabrics. (\$2 fee.) (Offered both semesters.)

First and Second Year Level.

HEC 6 Home Management 2 sem. hrs.

Management of family and individual resources, with special emphasis on decision making. (To be offered in the Spring of 1971.)

First and Second Year Level.

HEC 7 Human Development and Relations 3 sem. hrs.

An interdisciplinary and intercultural approach to human development and interpersonal relationships throughout life.

First and Second Year Level.

HEC 9 The Home Economics Profession 3 sem. hrs.

A history of the home economics profession, its purposes, problems and trends. Professional opportunities in the field will be explored.

First Year Level.

HEC 12 Nutrition 2 sem. hrs.

The principles of human nutrition and its relationship to diet and health in various cultural groups.

HEC 15 Advanced Clothing Construction 3 sem. hrs.

This course is a continuation of HEC 5 with emphasis on advanced construction techniques, select fabrics, pattern alterations and fitting. (\$2 fee.)

First or Second Year Level.

Prerequisite: HEC 5 or permission of instructor.

HEC 17 Child Development 3 sem. hrs.

Study of the growth, development and acculturation of the child from conception through early childhood. (Offered both semesters.)

First and Second Year Level.

HEC 22 Family Meal Management 3 sem. hrs.

Planning, preparing and serving family meals with special emphasis on cultural patterns and the management of resources. (\$15 fee.)

HEC 25 Home Furnishings 3 sem. hrs.

Study of interior design both as a functional environment and a setting which exerts social, aesthetic, economic and psychological effects on people. (To be offered in the Spring of 1971.)

First and Second Year Level.

HEC 27 Education for Marriage 2 sem. hrs.

A study of the various factors and philosophies involved in the relationships between man and woman before and after marriage.

HEC 32 Institutional Meal Management 3 sem. hrs.

Quality food preparation, quantity food service, and institutional equipment, with special emphasis on management of time and labor. (\$3 fee.)

Prerequisite: HEC 3, 12.

HEC 35 Costume Selection 2 sem. hrs.

The principles of color and design in relationship to clothing selection, trends in fashion, personal appearance, consumer problems in buying, and cultural and social influences.

HEC 42 Nutrition in Growth and Development 2 sem. hrs.

Nutrition in prenatal, infant, preschool and early childhood, later childhood and adolescence.

Prerequisite: HEC 2.

HEC 45 Textiles 3 sem. hrs.

The study of fibers, yarn, fabric construction and finishes — with emphasis on the relationship of these to the selection, use and care of fabrics. (\$3 fee.)

HEC 65 Personal Finance 3 sem. hrs.

(Same as General Business 65.)

**HUMANITIES****HUM 1 Humanities Workshop/Learning Team 1 sem. hr.**

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

First Year Level.

HUM 10 Humanities 4 sem. hrs.

An introductory course which explores man's expressions in art, music, religion, philosophy, literature, science and technology. Small groupings will allow students the freedom to select areas of study. Mexican, Indian, Black and Oriental cultures will be included. Students will participate in a workshop as part of this course.

First Year Level.

HUM 11 Humanities 4 sem. hrs.

This course will explore an area of humanities in depth, with students selecting the area. As an example, those choosing Existentialism can read a range of thought from Greek philosophy to Zen Buddhism, and explore the theme of alienation in painting, music and literature. Students will participate in a workshop as part of this course. (To be offered in the Spring of 1971.)

First Year Level.

HUM 30 Independent Studies in Humanities 3 sem. hrs.

Study areas to be arranged with instructor and staff.

First or Second Year Level.

HUM 31 Special Studies in Humanities and Literature 3 sem. hrs.

Course changes every semester according to student demands. Possible areas of study include science fiction, primitive art, divination, Zen meditation, Haiku, Gandhi and non-violence, mysticism, applications of Eastern thought for the Western world.

First or Second Year Level.

HUM 54 Music and Art of the Southwest 1 sem. hr.

Development of awareness and appreciation of the music and art of Mexican-American and American Indian groups in the Southwest. Material studied will include works typical of such Indian tribes as the Papago, Yaqui, Navajo, Hopi and Pima. (Same as MUS 54.)

First Year Level or Non-Credit.

**LAW ENFORCEMENT*****LEN 71 Patrol Procedures 2 sem. hrs.**

Patrol studied as one of the primary police operations; conspicuous presence as a means of suppressing crime and preserving peace; organization and functions of police patrol; methods, techniques and responsibility in patrol operations; use of special equipment; application of laws of arrest, search and seizure in police patrol.

Second Year Level.

***LEN 72 Police Identification-Basic Criminalistics 3 sem. hrs.**

Involves fundamental procedures in scientific identification of evidence; recording of a crime scene; collection and preservation of evidence; methods used in a police science laboratory such as fingerprinting, ballistics, documents, photography; analysis and interpretation of physical evidence.

Second Year Level.

LEN 100 Introduction to Law Enforcement — Its Organization 3 sem. hrs.

An examination of the role of the law enforcement officer in his community. The history of law enforcement agencies will be reviewed, along with police functions and practices. Career opportunities, especially as related to local law enforcement departments, will be considered. (Offered both semesters.)

First Year Level.

LEN 102 Criminal Law and Administration of Justice 3 sem. hrs.

Study of criminal law, its application and enforcement; Arizona statutory and case criminal law affecting enforcement; study of U.S. Supreme Court decisions involving Constitutional rights in criminal matters; the laws of arrest, search and seizure; functions and procedures of agencies and officials involved in administration of criminal justice. (Offered both semesters.)

First Year Level.

LEN 103 Criminal Evidence and Court Procedures 3 sem. hrs.

A study of evidence in criminal prosecutions; rules governing

admissibility of evidence as relating to the law enforcement officer; federal exclusionary rule and its application to illegal evidence; practical application of Constitutional guarantees on confessions and search and seizure; criminal court procedures; the law enforcement officer as a court witness. (May be offered in the Spring of 1971.)

Second Year Level.

LEN 104 Criminal Investigation and Report

Preparation

3 sem. hrs.

Introduction to fundamentals of modern criminal investigation; procedures and skills in search and investigation; conduct at crime scene; collection and preservation of evidence; developing sources of information; preparation of cases for court prosecution; report writing requirements for administration and court use. (Offered both semesters.)

First Year Level.

LEN 106 Police Traffic Functions-Vehicle Code

3 sem. hrs.

Traffic law enforcement and the policeman's role in overseeing the safe and efficient movement of vehicles and pedestrians. An introduction to the fundamentals of accident investigation and reporting, traffic court procedures and public education for traffic safety against a background of Arizona law. (May be offered both semesters.)

First Year Level.

LEN 108 Police Community and Human Relations

3 sem. hrs.

The police officer's role in getting and maintaining public support will be reviewed. Also the recognition and understanding of community problems; community action programs; methods of coping with crisis situations; ethnic and minority cultures, backgrounds and neighborhoods; and analysis of police operations in relation to minority environments and cultures. (May be offered both semesters.)

Second Year Level.

***LEN 109 Juvenile Procedures**

2 sem. hrs.

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

Second Year Level.



LIFE SCIENCES

LSC 1-2 Ecology

3 or 4 sem. hrs. per sem.

The relationships of living things, plant and animal, are the key to a productive, healthy and attractive environment. This course is concerned with those relationships as they are affected by numbers and kinds of living things and will stress the life forms of the southwest, using them as examples of more universal concepts. Three-hour lecture with three-hour lab (1 unit) optional. (Transfer ability based on workshop credit.)

First or Second Year Level.

Prerequisite: a year of biology or permission of instructor.

LSC 5-6 Organismal Biology

4-4 sem. hrs.

Biology majors study plants and animals at the organism level of organization. (To be offered in the Spring of 1971.)

First Year Level.

Prerequisite: CHM 3 and concurrent enrollment in CHM 4.

***LSC 7-8 Microbiology**

4 sem. hrs.

Emphasis is placed, during the first semester, on characteristics of microbes and the influences both of microbes on man and his environment and of man on the microbial environment. Emphasis in the second semester is toward a medical orientation dealing with infection and immunity by a variety of microbial agents on a variety of hosts.

First Year Level.

LSC 10 General Genetics

4 sem. hrs.

This course introduces the student planning to major in biology to the basic principles and concepts of genetics. Laboratory sections meet three hours each week. (May be offered in the Spring of 1971, if enrollment justifies.)

Second Year Level.

Prerequisite: LSC 5-6, CHM 3-4, 40 and concurrent enrollment in CHM 41.

LSC 20-21 Human Anatomy and Physiology

4-4 sem. hrs.

Designed for health occupations, physical education majors and anyone interested in knowing about the structures and functions of the human body. Emphasis is on the skeletal and muscular systems as well as circulatory, nervous, respiratory, digestive, urinary, reproductive and endocrine systems. Laboratory work, field trips, community involvement and small group discussions give practical awareness of subject.

First and Second Year Level.

LSC 52 Special Problems in Biology

2 sem. hrs.

A different biological topic, of interest to the general public, will be offered each semester. Topics will include human genetics, desert ecology, desert plants, desert animals, and the biology of gardening. (To be offered evenings both semesters.)

General Interest Course.

LSC 54 Earth, Environment and Man

3 sem. hrs.

An interdisciplinary focus on the question of survival, for mankind and other life forms, on this planet. (Same as Behavioral Sciences 54 and Earth Sciences 54.)

First or Second Year Level.

LSC 56 Independent Studies

1 to 4 sem. hrs.

Subject matters and approaches will vary with student's interests and reasons for enrolling. The range will be from exploratory students wanting to gain insights into biology to honors biology majors wishing to do advanced work.

First or Second Year Level.

LSC 121 Desert Natural History

This course is designed to show the exciting relationships among living things of the Arizona-Sonoran desert. Studies will cover past events which have influenced the development of

the present desert environment, and explore future possibilities should important balances in nature be disturbed. (Six to ten week course.)
Non-Credit.

LITERATURE

LIT 20 Survey of English Literature I 3 sem. hrs.

A survey of English literature from the Anglo Saxon period to the 18th Century. Several major authors will be studied in depth. Second Year Level.

LIT 21 Survey of English Literature II 3 sem. hrs.

A survey of English literature from the 19th Century to the present. Several major authors will be studied in depth. Second Year Level.

LIT 25 Survey of American Literature I 3 sem. hrs.

A survey of American literature from Puritanism to the Civil War period. Some major authors will be studied in depth. Second Year Level.

LIT 26 Survey of American Literature II 3 sem. hrs.

A survey of American literature from the Civil War period to the present. Some major authors will be studied in depth. Second Year Level.

LIT 30 Afro-American Literature 3 sem. hrs.

A survey of Afro-American Literature and its historical background. Emphasis will be on current writers. First or Second Year Level.

LIT 40 Introduction to Literature 3 sem. hrs.

An exploration into the worlds of fiction, drama and poetry from the classics to science fiction. Much of the class time will be spent on what is happening in literature today. First or Second Year Level.

LIT 41-42 Introduction to World Literature 3-3 sem. hrs.

Works of literature from ancient to modern times will be read and discussed. Several works, to be selected by the students will be examined in detail. (May be offered in the Fall of 1970.) First or Second Year Level.

LIT 65 Poetry for Pleasure 3 sem. hrs.

Exploration of the pleasure of writing, reading and discussing poetry. First or Second Year Level.

LIT 104 Introduction to Spanish Literature I 3 sem. hrs.

(Same as Spanish 104.)

LIT 105 Introduction to Spanish Literature II 3 sem. hrs.

(Same as Spanish 105.)

LIT 117 Mexican-American Literature 3 sem. hrs.

(Same as Spanish 117.)

LIT 118 Mexican-American Literature 3 sem. hrs. (In Translation)

(Same as Spanish 118.)

LIT 120 Novel of the Mexican Revolution 2 sem. hrs.

(Same as Spanish 120.)

MANAGEMENT

MAN 1 Marketing 3 sem. hrs.

The basic principles and methods involved in the movement of goods and services from producer to consumer. Functions of market establishments or institutions reviewed. (Offered both semesters.)

Second Year Level.

MAN 50 Salesmanship 3 sem. hrs.

Study of basic principles and techniques of selling and their practical application; types of customers, products, information and its presentation, determination of customer's wants and needs, meeting customer objections, and the opportunities in selling. (Offered both semesters.)

First Year Level.

MAN 51 Merchandising 3 sem. hrs.

The organization and operation of a retail store, including buying and merchandising, sales promotion and control. (To be offered in the Spring of 1971.)

Second Year Level.

MAN 52 Small Business Management 3 sem. hrs.

A study of the different types of business organization, the advantages and disadvantages of each; business operations including record keeping, employe and community relations. Special attention will be given to minority group concerns. (To be offered in the Spring of 1971.)

First Year Level.

MAN 53 Advertising 3 sem. hrs.

Designed to acquaint the student with all phases of sales promotion.

Second Year Level.

MAN 54 Supervision of Personnel 3 sem. hrs.

How to hire, teach and supervise employes from all ethnic groups and to develop their special skills to form a good business team.

Second Year Level.

MAN 55 Business Organization and Management 3 sem. hrs.

A study of the role of business and management in a multi-cultural society; an examination of different types of organizations; the functions of the executive at all levels and of the responsibility of the executive to owners, employes and the community. (May be offered in the Fall of 1970.)

Second Year Level.

Prerequisite: BUS 50, Economics of Enterprise.



MAN 56 Advertising Layout and Design 3 sem. hrs.
Workshop in present day creative advertising. Practices in all current media. Actual practice, criticism, and field trips. (To be offered in the Spring of 1971.)
Second Year Level.
Prerequisite: MAN 53.

MAN 57 Advanced Advertising 3 sem. hrs.
Management of the advertising function in marketing. Initial analysis of managerial decisions regarding advertising as a problem solving variable in marketing operations. (To be offered in the Spring of 1971.)
Second Year Level.
Prerequisite: MAN 53, 56.

MAN 58 Human Relations in Business and Industry 3 sem. hrs.
Human factors in the field of business, getting along with colleagues and customers. Emphasis will be on improving behavioral patterns and special attention will be paid to minority group attitudes and customs. (Same as Behavioral Sciences 58.)
First Year Level.

MAN 60 Cooperative Mid-Management Training I 3 sem. hrs.
A supervised cooperative work program is provided for sophomore students in which they are employed in an approved Distributive Education occupation for an average minimum of 15 hours per week. (May be offered in the Fall of 1970.)
Second Year Level.

MAN 61 Cooperative Mid-Management Training II 3 sem. hrs.
A continuation of Cooperative Mid-Management Training I.
Second Year Level.

MAN 63 Management and Leadership Trends I 3 sem. hrs.
Analysis of current trends in management, marketing, merchandising, and sales promotion by case studies, practical student projects and discussions. (May be offered in the Fall of 1970.)
Second Year Level.
Prerequisite: Achieved sophomore level.

MAN 64 Management and Leadership Trends II 3 sem. hrs.
A continuation of Management and Leadership Trends I.
Second Year Level.



MATHEMATICS

MTH 2 Engineering Graphics 3 sem. hrs.
(Same as Engineering 2.)

MTH 11 Intermediate Algebra 3 sem. hrs.
A thorough grounding in the basic concepts of elementary algebra that includes coordinate systems, polynomials, quadratics, real and complex numbers, relations of numbers, slide rule and systems of equations. Valuable to biology, physical

sciences and social sciences. A technology and computer related course.

First Year Level.

Prerequisite: MTH 70 or equivalent.

MTH 20 College Algebra 3 sem. hrs.

A review of intermediate algebra. Covers binomial theorem, combinations, complex numbers, conics (De Moivre theorem), determinants, exponential functions, inequalities, logarithmic functions, mathematical induction, matrices, permutations, probability progressions, quadratic and higher degree equations, and theory of equations.

First Year Level.

Prerequisite: MTH 11.

MTH 24 Trigonometry 3 sem. hrs.

Applications of trigonometry to physics, drawing and analytic geometry-calculus and the use of logarithms in trigonometry. Should be taken concurrently with or after College Algebra (MTH 20).

First Year Level.

Prerequisite: MTH 11, 71.

MTH 25-26 Math for Social Science and Business 3-3 sem. hrs.

First course covers some logic, set theory, matrices, probability and number systems. Second course covers some topics from analytic geometry and calculus.

First or Second Year Level.

Prerequisite: MTH 20.

MTH 30-31-32 Analytic Geometry/Calculus 5-5-2 sem. hrs.

Calculus will be offered as a combination course with analytic geometry or separately according to the student's needs, and may be designed for specific programs such as engineering, electronics, mathematics or social sciences. It is recommended to be taken concurrently with or before Physics 4-5, if this course is to be taken.

First or Second Year Level.

Prerequisite: MTH 20, 24.

MTH 35 Introductory Statistics 3 sem. hrs.

A study of statistical methods as applied to collecting, tabulating, analyzing, presenting and interpreting data. Includes averages and means, central limit theorem, confidence intervals, correlations, dispersions, frequency distributions, graphs, linear regression, normal curve, probability, standard deviation and tests of hypothesis.

First Year Level.

Prerequisite: MTH 11.

MTH 36 Ordinary Differential Equations 3 sem. hrs.

A study of ordinary differential equations, boundary problems, La Place transforms, numerical methods and their applications with special attention to their use in physics and engineering programs. (Offered only on request.)

Second Year Level.

Prerequisite: MTH 32.

MTH 40 Computer Science I 1-3 sem. hrs.
(Same as Computer Science 40.)

***MTH 43 Advanced Computer Science-Mathematics** 3 sem. hrs.

Fundamentals of digital computer programming in Fortran language in an advanced form with applications to problems in such areas as numerical analysis and computer solutions of polynomial equations, transcendental equations, ordinary differential equations and problems in linear algebra. (Same as Computer Science 43.)
Second Year Level.
Prerequisite: MTH 32.

MTH 60-61 Introductory Math 2-2 sem. hrs.
A course for students having little or no mathematical background, providing skills and practice in their use in daily work or living situations.
High School Level.

MTH 70 Elementary Algebra 3 sem. hrs.
This course includes material found in a high school algebra course.
High School Level.

MTH 71 Elementary Geometry 3 sem. hrs.
Course includes material found in a high school geometry course. It is recommended that elementary algebra be taken before this course.
High School Level.

MTH 80 Technical Mathematics I 3 sem. hrs.
Practical mathematics for work in the industrial-technical field; geometry, algebra, measuring instruments, trigonometry through the solution of the oblique triangle, slide rule with application to shop problems. (Same as Machine Technology 80.)
First Year Level.

MTH 81 Technical Mathematics II 3 sem. hrs.
Course closely parallels mathematics that is generally taken in the first year college level. Analytic geometry includes study of both plane and solid figures and calculus. A good background in mathematics, particularly in algebra and trigonometry is needed. (Same as Machine Technology 81.)
demand.)
First Year Level.
Prerequisite: MTH 80.

MTH 82 Electronics Mathematics I 3 sem. hrs.
Practical mathematics for work in the industrial-technical field; geometry, algebra, measuring instruments, trigonometry through the solution of the oblique triangle, slide rule with application to shop problems, Kirchoff's laws, vectors and analysis of AC circuits.
First Year Level.

MTH 83 Electronics Mathematics II 3 sem. hrs.
Course closely parallels mathematics that is generally taken in the first year college level. Analytic geometry includes study of both plane and solid figures and calculus. A good background in mathematics, particularly in algebra and trigonometry is needed.
First Year Level.
Prerequisite: MTH 82.

MTH 84 Math I For Automotive Technology 3 sem. hrs.
This course is designed to cover the math required by the automotive technologist. It includes and is greater in scope than math 60 & 61.
First Year Level.

MTH 85 Math II For Automotive Technology 3 sem. hrs.
This course is designed to cover the math required by the automotive technologist beyond the scope of MTH 84.
First Year Level.
Prerequisite: MTH 84.



MILITARY SCIENCE

MSC 1 Introduction to ROTC 2 sem. hrs.
Reviews the history, organization and mission of ROTC, the military, and the civilian obligation of the citizen. There is an introduction to weapons and the leadership laboratory.
First Year Level.

MSC 2 Defense Establishment in National Security 2 sem. hrs.
The history, mission and organization of the defense establishment. The role of the military in cold, limited and general warfare. Leadership laboratory included. (To be offered in the Spring of 1971.)
First Year Level.

MSC 3 American Military History 2 sem. hrs.
Principles of war and a survey of American military history are studied from Colonial times to 1966. Leadership laboratory included.
Second Year Level.

MSC 4 Military Map Reading and Tactics 2 sem. hrs.
An introduction to maps, map reading and the Lensatic compass. Also an introduction to small unit tactics. Leadership laboratory included. (To be offered in the Spring of 1971.)
Second Year Level.



MUSIC

MUS 1 Survey of Music Literature 2 sem. hrs.
Introduction to music literature with emphasis on structure, period and style. Open to music majors only.
First or Second Year Level.

MUS 3 Music Theory I 3 sem. hrs.
Study of the rhythmic, melodic and harmonial aspects of music

from the standpoint of singing, playing, writing and listening. A course required of all music major students in which any student may enroll upon passing the theory placement exam. First Year Level.
Prerequisite: Placement examination.

MUS 5 Music Theory II 4 sem. hrs.
Study of secondary seventh, altered chords, modulation, chorales; reading in all clefs; keyboard harmony. Continuation of Theory I.
Second Year Level.
Prerequisite: MUS 3.

MUS 7 Basic Conducting Techniques 2 sem. hrs.
Fundamental conducting patterns, development of skills and dexterity in choral and instrumental conducting. Designed primarily for the music major.
First or Second Year Level.
Prerequisite: Approval of instructor.

MUS 9-10 Band 1 or 2 sem. hrs. per sem.
Participation in regular band rehearsals and performances with membership determined by auditions with the director. Continued development of musical and technical skills through interpretation will be stressed for both credit and non-credit band members.
First or Second Year Level or Non-Credit.

MUS 11-12 Chorale (SATB) 1 or 2 sem. hrs. per sem.
A selected group of mixed voices, chosen by audition for interpretation of a wide variety of styles of music in frequent concerts throughout the academic year. May be taken for credit or as a non-credit elective.
First or Second Year Level or Non-Credit.

MUS 13-14 Concert Choir (SATB) 1-1 sem. hr.
The concert choir is chosen from those who wish to participate in choral music but for various reasons are not in chorale. A short audition is necessary for voice placement. Minimum of one performance per semester. Open to all qualified students.
First or Second Year Level or Non-Credit.

MUS 15-16 College Singers (SATB) 1-1 sem. hr.
A small choral ensemble chosen by audition. Repertory and performance includes best literature from all styles and periods. There will be various performances throughout the school year. Open to all qualified students in the college.
First or Second Year Level or Non-Credit.

MUS 17-18 Women's Chorus (SSA) 1-1 sem. hr.
The chorus is chosen from those who wish to participate in choral music but for various reasons are not in chorale. A short audition is necessary for voice placement and there will be a minimum of one performance per semester. Open to all qualified students in the college.
First or Second Year Level or Non-Credit.

MUS 19-20 Orchestra 1 or 2 sem. hrs. per sem.
Study and performance of standard symphonic literature. Open to all students in the college. Membership, however, is determined through an audition by the director.
First or Second Year Level or Non-Credit.

MUS 21-22 Stage Band 1-1 sem. hr.
Repertory and performance includes the best in the stage band idiom. Open to all students in the college. Membership based on auditions by the instructor.
First or Second Year Level.

MUS 23-24 Ensemble Class 1-1 sem. hr.
Opportunity is offered for various combinations of ensemble performance. Includes accompanying, brass ensemble, choral ensemble, piano ensemble, string ensemble, woodwind ensemble, percussion ensemble. Open to all students in the college on the basis of auditions by individual instructors.
First or Second Year Level.

MUS 30-31 Woodwind Instruments Class 1-1 sem. hr.
A practical course designed to give the prospective music teacher fundamental techniques for instruction in flute, oboe, clarinet, saxophone and bassoon.
First or Second Year Level.
Prerequisite: Approval of instructor.

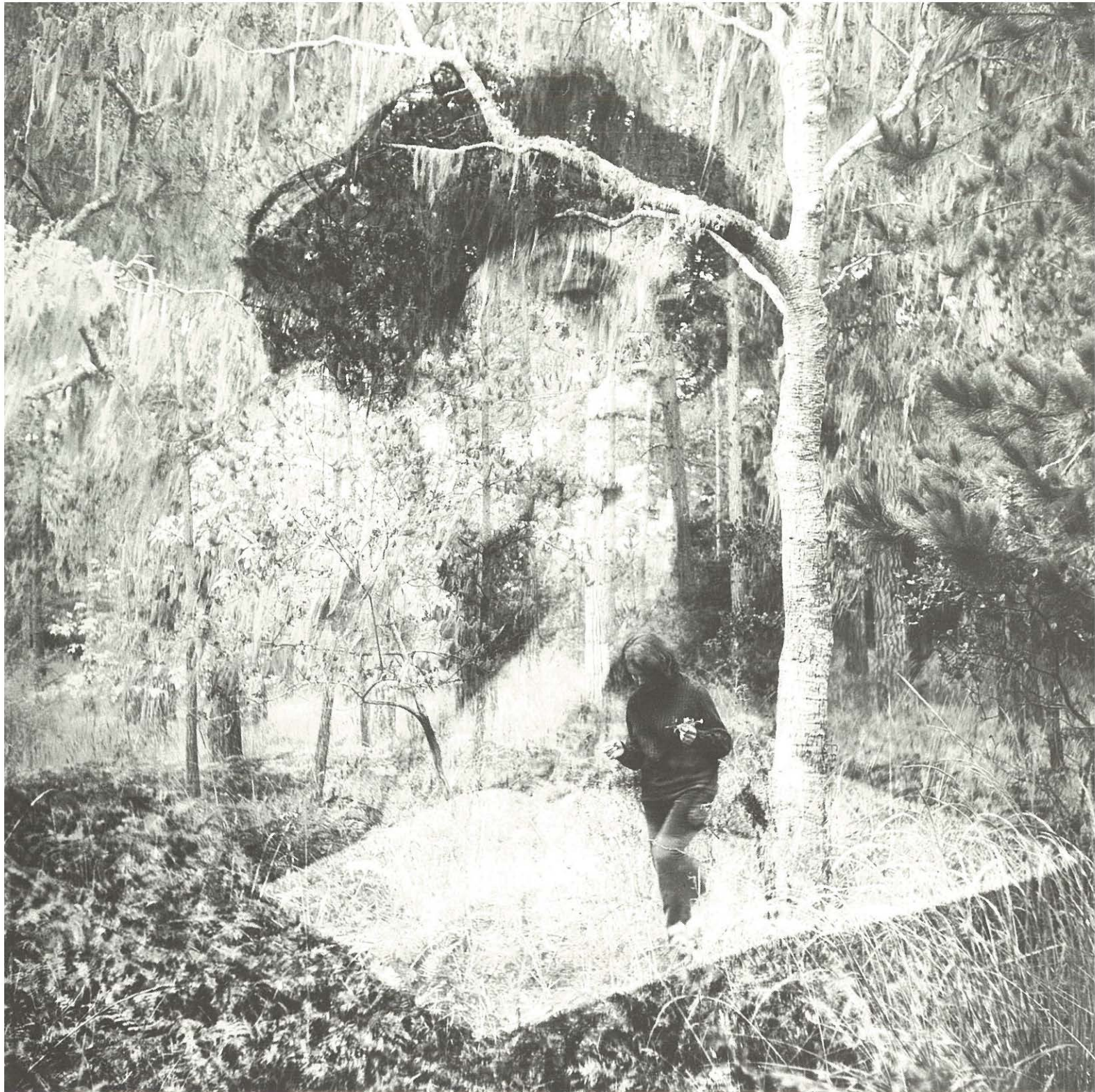
MUS 32-33 Brass Instrument Class 1-1 sem. hr.
A methods course designed to give the prospective music teacher fundamental techniques for instruction in cornet, trumpet, French horn, trombone, baritone and tuba.
First or Second Year Level.
Prerequisite: Approval of instructor.

MUS 34-35 Percussion Instruments Class 1-1 sem. hr.
A methods course providing the prospective music teacher basic skills and instruction techniques in all percussion instruments.
First or Second Year Level.
Prerequisite: Approval of instructor.

MUS 36-37 Stringed Instruments Class 1-1 sem. hr.
A basic methods course for the prospective music teacher, providing fundamental playing and instruction techniques for violin, viola, cello and bass.
First or Second Year Level.
Prerequisite: Approval of instructor.

MUS 38-39 Voice Class 1-1 sem. hr.
Beginning instruction; introduction and development of basic skills, breathing, diction, tone, rhythm, sight singing. Practical training in singing without specialization. Open to all students.
First or Second Year Level.

MUS 40-41 Piano Class 1-1 sem. hr.
An elementary course in piano playing, employing group and individual techniques. Open to all students.
First or Second Year Level.



MUS 42-43 Applied Music-Private Instruction (Individual) By arrangement

Individual private instruction in piano, voice, stringed instruments, woodwind instruments, brass instruments, percussion instruments.

First or Second Year Level.

Prerequisite: Approval of instructor.

MUS 50-51 Exploring Music (General Music) 3-3 sem. hrs.

Introduces the non-major student to music literature and stresses form and style analysis through listening. The relationship of music to cultural and socio-economic elements throughout various historical periods will be reviewed.

First or Second Year Level.

MUS 52 Fundamentals of Music 2 sem. hrs.

Course provides sufficient symbol literacy to allow the student to begin work in the field of music. For students with little or no background in music, or those who were unsuccessful in passing the theory placement exam. Open to all students.

First or Second Year Level.

MUS 54 Music and Art of the Southwest

(Same as Humanities 54.)

(All music course numbers, except 50-51 and 54, indicate a full year's study. Dual numbers are given courses which may be repeated for credit.)



NURSING

NRS 70 Nursing I 6 sem. hrs.

The role and responsibilities of the technical nurse are presented in the course. Also developed are basic knowledge and skills needed to give nursing care to the individual. Emphasis is on the physiological and psychosocial aspects of health, and on the cultural patterns of the community.

First Year Level.

Prerequisite: Permission of instructor.

NRS 72 Nursing II 7 sem. hrs.

Nursing skills and knowledges are further developed. Care is related to specific age groups. The nurses role in assisting mothers and beginning families to maintain health is emphasized. (To be offered in the Spring of 1971.)

First Year Level.

Prerequisite: NRS 70.

***NRS 80 Nursing III 10 sem. hrs.**

Changes in overall body functioning which cause specific health problems are the basis for the nursing care discussed in class, and assigned to the student in a clinical setting. Emphasis will be on increasingly complex patient care.

Second Year Level.

Prerequisite: NRS 72

***NRS 82 Nursing IV 10 sem. hrs.**

A continued emphasis on complex patient care and on the

individual's reaction to illness provides further experiences for the student with all age groups. Seminars on current trends in nursing and on legal and ethical responsibilities of the nurse prepare the student for her role after graduation.

Second Year Level.

Prerequisite: NRS 80.



OFFICE EDUCATION

OED 1 Beginning Shorthand 3 sem. hrs.

A first course in shorthand, using the Gregg method, designed to develop skills in taking simple dictation and transcribing notes. Practice in transcription will begin the first week. (Offered both semesters.)

First Year Level.

OED 2 Intermediate Shorthand 3 sem. hrs.

The object of this course is a review of Gregg shorthand through dictation practice and emphasis on speed and accuracy. (Offered both semesters.)

First Year Level.

Prerequisite: One year high school shorthand or 60 wpm at five minutes.

OED 3 Advanced Shorthand 3 sem. hrs.

Course provides more dictation and transcription practice in correspondence and literary material, minutes and reports. Emphasis will be given to mailable letters, English, spelling and punctuation. (Offered both semesters.)

Second Year Level.

Prerequisite: Two years shorthand or 90 wpm at five minutes.

OED 11 Beginning Typing 3 sem. hrs.

A beginners' course in theory and practice of touch typing. Emphasis will be on the mastery of the keyboard, speed drills and practice, arrangement of paragraphs, manuscripts and letters. Students with two or more semesters of high school typing may not take this course for credit without permission of the instructor. (Offered both semesters.)

First Year Level.

OED 12 Intermediate Typing 3 sem. hrs.

Emphasis will be on the keyboard and machine manipulation, typing techniques and mastery of basic principles. Introduction to production typing, composition at the machine, and business letters. (Offered both semesters.)

First Year Level.

Prerequisite: One year typing.

OED 13 Advanced Typing 3 sem. hrs.

Emphasis on coordinating typing skills with judgment and reasoning in solving office problems. Simulation of office situations. Review of basic typewriting principles, letter problems, tabulation problems, manuscript problems and office production typing. (Offered both semesters.)

First Year Level.

Prerequisite: Two years high school typing or 40 wpm.

OED 21 Business Machines 2 sem. hrs.

Instruction given in the operation of business machines, printing calculators, rotary calculators, key-driven calculators, and electronic calculators which are used for arithmetic computation in the modern business world. (Offered both semesters.)
First Year Level.

OED 22 Dictating and Duplicating 3 sem. hrs.

Operation and manipulation of the stencil and fluid duplicating processes. Includes study of machine transcription and filing procedure. (Offered both semesters.)
First Year Level.

OED 50 Legal Shorthand and Office Equipment 3 sem. hrs.

Designed to develop skill in writing and transcribing words and phrases commonly recurring in the spoken and written language of law. (May be offered in the Fall of 1970.)
Second Year Level.
Prerequisite: Typing and shorthand.

OED 51 Legal Terms 3 sem. hrs.

Course is designed to provide an understanding of legal terms for students interested in working in the legal field as legal technicians. (May be offered in the Spring of 1971.)
Second Year Level.
Prerequisite: Typing and shorthand.

OED 55 Medical Shorthand and Transcription 3 sem. hrs.

Develops skills in writing and transcribing words and phrases occurring in the spoken and written language of medicine. (To be offered both semesters.)
Second Year Level.
Prerequisite: Typing and shorthand.

OED 56 Medical Terms 3 sem. hrs.

This course is designed to provide an understanding of medical terms for students interested in working in the paramedical professions. Emphasis is placed on the understanding and facility in the use of medical terminology.
Second Year Level.

OED 57 Office Management and Procedures 3 sem. hrs.

Covers principles and practices in office management, office systems and routine, layout and flow of work.
Second Year Level.

OED 60 Cooperative Office Internship I 3 sem. hrs.

Course allows students to be placed in an approved training station, earn credits for satisfactory work performance, and earn wages for hours worked. The flexibility of developing individual programs for interested students in any related occupational opening is accomplished on the basis of developing a practical training program in agreement with the training station and college coordinator. (May be offered in the Fall of 1970.)
Second Year Level.
Prerequisite: Cooperative office core.

OED 61 Cooperative Office Internship II 3 sem. hrs.

A continuation of Cooperative Office Internship I.
Second Year Level.
Prerequisite: OED 60.

OED 62 Office Management and Leadership Trends I 3 sem. hrs.

Course is designed to improve the performance of secretarial students in top positions. Also a study in common secretarial duties other than dictation. Practice given through a series of projects. (May be offered in the Fall of 1970.)
Second Year Level.

OED 63 Office Management and Leadership Trends II 3 sem. hrs.

A continuation of Office Management and Leadership Trends I.
Second Year Level.
Prerequisite: OED 62.

OED 64 Records Management 2 sem. hrs.

The principles and procedures of filing and actual practice in the basic systems are covered in this course. It also deals with management aspects of establishing filing systems, transferring and disposing of records and evaluating filing efficiency. (To be offered in the Spring of 1971.)
First Year Level.



PAPAGO

PGO 50 Elementary Papago 4 sem. hrs.

This will be a conversation course with emphasis on listening and repetition. Designed for the non-Papago speaking students.
First Year Level.

PGO 51 Papago for Native Speakers 4 sem. hrs.

Class needs will be determined, due to different speaking dialects.
Second Year Level.
Prerequisite: Knowledge of Papago.



PHILOSOPHY

PHI 1 Introduction to Philosophy (The Love of Wisdom) 3 sem. hrs.

This course will introduce students to personal experiences in reflective and critical wisdom-seeking. It will also introduce students to some of those in the history of philosophy whose experiences and reflections have been socially influential. (Offered both semesters.)
First Year Level.

***PHI 10-11 A History of Philosophy 3-3 sem. hrs.**

This study will enable the student to understand philosophic inquiry, to identify some of the key issues and approaches, and to experience some concentration of study either in the writings of one or two philosophers or with a particular topic.
Second Year Study.
Prerequisite: PHI 1.



PHI 15 Art and Culture

(Same as Art 15.)

4 sem. hrs.**PHI 20 An Introduction to Logic****3 sem. hrs.**

The objective of this course is to increase the student's awareness of the requirements and processes of valid thinking, decision-making and communication. (May be offered in the Spring of 1971.)

First or Second Year Level.

Prerequisite: PHI 1.

PHI 30 Introductory Studies in Ethics and Social Philosophy**3 sem. hrs.**

This course will enable the student to increase his discernment of some of the traditional as well as present-day discussions involving the question of norms in human relations. (To be offered in the Spring of 1971.)

First or Second Year Level.

Prerequisite: PHI 1.

PHI 40 Introductory Studies in Religious Philosophy*3 sem. hrs.**

The student is introduced to some of the classic autobiographical and biographical statements of religious experience, and proceeds to a study of some significant efforts to interpret religious experience.

First or Second Year Level.

Prerequisite: PHI 1.

PHI 47 Investigations in Values:**Contemporary and Future****3 sem. hrs.**

An interdisciplinary workshop dealing with contemporary issues and thinking, including some futuristic and science-fiction literature. The field of inquiry will be international. (Same as Behavioral Sciences 47.) (To be offered in the Spring of 1971.)

First or Second Year Level.

PHI 49 Mexican-American Culture and Thought**3 sem. hrs.**

A history of ideas of the Mexican-American from Nahua and Europe to the present. Brings out the evolution of the two into present day concepts such as "Raza de Bronce" and "Aztlan." (Same as History 49 and Spanish 49.) (To be offered in the Spring.)

First or Second Year Level.

PHI 50 Questions in Philosophy**1 to 2 sem. hrs.**

Informal discussions based on reflective and life-situation concerns of students. An additional unit of credit will be assigned on the basis of directed studies.

High School, First or Second Year Level.

PHI 121 Early Chinese Views of Social Change

Through close study of the I Ching and Taoism, this course will attempt to take an unusual approach to social change. (May be offered in the Spring of 1971.)

Non-Credit.

**PHYSICAL ACTIVITIES****PAC 9-12 Physical Activities****1 sem. hr. per sem.**

Archery

Modern Dance

Badminton

Modern Social Dance

Baseball (M)

Physical Fitness

Basketball

Recreational Games

Bowling

Soccer (M)

Fencing

Softball

Field Hockey (W)

Speedball

Folklore Dances

Swimming

Football (M)

Tennis

Golf

Track & Field

Gymnastics

Trampoline

Handball (M)

Volleyball

Life Saving

Wrestling (M)

(Activities offered depend upon demand, facilities and staffing.)

First or Second Year Level.

PAC 25 Exploration in Movement**1 sem. hr.**

An experimental course designed to explore the creative expression of the individual through movement. This course will work closely with the anthropology area, drama and the cultural groups of the college. (May be offered in the Fall.)

First or Second Year Level.

PAC 27 Folklore Dances**1 sem. hr.**

Instruction in ethnic dances from many areas represented by persons in Pima County. These include Latin American, Afro-American and American Indian. (May be offered in the Fall of 1970.)

First or Second Year Level.

PAC 41 Introduction to Physical Activities**3 sem. hrs.**

Designed for prospective professionals in the field of physical education. A survey of professional opportunities and techniques used in the field.

First Year Level.

Prerequisite: Majoring in program.

PAC 42 Development of Basic Skills I-IV**1 sem. hr.**

Professional preparation for majors and minors who need to master fundamental sports skills.

First Year Level.

Prerequisite: Majoring in program.

PAC 46 Games for Elementary and Junior High Schools**3 sem. hrs.**

Introduction to purposes and the organization of games which may be utilized in the schools. Practical teaching experiences will be combined with class evaluation.

First or Second Year Level.



PAC 47 Personal and Community Health Problems 3 sem. hrs.

A survey of modern problems affecting health such as tension, drugs, pollution, alcoholism, occupational diseases, and venereal diseases.
First Year Level.

PAC 48 Educational Health Problems 3 sem. hrs.

A survey of educational health programs offered within the community schools. (To be offered in the Spring of 1971.)
First Year Level.
Prerequisite: PAC 47, recommended.

PAC 51 Cultural History of Physical Activity 1 sem. hr.

A study showing that sports are not confined to any one nation or culture and that each culture creates a sport that fits its attitude toward life. (May be offered in the Fall of 1970.)
First Year Level.

PAC 52 Survey of World Sports 1 sem. hr.

A participation in some of the ways other people use to make physical activity enjoyable. An exercise in understanding and appreciation. (May be offered in the Fall of 1970.)
First Year Level.

PAC 53 Development of the Olympics 1 sem. hr.

A study of Olympic games from ancient to modern times with particular stress on international athletic development and its impact on society. (To be offered in the Spring of 1971.)
First or Second Year Level.

***PAC 54 Structure of Sports** 1 sem. hr.

This is an opportunity to learn methods of scoring and making of rules; how officials make decisions in other cultures, showing that different people enact different rules for the same game.
First Year Level.

***PAC 56 Sports Appreciation** 1 sem. hr.

Why sports are important from a participant's and a spectator's viewpoint. How minorities have evolved sports within their culture.
Second Year Level.

PAC 59-62 Life-Long Sports Activities 1 sem. hr. per sem.

Archery	Karate
Badminton	Life Saving
Baseball (M)	Modern Dance
Basketball	Modern Social Dance
Bicycle Riding	Physical Fitness
Boating	Recreational Games
Bowling	Riflery
Fencing	Rugby (M)
Field Hockey	Slimnastics (W)
Fishing	Skiing

Folklore Dances

Football (M)

Golf

Gymnastics

Handball (M)

Hiking

Ice Hockey

Ice Skating

Judo

(Activities offered depend upon demand, facilities and staffing.)
First or Second Year Level.

Soccer (M)

Softball

Speedball

Swimming

Tennis

Track & Field

Trampoline

Volleyball

Wrestling

PAC 83 Exploring Physical Education 1 sem. hr.

Here is an opportunity to plan your own program in physical activity. Individuals assume the responsibility for planning, implementing and evaluating their own work. (May be offered in the Fall of 1970.)
First or Second Year Level.

PAC 84 Exploring Community Resources in Recreation 1 sem. hr.

Course is designed to introduce the individual to the wide range of activities available in the community. This includes field trips to get a view of such activities as mountaineering, hiking, camping and spelunking. Field trips to be taken on weekends. (To be offered in the Spring of 1971.)
First Year Level.

PAC 86 Recreation for Older Persons 1 sem. hr.

A survey of physical activity programs now being developed for elderly persons. Includes techniques in exercise. Guest speakers will be scheduled. A discussion of problems of geriatrics and available resources aimed at solving the problems. (To be offered in the Spring of 1971.)
First or Second Year Level, or Non-Credit.

PAC 88 Water Safety for Non-Swimmers 1 sem. hr.

Developing of self confidence for water activities with emphasis on water survival for non-swimmers. (May be offered in the Fall of 1970.)
First or Second Year Level, or Non-Credit.



PHYSICS

PHY 2-3 Introductory Physics 4-4 sem. hrs.

An introduction to physics through a study of the principles of mechanics, heat, sound, light, electricity and magnetism. Calculus is not required.
First Year Level.
Prerequisite: High School math through intermediate algebra.

PHY 4-5 Introductory Physics with Calculus 4-4 sem. hrs.

An introduction to physics planned for mathematics and science majors which may be taken concurrently with calculus. Basic principles of mechanics, heat, sound, light, electricity

and magnetism will be taught. Emphasis will be on problem solving.

First Year Level.

Prerequisite: High School math through trigonometry.

PHY 10 Introductory Mechanics 4 sem. hrs.

An introduction to mechanics recommended for physics majors and those wishing a strong mechanics background.

First Year Level.

Prerequisite: Concurrent with calculus.

***PHY 16 Introductory Electricity and Magnetism 4 sem. hrs.**

Basic principles of electricity and magnetism. This course is planned for prospective physics majors and those wishing a strong background in electricity and magnetism.

First Year Level.

Prerequisite: PHY 10, MTH 30-31-32.

***PHY 21 Introduction to Waves and Heat 3 sem. hrs.**

Studies in heat, sound, and light, including optics and optical instruments. Recommended for physics majors.

First Year Level.

Prerequisite: PHY 10, MTH 30-31.

***PHY 30 Introduction to Modern Physics 3 sem. hrs.**

An introduction to atomic and nuclear physics, relativity, radioactivity, quantum physics, and elementary particles.

Second Year Level.

Prerequisite: MTH 30-31, PHY 4-5 or PHY 10, 16, 21.

PHY 50 Technical Physics 3 sem. hrs.

Designed for the automotive technologist to give the student an understanding of physical principles and their application to the automotive industry. The course includes: Precision Measurements; Properties of Solids, Liquids, and Gases; Work, Energy, and Power; Force and Motion; Vectors; Basic Machines; Heat and Temperature. This course is for technical students and is not intended as a college transfer course.

Prerequisite: 1 year high school algebra or math.



POLITICAL SCIENCE

POL 1 Introduction to Political Science 3 sem. hrs.

What is a polity? What is citizenship? What is the relationship between the citizen and the polity? How do political scientists analyze such questions? Answers to the four basic questions will be explored.

First Year Level.

POL 10 American National Government and Politics 3 sem. hrs.

A survey of the institutions of American government and the evolution of our political system. Included will be a study of the Constitution and exploration of the roles of political parties, interest groups, public opinion and voting behavior. Special attention to positions of economic, ethnic, and religious minorities in American society.

First Year Level.

POL 11 American State and Local Government and Politics 3 sem. hrs.

Survey of state and local government and politics with particular emphasis on the political culture of Arizona, the state's politically relevant economic and ethnic groups, and its current political trends. (May be offered in the Fall of 1970.)

First or Second Year Level.

POL 20 Introduction to Comparative Politics 3 sem. hrs.

An examination of the basic concepts and methods of comparative political analysis and their application to the political systems of Western Europe, the Soviet Union and Eastern Europe, and the developing areas. (May be offered in the Spring of 1971.)

Second Year Level.

***POL 30 Introduction to International Relations 3 sem. hrs.**

A general examination of international relations including the elements of national power; the economic, social and psychological determinants of international political behavior; formation of foreign policy; international law; and international and regional organizations.

Second Year Level.

POL 40 Minority Groups and the Political Process 3 sem. hrs.

An investigation of the position of various minority groups in the American political system, including their general political attitudes and voting behavior, patterns of political organization, party activity, and their role in the formation of public policy. (To be offered in the Spring of 1971.)

Second Year Level.

POL 45 Constitutional Law: Civil Liberties 3 sem. hrs.

The federal court system, its jurisdiction, Congressional legislation and the power of judicial review are studied. Civil liberties in the Constitution, Bill of Rights and subsequent amendments are reviewed through reading Supreme Court decisions. (May be offered in the Spring of 1971.)

Second Year Level.

POL 49 Independent Study 2 to 4 sem. hrs.

Independent readings or special projects to be arranged with the instructor.

Second Year Level.

POL 50 Immigration Law and Practices 3 sem. hrs.

Legal and political status of immigrants from Mexico; the process of immigration, counseling for the immigrant. (May be offered in the Fall of 1970.)

First Year Level.



RADIOLOGIC (X-RAY) TECHNOLOGY

RAD 71 Introduction to Radiography 3 sem. hrs.

An introduction to x-ray technology and its applications in allied health professions. Included are definitions of the professional and legal responsibilities in the field, a history of the

technique and its terminology and demonstration and use of x-ray and film processing equipment.
First Year Level.

RAD 72 Radiographic-Photographic Chemistry and Techniques 4 sem. hrs.

Designed to help students understand the causes of x-ray image formation. An indepth study and application of radiographic techniques, the effects of film processing chemicals, cine film, photographic principles, infra-red photography, radiation chemistry, and biological effects of radiation exposure. (To be offered in the Spring of 1971.)
First Year Level.
Prerequisite: RAD 71.

RAD 73 Radiographic Positioning I 4 sem. hrs.

Demonstration and practice of routine and special radiographic positioning for visualization of the bones of the skeleton, exclusive of those of the skull. Radiographic phantoms are used to relate only the principles of exposures. Group process is used to evaluate all films. (To be offered in the Spring of 1971.)
First Year Level.
Prerequisite: RAD 71.

***RAD 81 Radiographic Positioning II** 4 sem. hrs.

Demonstration and practice of routine and special radiographic positioning for visualization of the bones of the skull and routine visceral studies. Radiographic phantoms are used to relate only principles of exposure. Group process is used to evaluate all films.
Second Year Level.
Prerequisite: RAD 73.

***RAD 82 Radiographic Physics** 4 sem. hrs.

Designed to help the students understand the function of all x-ray machine components and special accessory units. Demonstration and application of x-ray equipment. Emphasis is on radiographic principles and on methods of protection against ionizing radiations.
Second Year Level.
Prerequisite: RAD 72.

***RAD 83 Clinical Procedures I** 3 sem. hrs.

Students will apply their acquired skills of routine and emergency positioning in clinical situations under the direct supervision of the staff radiologists and/or registered radiologic technologists of affiliated hospitals.
Second Year Level.
Prerequisite: Completion of second semester courses.

***RAD 84 Radiographic Positioning III** 4 sem. hrs.

Demonstration and practice of special radiographic procedures in such specialties as contrast media studies, pediatrics and in relationships with nursing and surgical procedures.
Second Year Level.
Prerequisites: RAD 81.

RAD 85 Radiation Therapy and Nuclear Medicine 4 sem. hrs.

Use of radiation in treatment. The theory of radioactivity, nuclear isotope production and their medical applications will be introduced. Use of measuring and monitoring instruments will be demonstrated and practiced under the supervision of a radiologist or registered radiation therapist in an affiliated radiotherapy clinic.
Second Year Level.
Prerequisite: RAD 82.

***RAD 86 Clinical Procedures II** 3 sem. hrs.

A continuation of RAD 83. Designed for students to apply advanced skills in emergency and specialized radiological procedures in clinical situations under the direct supervision of staff radiologists and/or registered radiologic technologists of affiliated hospitals.
Second Year Level.
Prerequisite: RAD 83.

***RAD 87 Radiobiology** 4 sem. hrs.

Examination of the effects of radiation upon living tissue. Emphasis will be given to x-ray and gamma ray effects from diagnostic and therapeutic exposures.
Second Year Level.
Prerequisite: RAD 85.



READING

(All reading courses will meet five hours a week for eight weeks. A student, if he so desires, will be able to complete two Reading courses — for a total of four units — in one semester.)

REA 50 Basic Reading Skills 2 sem. hrs.

For non-native speaking students. Individual and group instruction in vocabulary development, general comprehension, study skills and word attack. Course will be taught in both Spanish and English and will include lab work.
First Year Level.

REA 51 Intermediate Reading 2 sem. hrs.

For non-native speaking students. Individual and group instruction in continued vocabulary development, use of contextual clues, techniques for reading various types of material.
First or Second Year Level.
Prerequisite: REA 50 or permission of instructor.

REA 52 Progressive Reading 2 sem. hrs.

For non-native speaking students. Group and individual instruction in reading for enrichment. Various types of materials will be considered. Reading lists will represent various cultures found in the Southwest.
Second Year Level.
Prerequisite: REA 51 or permission of instructor.

REA 60 Basic Reading Improvement 2 sem. hrs.

For English speaking students. Individual and group instruction in techniques for improving basic skills to all reading. Intensive

skills with vocabulary, comprehension, word attack and study skills. There will be progressive testing to determine areas of strength and weaknesses as well as progress.
First Year Level.

REA 61 Developmental Reading 2 sem. hrs.

For English speaking students. Individual and group instruction in theory and practice of reading skills appropriate to various reading situations, discovering main ideas, reading for details, skimming, locating information and reading for recreation.
First or Second Year Level.

Prerequisite: REA 60 or permission of instructor.

REA 62 Advanced Reading 2 sem. hrs.

For English speaking students. Theory and practice of reading skills needed for effective academic performance. Emphasis on comprehension, flexibility of reading rate, vocabulary development, and continual critical evaluation of printed material.
First or Second Year Level.

Prerequisite: REA 61 or permission of instructor.



RELIGION, COMPARATIVE

REL 30 Comparative Religions: Oriental 3 sem. hrs.

Hinduism, Buddhism, Zoroastrianism, Confucianism, Taoism, Shintoism, and Zen Buddhism will be explored through readings, discussions and movies. Christianity will be compared through student knowledge and opinion in discussions. (To be offered in the Spring of 1971.)

Second Year Level.

***REL 40 Introductory Studies in Religious Philosophy 3 sem. hrs.**

(Same as Philosophy 40.)

***REL 41 Comparative Religions: Western 3 sem. hrs.**

Judaism, Christianity, Islam and more recent religious developments in the west will be discussed, including some consideration of the current religious situations in the Middle East, Africa, Europe and the Americas.

Second Year Level.



RESPIRATORY THERAPY

RTH 71 Equipment and Procedures I 3 sem. hrs.

A brief history of respiratory therapy, handling of medical gases, safety practices and general equipment used in the administration of gases are covered in this introductory course.
First Year Level.

Prerequisite: Admission to Respiratory Therapy program.

RTH 73 Basic Health Technology 3 sem. hrs.

Specific principles of nursing related to the care of patients with respiratory problems are covered, with emphasis on the interpersonal relationships between patient and therapist. Professional and medical ethics are reviewed. (To be offered in the Spring of 1971.)

First Year Level.

Prerequisite: Admission to Respiratory Therapy program.

RTH 76 Pharmacology for Respiratory Therapists 2 sem. hrs.

This course covers the pharmacological classification of medications used in cardiopulmonary disorders. Mathematical calculations necessary for patient administration are included. (To be offered in the Spring of 1971.)

First Year Level.

Prerequisite: Admission to Respiratory Therapy program.

RTH 78 Basic Microbiology 2 sem. hrs.

A basic study of microorganisms and the control of pathogens is related to the aseptic techniques used in Respiratory Therapy. (To be offered in the Spring of 1971.)

First Year Level.

Prerequisite: Admission to Respiratory Therapy program.

RTH 80 Equipment and Procedures II 3 sem. hrs.

The student is introduced to the study of humidity-aerosol relationships and methods of medical gas administration. The theory of construction of specific equipment used is studied. (To be offered in the Spring of 1971.)

First Year Level.

Prerequisite: RTH 71.

RTH 81 Equipment and Procedures III 4 sem. hrs.

Methods and principles of resuscitation are discussed in depth. Theory and application of resuscitation equipment is studied. (To be offered during the Summer Session.)

First Year Level.

Prerequisite: RTH 80.

RTH 82 Respiratory Physiology 5 sem. hrs.

A study of lung development and pathology and hypoxic states. The principles involved in ventilation and gas transport within the human body are covered in depth.

First Year Level.

Prerequisite: LSC 20.

RTH 86 Diseases and Treatments I 5 sem. hrs.

Cardiopulmonary diagnostic procedures and disorders are discussed.

Second Year Level.

Prerequisite: RTH 82.

RTH 87 Equipment and Procedures IV 5 sem. hrs.

The structural theory of respirators, chest physiotherapy and respiratory therapy procedures is covered.

Second Year Level.

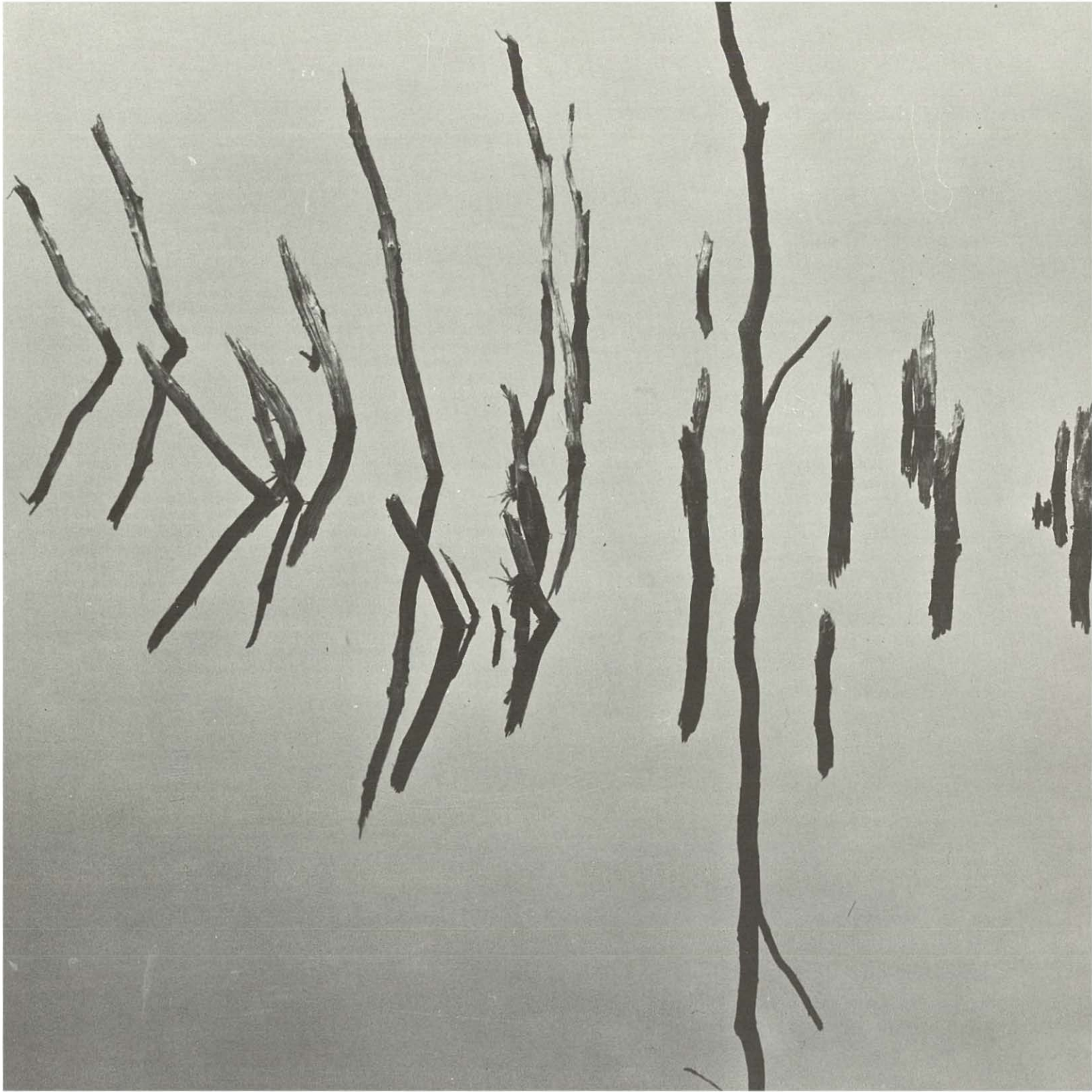
Prerequisite: RTH 81.

RTH 89 Diseases and Treatment II 5 sem. hrs.

A continuation of the study of pathophysiology and treatment of cardiopulmonary disease. (To be offered in the Spring of 1971.)

Second Year Level.

Prerequisite: RTH 86.



RTH 90 Equipment and Procedures V 5 sem. hrs.
The construction and use of pulmonary function testing equipment, and volume limited ventilators. (To be offered in the Spring of 1971.)
Second Year Level.
Prerequisite: RTH 87.



SHEET METAL

SML 70 Sheet Metal I 4 sem. hrs.
Students learn to fabricate, assemble, modify, repair and install sheet metal articles and lay out work according to specifications and blueprints.
First or Second Year Level.

SML 71 Sheet Metal II 4 sem. hrs.
Continued detailed study and practice of sheet metal layout, fabrication, assembly and special projects. (To be offered in the Spring of 1971.)
First or Second Year Level.
Prerequisite: SML 70.



SPANISH

SPA 1 Elementary Spanish I 4 sem. hrs.
Basic communication skills will be taught. Emphasis on oral communication plus a firm foundation in elementary grammar. Students will be exposed to the culture and traditions of the Spanish speaking countries. Class meets four hours; lab, one hour.
First Year Level.

SPA 2 Elementary Spanish II 4 sem. hrs.
A continuation of Spanish I. Class meets four hours; lab is one hour.
First Year Level.
Prerequisite: SPA 1 or equivalent.

SPA 3 Intermediate Spanish I 4 sem. hrs.
Intensive review of grammar fundamentals and a continued practice in speaking will be stressed. Students will read selected authors and write short compositions. Class, four hours; lab, one hour.
Second Year Level.
Prerequisite: SPA 2 or equivalent.

SPA 4 Intermediate Spanish II 4 sem. hrs.
This is a continuation of Intermediate Spanish I. Class, four hours; lab, one hour.
Second Year Level.
Prerequisite: SPA 3 or equivalent.

SPA 5 Imaginative Writing 1 to 4 sem. hrs.
(Same as Communicative Arts 5, except conducted in Spanish.)

SPA 25 Intermediate Spanish Composition and Conversation I 3 sem. hrs.
This course will give students a more firm command of spoken

and written Spanish. Themes and conversations will be prepared from suggested topics. Current issues and events will be discussed. Class, three hours; lab, one hour.
Second Year Level.
Prerequisite: SPA 4 or equivalent.

SPA 26 Intermediate Spanish Composition and Conversation II 3 sem. hrs.
A continuation of intermediate Spanish Composition and Conversation I. Class, three hours; lab, one hour.
Second Year Level.
Prerequisite: SPA 25 or equivalent.

SPA 30-31 Commercial and Technical Spanish 2-2 sem. hrs.
The Spanish language as a business skill, especially planned for the bilingual secretary or office employe. Emphasis will be on business terms and the Spanish language as used in the Southwestern United States and Mexico. There will be practice in taking dictation and transcribing in both languages.
First or Second Year Level.
Prerequisite: Spanish proficiency in speaking and writing.

SPA 49 Mexican-American Culture and Thought 3 sem. hrs.
(Same as Philosophy 49.)

SPA 101 Intensive Spanish for Native Speakers I 4 sem. hrs.
Grammar instruction is designed to meet the particular needs of native speakers of Spanish; reading and writing in increasing difficulty to prepare for advanced composition; and introductory courses in Spanish literature.
Upper Level.

SPA 102 Intensive Spanish for Native Speakers II 4 sem. hrs.
This is a continuation of Intensive Spanish for Native Speakers I. (To be offered in the Spring of 1971.)
Upper Level.

SPA 104 Introduction to Spanish Literature I 3 sem. hrs.
Students will study representative Spanish literature from its beginning to the present. They also will acquire a general knowledge of the evaluation of Spanish thought and literary ideas. (Same as Literature 104).
Upper Level.
Prerequisite: SPA 4.

SPA 105 Introduction to Spanish Literature II 3 sem. hrs.
This is a continuation of Introduction to Spanish Literature I. (To be offered in the Spring of 1971.) (Same as Literature 105.)
Upper Level.

SPA 110 Contemporary Theater of Mexico 3 sem. hrs.
The theater of modern Mexico will be studied from the perspective of representative dramatists. The class will be conducted in Spanish.
Upper Level.
Prerequisite: Proficiency in Spanish.

SPA 117 Mexican-American Literature 3 sem. hrs.
Contemporary Mexican-American thought will be examined through the writings of Mexican-Americans. Other literary works concerning the Mexican-American also will be studied. The class will be conducted in Spanish. (Same as Literature 117.) Upper Level.
Prerequisite: A firm reading knowledge of Spanish.

SPA 118 Mexican-American Literature (In Translation) 3 sem. hrs.
Contemporary Mexican-American thought will be examined through the writings of Mexican-Americans. Other literary works concerning the Mexican-American also will be studied. This class will be conducted in English. (Same as Literature 118.) Upper Level.

SPA 120 Novel of the Mexican Revolution 2 sem. hrs.
Students will analyze, from a literary perspective, representative novels of the Mexican Revolution. They also will gain insights into contemporary Mexican and Mexican-American life as influenced by the Mexican Revolution of 1910. (Same as Literature 120.) Upper Level.
Prerequisite: A firm reading knowledge in Spanish.

SPEECH

SPE 2 Introduction to Oral Communication 3 sem. hrs.
An introduction to speech, with emphasis on developing confidence and effectiveness in ways in which people most frequently communicate among and between various cultures. First Year Level.

SPE 10 Public Speaking 3 sem. hrs.
An introduction to public speaking with emphasis on effective composition and delivery in a variety of situations to various audiences with varied cultural, political, and economic orientation. First Year Level.
Prerequisite: SPE 2.

SPE 20 Business and Professional Communication 3 sem. hrs.
Study of communication problems found in business and organizations, with emphasis on business media and special applications such as interviewing, dictation and telephone use. First Year Level.

***SPE 25 Forensics** 1 sem. hr.
A study of and experience in debate of current issues. May be repeated for a maximum of three credits. First or Second Year Level.
Prerequisite: SPE 10.

SPE 30 Small Group Discussion 3 sem. hrs.
An introduction to the theory and practice of small group communications. First Year Level.

***SPE 36 Oral Interpretation of Literature** 3 sem. hr.
Classroom and public readings to different groups to provide practice in understanding and evaluating poems, plays, stories and essays. Selections will emphasize cultural variety and dramatic possibilities. First or Second Year Level.

SWAHILI

SWA 50-51 Elementary Swahili 4-4 sem. hrs.
Basic patterns and structures of Swahili and sufficient vocabulary to communicate will be taught through conversation, reading and writing. An advance course in Swahili will be offered if enrollment is sufficient.* (May be offered in the Fall of 1970.) First Year Level.

TOOL AND MACHINE TECHNOLOGY

MAC 4 Technical Communications 3 sem. hrs.
(Same as Communicative Arts 4.)

MAC 51 Introduction to Numerical Control 2 sem. hrs.
(Same as Computer Science 51.)

MAC 52 Machine Shop for Technicians I 5 sem. hrs.
Aimed to help persons now in machine shops to get a solid working knowledge of over-all machine shop practice and to provide those not working in machine shops with a broad understanding of machine tools, shop practices and set-up. First Year Level.
Prerequisite: High school or equivalent or instructor's permission.

***MAC 62 Machine Shop for Technicians II** 5 sem. hrs.
General shop practice will provide a thorough training in the selection of proper metals and cutting tools. Experience in machining and fixture making, following an operator's document, setting up numerical control centers and hands-on operation of numerical control machines will be included. First Year Level.
Prerequisite: MAC 51, MTH 80, DFT 75 or consent of instructor.

MAC 64 Numerical Controlled Machines I 2 sem. hrs.
(Same as Computer Science 64.)

MAC 65 Computer Programming-FORTRAN and AD-APT 1 3 sem. hrs.
(Same as Computer Science 65.)

***MAC 72 Manufacturing Processes I** 3 sem. hrs.
Provides a background of knowledge about various manufacturing materials and fundamental types of manufacturing methods. Automation is introduced to acquaint the student with modern practice of numerical control. Second Year Level.
Prerequisite: MAC 62.

***MAC 73 Jig and Fixtures Designing I** 4 sem. hrs.
Design and machining of tools, fixtures and jigs are studied. Application of drill jigs, special work holding devices, indexing work holders, templates for form turning and other applications. Laboratory time is devoted to designing fixtures for production runs.
Second Year Level.
Prerequisite: MAC 62, 77, MTH 81, DFT 76 or consent of instructor.

***MAC 74 Quality Control I** 1 sem. hr.
Students get practical working knowledge of quality control methods and an opportunity to become familiar with various types of machine tools, tooling, measuring and inspection procedures.
Second Year Level.
Prerequisite: MAC 76 or consent of instructor.

MAC 75 Drafting for Machine Technology I 3 sem. hrs.
(Same as Drafting 75.)

MAC 76 Drafting for Machine Technology II 3 sem. hrs.
(Same as Drafting 76.)

MAC 77 Numerical Controlled Machines II 3 sem. hrs.
(Same as Computer Science 77.)

MAC 78 Programming AD-APT II and APT I 5 sem. hrs.
(Same as Computer Science 78.)

MAC 80 Technical Mathematics I 4 sem. hrs.
(Same as Mathematics 80.)

MAC 81 Technical Mathematics II 3 sem. hrs.
(Same as Mathematics 81.)

***MAC 82 Manufacturing Processes II** 3 sem. hrs.
A background in casting and foundry practices is offered. Through demonstrations and discussion, the student becomes familiar with the production of simple molds, core and casting and in basic heat treatment inspection and testing, using both destructive and non-destructive methods.
Second Year Level.
Prerequisite: MAC 72.

***MAC 83 Jig and Fixture Designing II** 4 sem. hrs.
Course enables the technician to lay out design of machine parts, working with government standards and the preparation of drawings for numerically controlled machines.
Second Year Level.
Prerequisite: MAC 73.

***MAC 84 Quality Control II** 3 sem. hrs.
Course offers the technician detailed instruction in inspection and quality control methods used by modern industry. Capabilities of numerical control drafting machines used for inspection are studied deeply.
Second Year Level.
Prerequisite: 74.

***MAC 85 Computer Programming APT II** 4 sem. hrs.
(Same as Computer Science 85.)

***MAC 93 Introduction to Terminals Computer** 2 sem. hrs.
(Same as Computer Science 93.)

MAC 90 Properties of Materials 2 sem. hrs.
A study of materials of industry and construction, their uses, properties, machining and fabrication methods, strengths, durability and testing methods. One hour lecture with three hours laboratory.
First Year Level.

MAC 91 Industrial Processes 2 sem. hrs.
Modern processing techniques are pre-studied with practical demonstrations in the multi-purpose shop. Course includes machining, hot metal casting, welding (gas and arc), sheet metal cutting, bending and fabrication. One hour lecture with three hours laboratory.
First Year Level.

***MAC 93 Introduction to Terminals Computer** 2 sem. hrs.
(Same as Computer Science 93.)



WELDING

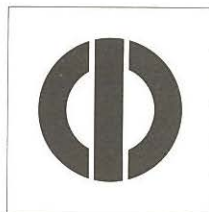
WLD 51-52 Arc Welding 4-4 sem. hrs.
Study of joining metals by electric arc either with or without the use of filler rod; the sequence of operations and selecting equipment and material to be used according to specifications or blueprints; and performance of arc welding in conjunction with inert gas.
First or Second Year Level.

WLD 56-57 Oxy-Acetylene Welding 4-4 sem. hrs.
Students learn set-up and operation of oxy-acetylene welding equipment; how to weld flat, horizontal, vertical and overhead on standard alloys of steel; and to braze and solder non-ferrous and ferrous metals and their alloys.
First or Second Year Level.









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Board of Governors

Michael J. Brown, *Secretary*

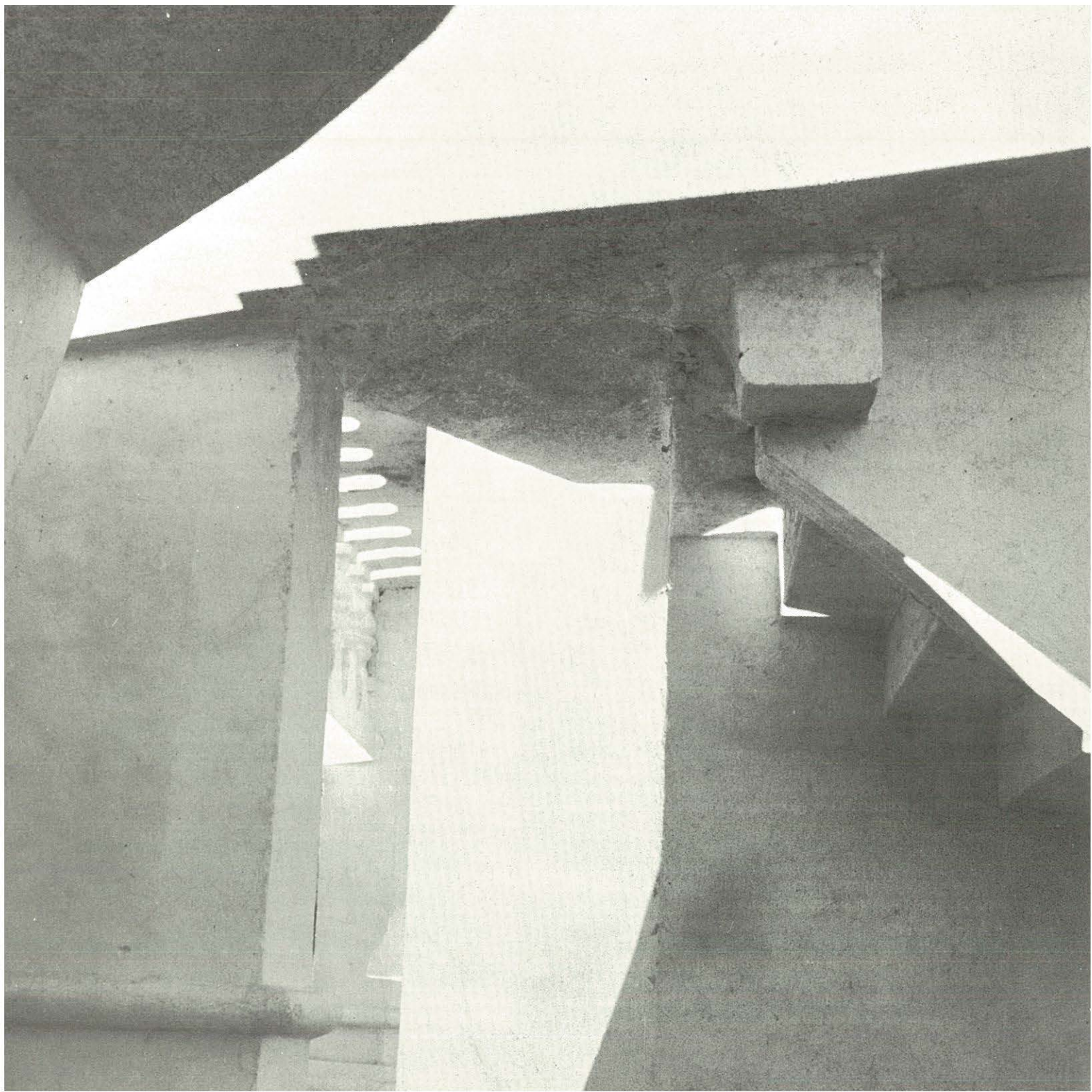
Howard D. Goldwyn

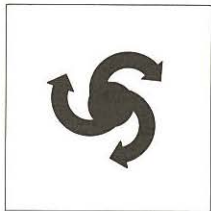
Michael J. Harris

Donald Shropshire

Maria Urquides, *President*

Arnold Jeffers, *Pima County Representative to
the Arizona State Board of Junior Colleges*





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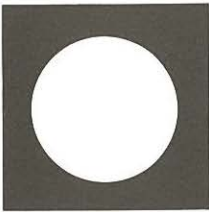
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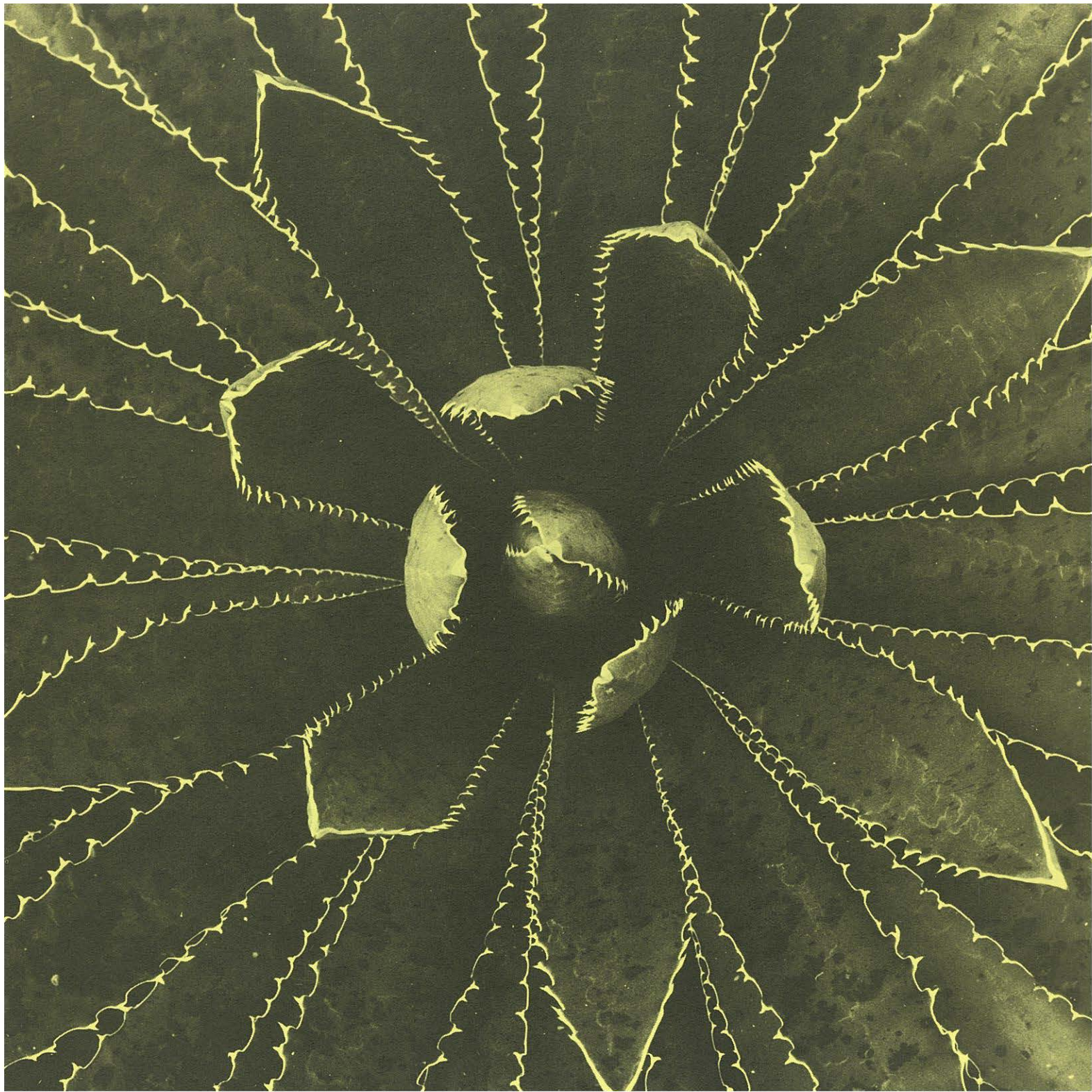
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Pima College Catalog Credits

Gill Kenny • *Design*
Steve Losey • *Design*
Barbara Sears • *Content*
Paul Kuiper • *Photography*
David Guss • *Photography*







“Nature forms us for ourselves, not for others, to be, not to seem.” *Michel de Montaigne*