Undergraduate Catalog 1977-1979

California State College
California, Pennsylvania 15419

California State College Directory

Director of Admissions	209, Admin. Bldg.	938-4404	Director of Housing	238, Admin. Bldg.	938-4444
Director of Athletics	224, Hamer Hall	938-4351	Director of Placement	109, South Hall	938-4413
The Counseling Center	320, South Hall	938-4191	Registrar's Office	103, Admin. Bldg.	938-4434
Director of Student Employment	238, Admin. Bldg.	938-4444	Student Activities Assn.	125, Student Union	938-4303
Revenue Office	119, Admin. Bldg.	938-4431	Vice-President for Student Affairs	236, Admin. Bldg.	938-4440
Dir. of Financial Aid	105, Admin. Bldg.	938-4415	Dir. of Veterans Affairs	203, Student Union	938-4077
Infirmary	College Infirmary	938-4232			

Area Code is 412.

California State College

California State College, one of Pennsylvania's fourteen state-owned and operated institutions of higher learning, is a four-year college fully accredited by the Middle States Association of Colleges and Secondary Schools and the National Council for Accreditation of Teacher Education.

California State College is a member of the Association of State Colleges and Universities and the American Association of Colleges for Teacher Education.

California State College is committed to affirmative action to assure equal opportunity for all persons regardless of race, color, religion, national origin, ancestry, or sex.

CATALOG POLICY

Students will be held responsible for keeping informed of official college policies and for meeting all relevant requirements as listed in this catalog.

The College reserves the right to change policies, curriculum requirements, and other provisions at any time.

Upon enrollment, students are required to follow the provisions of the catalog and curriculum guide then in effect. Students who have interrupted their education for more than one year will become subject to the provisions of the current catalog or curriculum guide.

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Academic Calendar

SPRING SEMESTER – 1977

Freshman Orientation . . . . . Monday, January 24
Registration (Undergraduate) Monday, Tuesday, Wednesday, January 24, 25, 26
Classes Begin . . . . . Thursday, January 27
Add Week . . . . . January 27 – February 3
Last Day of Late Registration . . . . . Thursday, February 3
Last Day to Drop Classes Without Academic Penalty . . . . . Thursday, March 10
Spring Recess:
  Begins After Classes . . . . . Saturday, April 2
  Ends at 8:00 A.M. . . . . Tuesday, April 12
Last Day to Drop a Course or
  Withdraw Officially From College . . . . . Wednesday, May 4
Spring Semester Ends . . . . . Wednesday, May 18

SUMMER SESSIONS – 1977

Registration and Orientation . . . . . Wednesday, Thursday, June 1, 2
Classes begin . . . . . Friday, June 3
July Fourth Recess
  Begins after classes . . . . . Friday, July 1
  Ends at 8:00 A.M. . . . . Wednesday, July 6
1st 6-week session ends . . . . . Thursday, July 14
2nd 6-week session begins . . . . . Friday, July 15
2nd 6-week session and 12-week classes end . . . . . Tuesday, August 23

FALL SEMESTER – 1977

Registration and Orientation . .Monday, Tuesday, Wednesday, August 29, 30, 31
Classes begin . . . . . Thursday, September 1
Labor Day Recess
  Begins after classes . . . . . Friday, September 2
  Ends at 8:00 A.M. . . . . Wednesday, September 7
Thanksgiving Recess
  Begins after classes . . . . . Wednesday, November 23
  Ends at 8:00 A.M. . . . . Monday, November 28
Classes end . . . . . Thursday, December 15
Winter Commencement . . . . . Saturday, December 17

SPRING SEMESTER — 1978

Registration and Orientation Monday, Tuesday, Wednesday, January 23, 24, 25
Classes begin . . . . . Thursday, January 26
Spring Recess
Begins after classes . . . . . Friday, March 17
Ends at 8:00 A.M. . . . . Tuesday, March 28
Classes end . . . . . Monday, May 15
Spring Commencement . . . . . Saturday, May 20

SUMMER SESSIONS — 1978

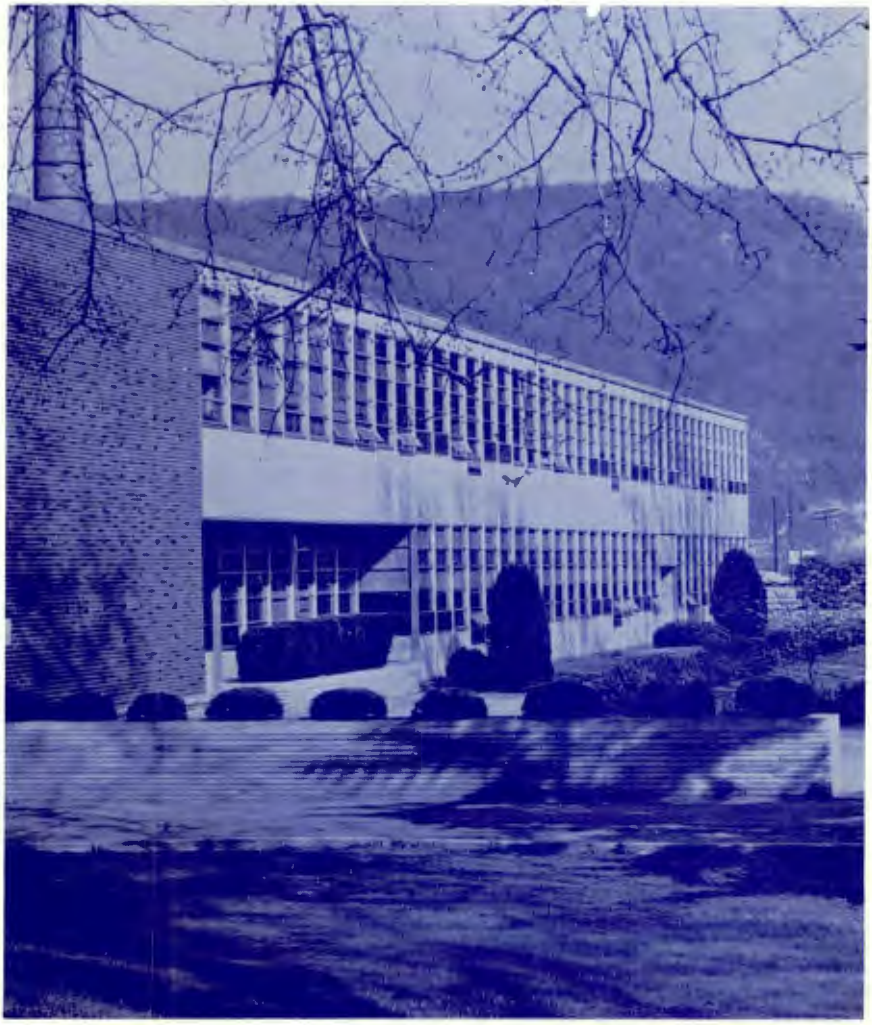
Registration and Orientation . . . . . Monday, Tuesday, May 29, 30
Classes begin . . . . . Wednesday, May 31
July Fourth Recess
Begins after classes . . . . . Friday, June 30
Ends at 8:00 A.M. . . . . Wednesday, July 5
1st 6-week session ends . . . . . Tuesday, July 11
2nd 6-week session begins . . . . . Wednesday, July 12
2nd 6-week session and 12-week classes end . . . . . Friday, August 18

FALL SEMESTER — 1978

Registration and Orientation . .Monday, Tuesday, Wednesday, August 28, 29, 30
Classes begin . . . . . Thursday, August 31
Labor Day Recess
Begins after classes . . . . . Friday, September 1
Ends at 8:00 A.M. . . . . Wednesday, September 6
Thanksgiving Recess
Begins after classes . . . . . Wednesday, November 22
Ends at 8:00 A.M. . . . . Monday, November 27
Classes end . . . . . Thursday, December 14
Winter Commencement . . . . . Saturday, December 16

SPRING SEMESTER — 1979

Registration and Orientation Monday, Tuesday, Wednesday, January 29, 30, 31
Classes begin . . . . . Thursday, February 1
Spring Recess
Begins after classes . . . . . Friday, April 13
Ends at 8:00 A.M. . . . . Monday, April 23
Classes end . . . . . Friday, May 18
Spring Commencement . . . . . Saturday, May 19




WELCOME TO CALIFORNIA PA.
Home of
CALIFORNIA
STATE COLLEGE
Equibank

History and Information

California State College, one of fourteen institutions of higher learning owned by the Commonwealth of Pennsylvania, traces its origin to the establishment of an academy in 1852. The community of California took its name during the Gold Rush of 1849.

Job Johnson, one of the founding fathers of the town, was also the leader in planning educational facilities for the new community. Concerning the vital role he played, Wickersham's *History of Education in Pennsylvania* said: "Foremost in pushing forward the educational movement was Job Johnson, a Quaker in this Scotch-Irish country, and a man of great public spirit." The town's original incorporators, spurred by Johnson, were also the founders of the college. They constructed a two-story building of hand-pressed brick near the site of the community's current junior high school.

The Academy opened in 1852 with Professor Ellis N. Johnson, a nephew of Job Johnson, as the first principal. The school was considered an essential ingredient of the town and was supported by a community tax.

Purchase of a 10-acre plot for the academy — on which most of the older buildings still stand — was completed on November 14, 1864, at the price of $133.44.

A total educational attempt was made at the new academy, extending from the kindergarten to the college level. The higher education portion of the curriculum was largely liberal arts.

Economic problems soon forced the college to seek funds beyond the community. The State Normal School Act of 1857 provided an opportunity for state funding, and the trustees sought to have the academy designated as the Normal School for the 10th District. They obtained a charter in 1865, converting the school to a teacher-preparatory institution and the curriculum was modified to include a three-credit course entitled "The Art of Teaching."

In 1874, the college was named the South Western State Normal School with an emphasis solely on teacher preparation. The new normal school adopted the "trimester" plan in order to assist in teacher improvement.

The trustees and stockholders sold the school to the Commonwealth in 1914, when it became California State Normal School. Departments of physical culture and commercial training were discontinued at that time and the college concentrated exclusively on a two-year preparatory course for elementary school teachers.

Another switch in direction and goals occurred in 1928, when the Commonwealth changed the normal school to a four-year, degree-granting state teachers college. Emphasis at this time was also focused on preparation for secondary schools, industrial arts and atypical or special education.

In 1959, the college assumed its present name as a reflection of its expanded role as a multi-purpose institution. A Graduate School was established in 1961. The Arts and Sciences Program was initiated in 1962. Further expansion of the college's mission and goals occurred in 1974, when the schools of Science and Technology and Continuing Education were established.

THE CAMPUS

The college is in the Borough of California, a community of approximately six thousand residents located in Washington County on the west bank of the Monongahela River, about a one-hour drive south of Pittsburgh. The college is accessible from the north via Interstate 70 and State Route 88, and from the south by U. S. Route 40 (the old National Pike) and State Route 88. A new (currently under construction) limited access highway will eventually link the campus directly with Interstate 70 and other limited access highways. The college is approximately one hour from Pittsburgh's International Airport.

The main campus consists of 33 buildings situated on 59 acres. A modern football stadium, including an all-weather track, seven tennis courts, a baseball diamond, playing areas for intramural sports, and picnic facilities are located on some 83 acres at the College Recreation Center on Route 88, approximately two miles south of the main campus.

THE AREA

The geographic location of the college gives the resident student opportunities to explore and pursue a wide variety of activities. Located in the Appalachian Plateau, an area of low rolling hills, the college is a short drive from camping, hiking, fishing, hunting, white water rafting and canoeing, and skiing activities in the Laurel Mountains. In addition to cultural activities provided on campus, the student has easy access to the Pittsburgh metropolitan area. This easy access provides the student an opportunity to enjoy the Pittsburgh Symphony, the Pittsburgh Ballet, the Civic Light Opera, the Pittsburgh Steelers, Penquins, Pirates, Triangles, various museums and all of the excitements and attractions of a major metropolitan area.

COLLEGE OBJECTIVES

The faculty and students of California State College are participating members of an educational institution charged with the preservation, discovery, and dissemination of knowledge in the arts, sciences, technologies, vocations and professions, and with the creative application of that knowledge in their lives both as individuals and members of society.

The objectives of this institution are:

(1) To provide a liberalizing education which aims at developing analytical thinking and individual initiative and responsibility;

(2) To provide flexible, innovative programs that are responsive to a broad range of student and regional needs;

(3) To provide a competent faculty, an efficient administrative staff, and appropriate facilities;

(4) To create and maintain a learning environment in which the rights of all are respected;

(5) To provide learning opportunities for persons interested in baccalaureate, graduate, and non-degree programs;

(6) To promote effective communication among faculty, students, administration, and the general public;

(7) To provide a diversity of cultural and intellectual activities and experiences for the college and surrounding communities;

(8) To encourage thoughtful and responsible faculty and student participation in local, state, national, and international affairs;

(9) To aid and encourage high standards of teaching and participation in professional activities;

(10) To foster academic research which contributes to human knowledge and the vitality of the institution.

ACADEMIC PROGRAMS

In order to fulfill the college objectives and to provide educational opportunities for students with different backgrounds and interests, California State College offers a wide variety of academic programs. All of the degree programs are based on two years of broad general education designed to assist the individual to develop his skills in communication, grow in cultural and intellectual interests, and develop his ability to do critical thinking. This extensive foundation in the arts and sciences is enriching and essential in providing a liberal education for all students.

As a multipurpose institution, California State College offers degrees from four separate schools. The Graduate School offers the master of science, master of arts and master of education degrees. The School of Arts and Sciences awards either the bachelor of arts or the bachelor of science degree in thirty-nine major fields. The School of Education confers five separate bachelor of science degrees in education. The new School of Science and Technology formally began operation in 1975 and currently offers seven different majors. The School of Continuing Education draws from all of the schools to provide programs for interested adults. The following bachelor degree and special programs are available:

Administration and Management
American, Soviet and Slavic Studies
Anthropology
Athletic Coaching Endorsement Program
Biology
Cardio Pulmonary Resuscitation
Chemistry
Dental Hygienist
Early Childhood Education
Economics
Elementary Education
English
Environmental Science
Geography
Geology
Graphic Communications Technology
Highway Safety and Driver Education
History
Humanities Area
Industrial Arts Education
Industrial Management Technology
Management of Non-Renewable Resources
Manufacturing Technology
Math and Computer Science
Mathematics
Medical Technology
Mental Retardation
Modern Language
Nature Conservation
Natural Science Area
Nuclear Technology
Petroleum Technology

Philosophy
Physics
Political Science
Psychology
Public School Nursing — Nurse Anesthesiology
Secondary Education
Social Science Area
Sociology
Social Work
Special Education
Speech Communications
Speech Pathology and Audiology
Theatre
Urban Recreation and Park Administration
Urban Studies
Water Analysis Technology

THE LIBRARY

The J. Albert Reed Library currently houses a collection in excess of 392,000 volumes of which 181,800 are in microform, carefully selected to meet and support the needs of the graduate and undergraduate programs offered by the college. Currently, the library subscribes to over 2,000 periodical and serial titles.

Research potential is enhanced with the microform editions of both current and out-of-print material contained in the library's 557,700 unit microform collection. In addition to major sets of books in microform, the Micromedia Area encompasses the Educational Resources Information Center (ERIC) document collection of current resource and research material in education. The library also subscribes to the United States Government Document Collection of both depository and non-depository items which the library receives monthly in microform.

For convenience of students and faculty, photocopying machines and microform reader/printers have been installed in the library which provide copies at nominal cost to the students. Available for microform usage are 32 microform viewers to accommodate the microform collection, including 4 portable microfiche readers for home and dormitory use.

The Curriculum Library in the Learning Research Center contains an excellent collection of some 21,700 books and over 17,500 non-print materials for use by the students enrolled in the School of Education as well as student teachers involved in their professional laboratory experiences.

Library resources are interpreted to the academic community through a competent library faculty consisting of 3 Information Services Librarians; Liaison Librarians to the Schools of Education, Arts & Sciences, Science & Technology, and Graduate School; as well as librarians to coordinate the Micromedia Area, Periodicals Library, the Curriculum Library, Interlibrary Loan and Technical Services.

The library at California State College receives several benefits which are passed on to the academic community through membership in various cooperatives. Through membership in the Pittsburgh Regional Library Center, the college has access to the resources of some 35 academic, public and special libraries through interlibrary loan. This regional consortium includes major institutional libraries such as the University of Pittsburgh, Pennsylvania State University and the Carnegie Library of Pittsburgh. Computerized cataloging services from the Ohio College Library Center in Columbus are utilized in Reed Library through participation in the Pittsburgh Regional Library Center.

The library at California is one of 6 academic libraries participating in the Western Pennsylvania Buhl Network (WEBNET). The purpose of this consortium is to provide cooperative acquisitions, cataloging, reference, and interlibrary loan services in the field of education.

As a state-owned institution, California also has access to the material holdings of our 13 sister institutions as well as the State Library in Harrisburg.

A new library, currently under construction at a cost of about 7 million dollars, will provide a facility of 130,000 square feet with a capacity for 500,000 book volumes and seating for over 2,000 students.

PLACEMENT SERVICES

The Placement Office was established to assist seniors, graduate students and alumni of California State College in obtaining full-time, permanent, professional employment. Through the Placement Service, students may obtain general advice and information on job opportunities.

On-campus interviews are scheduled annually for students interested in meeting with representatives from school districts, business firms, governmental agencies, and industries seeking California State College graduates.

Admission to the College

UNDERGRADUATE PROGRAMS

CALIFORNIA STATE COLLEGE welcomes applications from all racial, religious, and nationality groups.

ENTRANCE REQUIREMENTS

Admission standards have been established by California State College to select those students who will be most likely to succeed in the various programs of the College.

1. GENERAL SCHOLARSHIP. An applicant for admission should be a graduate of an approved secondary school or have an equivalent preparation as determined by the Pennsylvania Department of Education.
2. APTITUDE AND ABILITY STANDARDS. An ability to do college level work should be evident from an aptitude examination such as the Scholastic Aptitude Test (S. A. T.). In certain instances, other kinds of evidence may be used to determine the ability to do college level work.
3. CHARACTER AND PERSONALITY. The applicant must be able to demonstrate that he/she possesses the personality traits, interests, attitudes, and personal characteristics deemed necessary for an advanced education.
4. ADMISSION TO SPECIAL CURRICULA. A student seeking admission to a special curriculum may be required to take an appropriate aptitude test in the special program in order to obtain further evidence of ability to succeed in the special program selected.

ADMISSION PROCEDURES FOR NEW STUDENTS

1. Applicants for admission should write to the Director of Admissions and request application forms.
2. Applicants should follow the instructions included with the application and return the required forms to the Director of Admissions. A non-refundable fee of $10.00 (payable to the Commonwealth of Pennsylvania) must be submitted with the application.
3. The Secondary School transcript form must be completed by the high school principal and returned to the Director of Admissions.
4. Applicants should submit official evidence of ability to do college work as indicated by tests such as the Scholastic Aptitude Test (S. A. T.).

POLICY FOR ADMISSION OF PENNSYLVANIA COMMUNITY COLLEGE GRADUATES

California State College subscribes fully to the Articulation and Transferability Agreement between the State Colleges and University and Pennsylvania

Community Colleges. Under this agreement, any graduate of a Pennsylvania Community College is eligible for admission to California State College if the student has received an Associate degree in an academic program approved by California State College.

Applicants with the Associate degree should write to the Director of Admissions and request application forms.

ADVANCED PLACEMENT PROGRAM

Advanced placement examinations which are completed under the auspices of the College Entrance Examination Board are available to students. Credit will be granted to students who submit scores of 2 or higher.

OUT-OF-STATE RESIDENCY

Out-of-state residency status is determined at the time of admission. Change of residency may only occur by appealing to the Residency Appeals Committee. For further information, contact the office of the Vice-President of Academic Affairs before registration.

ADMISSION PROCEDURES FOR TRANSFER STUDENTS

1. Students interested in transferring to California State College should write to the Director of Admissions and request application forms.
2. Transfer students should return the required forms to the Director of Admissions. A nonrefundable fee of $10.00 (payable to the Commonwealth of Pennsylvania) must be submitted with the application.
3. Transfer students must forward official academic transcripts from all other institutions attended. Such transcripts must be mailed directly to the Director of Admissions.
4. In addition, statements of honorable dismissal and satisfactory conduct must be submitted.
5. Transcripts submitted to meet entrance requirements by a transfer student are evaluated by the dean of the school to which the student has made application.

POST BACCALAUREATE ADMISSION

Post graduate students who want to enroll in undergraduate programs must file application forms in the Office of Admissions.

Applicants who are graduates of other colleges and universities must submit official transcripts with their applications.

No admission test is required as a condition of acceptance.

ADMISSION OF FOREIGN STUDENTS

Foreign students may be admitted to California State College under certain conditions. Admission will depend upon acceptable clearance from the educa-

tion authorities of the countries concerned and from the Department of State of the United States. Applicants from foreign countries must have competency in the use of the English language.

TRANSIENT ADMISSIONS

Transient students must request admission by submitting the proper application forms and a nonrefundable fee of $10.00 (payable to the Commonwealth of Pennsylvania) to the Office of Admissions. They will be permitted to register if they have the written approval of the appropriate academic officer of their college. In all cases, unless special permission has been granted in advance, such students are admitted for one term only.

OWNERSHIP OF ADMISSION CREDENTIALS

All credentials presented in support of an application for admission become the property of the College and are not subsequently returned to the student. They will be retained according to the provisions of college policy and the Family Education Rights and Privacy Act of 1974, as amended.

USE OF SOCIAL SECURITY NUMBERS

Social security numbers, which serve as permanent student identification numbers, must be entered on the application for admission. A student without a social security number is advised to obtain one as soon as possible. In the interim, a "dummy" number will be assigned temporarily by the Data Processing Center.

Academic Information

STUDENT RESPONSIBILITY

All students are advised and expected to familiarize themselves with the academic regulations of California State College and the specific requirements for their own educational programs. Faculty advisers are made available to assist students in planning an academic program, but the student has the responsibility for meeting all requirements for his degree. Students are urged to take advantage of the advisory and consultation services available at the college.

Students should feel free to consult with instructors, academic advisers, department chairpersons, the school deans, and the Vice President of Academic Affairs. All of these college representatives maintain regular office hours for student consultations.

CLASS ATTENDANCE POLICY

Regular class attendance is a prerequisite to successful academic work. It is the responsibility of the student to inform all of his instructors of the cause of an absence. If a student knows in advance that a class must be missed, the instructor should be notified if possible, and the student should arrange to make up examinations or other work. In the event of illness, students should report to the college infirmary.

Since the college has a **no cut** system, unexplained class absences will be recorded as unexcused absences. An excessive number of class cuts may be considered by the instructor in determining the final grade of the student.

This policy permits class absences for cause but places the responsibility for successful completion of the work on the student.

DEGREES OFFERED

California State College offers undergraduate programs leading to the Bachelor of Arts (B. A.) and the degree of Bachelor of Science in Education (B. S.).

On the graduate level, students may earn the degree of Master of Education (M. ED.), Master of Arts (M. A.), and Master of Science (M. S.) in a wide variety of specialized disciplines. Specific information on the graduate programs is contained in the California State College Graduate Catalog.

AWARDING A SECOND DEGREE

California State College offers students the opportunity to work for a second undergraduate degree. A student who has completed the Bachelor's degree program may work on another Bachelor's degree without doing four years college work, and the student enrolled in the degree program is permitted to complete the requirements of a second degree by doing as little as one additional year of undergraduate work. The specific requirements for this program are as follows:

1. Anyone possessing a Bachelor's degree or anyone currently working on a degree at this institution is eligible.
2. A **minimum** of thirty (30) semester hours in addition to the first degree will be required.
3. Student must meet all requirements of Area of Concentration with adviser's and/or department's approval. (Interpretation: those courses the student has taken for the first degree will be entered on the graduation check-out evaluation as though they were transfer credits.)
4. The second degree policy should not be confused with the procedure for students in the School of Education working on a second field of certification. Students may choose to work on a second teaching certificate by meeting the certification requirements without applying for or meeting the requirements for a second degree.

CREDITS

Credit for course work is recorded in terms of credit hours. For formal course work, one credit hour represents one class period per week for one semester of about sixteen weeks. In laboratory courses, a ratio of two or more hours of laboratory work for one credit prevails, according to departmental requirements.

RESIDENCE REQUIREMENTS

Students in all curricula must complete a minimum of thirty credits of the last sixty credits at California State College in order to qualify for a degree. These credits must be taken on the campus in regular day, evening, or Saturday classes.

CONTINUING AND NON-RESIDENT EDUCATION

In 1974, the College began a School of Continuing Education. Its major purpose is to relate the College to the needs of the communities it serves. This division of the College offers interested citizens credit-free seminars, conferences, workshops and a variety of special short courses. Admission to these is open to any interested citizen. This division also develops and offers specialized short courses and seminars for local businesses, governmental officials, and other professionals.

In addition to credit-free programs, this division of the College develops and offers college credit extension courses and programs. In these college credit programs the various academic resources of the College are called upon to provide quality academic programs for the interested adult student. Admission requirements and tuition charges for these students are the same as those for other undergraduate students.

COLLEGE LEVEL EQUIVALENCY PROGRAM (CLEP)

California State College also offers the adult student the opportunity to earn college credits in two ways other than regular classroom attendance.

These are the College Level Equivalency Program (C.L.E.P.) and the awarding of Life Experience Credits.

The CLEP program is composit of two testing categories. They are General Examination and Subject Examination.

The General area Examination is a series of tests in five separate areas. The areas are: English Composition, Natural Sciences, Mathematics, Humanities, and Social Sciences – History. A student may take any or all of these tests, with the possibility of earning as many as forty college credits.

The Subject area Examination is a comprehensive test covering one subject such as general Psychology, Statistics, etc. A student who successfully passes one of these examinations will be awarded credit for a comparable course at the College.

The C.L.E.P. program is administered by the College's Associate Vice President for Academic Affairs. Further information concerning the program is available in Room 226 of the Administration Building. There is a $25.00 fee for evaluation of the C.L.E.P. results and the recording of those results on the student's transcript.

CREDITS EARNED BY EXAMINATION

Credit may be earned in selected courses by students if they pass qualifying examinations. To challenge a course by examination, the following rules are to be observed:

1. Students must obtain permission to take a course by examination from the appropriate department chairperson, the instructor involved, and the Vice-President of Academic Affairs.
2. Registration in the course to be challenged is required.
3. Only pass (P) or fail (F) grades are used, and courses passed by examination are credited to the student's academic record. They will be identified by the symbol – CE.

LIFE EXPERIENCE

Life Experience credits are awarded for various non-collegiate kinds of training that a student has received. These awards are predicated "on the position that it is sound educational practice to grant academic credit for quality educational programs conducted by non-collegiate organizations, provided that the courses are at the college level, and the credit is appropriate to an individual's educational program" (American Council on Education, 1976).

Life Experience awards at the College are limited to the elective category. The maximum number of life experience credits awarded is thirty. These credits must be awarded prior to the student's completion of the last thirty credits required for graduation.

Applications for Life Experience credit awards are secured from the office of the dean of each school. After the application is screened, it is presented to the Life Experience Council. If a credit award is made, a fee of $25.00 is required of the student in order to record the award on the student's official transcript.

CREDITS FOR VETERANS

Veterans may be awarded credit for military service and/or military schools. Any veteran who has completed more than eighteen months in the military service and has received an honorable discharge (or release from active duty) is eligible for 5 credit hours. Active reservists are eligible at the rate of 1 credit hour per year, up to 5 credits. A veteran who had attended a military school may be eligible for credit. Each veteran seeking such an award must submit a copy of his D D 214 to the Director of Veteran's Affairs, who in turn will make a recommendation to the Office of the Dean.

GENERAL EDUCATION PROGRAM

The program reserves a 60-credit-hour portion of the 128 hours required for graduation for "general education." The specific distribution, "10, 10, 10, 30" is a balancing of the merits to **two** definitions of "general education," one in terms of self and the other in terms of general familiarity with aspects of reality.

The regulations of the program are that: In a total program presented for graduation, a minimum of ten hours must be in the "Humanities," a minimum of ten hours must be in the "Social Sciences" and a minimum of ten hours must be in the "Natural Sciences." Further, each degree program must call for graduation with 128 hours of credit including the above 10, 10, 10, and 30 hours of free electives in general education. The remaining 68 hours may be devoted to all aspects of "specialization" including the major and professional courses or concomitant courses. Certainly this 68 hours should also include reasonable course alternatives and restricted or free electives for the student.

The general education program provides for limited use of a Pass/Fail Grading System. Students may schedule no more than two of their general education courses each semester on a P/F basis. (Refer to the section on Pass/Fail grades.)

Selected programs in the School of Science and Technology have general education requirements somewhat different from those required otherwise at the College. All Science and Technology program majors are to see the Dean during the course of their first semester at the College to be certain of the general education requirements for them.

The College course offerings have been divided into four groups for purposes of the General Education Program. The three areas, Humanities, Natural Sciences, and Social Sciences, are listed below. The fourth group consists of professional and Interdisciplinary courses which do not satisfy the above requirements, but they may be included for the 30 hours of free electives.

HUMANITIES

Art – ART
Arts & Humanities – XAH
English – ENG
French – FRE
German – GER
Greek – GRE
Hungarian – HUN
Italian – ITA
Literature – LIT
Modern Foreign Language – MFL
Music – MUS
Philosophy – PHI
Polish – POL
Russian – RUS
Serbo-Croatian – SCR
Spanish – SPN
Speech – SPE
Theatre – THE

SOCIAL SCIENCES

Anthropology – ANT
Economics – ECO
Geography – GEO
History – HIS
Political Science – POS
Psychology – PSY
Social Studies – SOS
Social Work – SOW
Sociology – SOC

NATURAL SCIENCES

Biology – BIO
Chemistry – CHE
Earth Science – EAS
Marine Science Consortium – MSC
Mathematics – MAT
Physical Science – PHS
Physics – PHY

FREE ELECTIVES

American Studies – XAS
Coaching Endorsement Program – CPE
Co-Curricular Activities – CCU
Early Childhood Education – ECE
Educational Foundations – EDF
Educational Media – EDF
Elementary Education – EDE
Environmental Studies – XES
General Military Science – GMS
Graphic Communications Technology – GCT
Health, Phys. Ed. & Safety – HPE
Highway Safety & Driver Ed. – HSD
Industrial Arts – IAR
Industrial Technology – ITE
Interdisciplinary Studies – XXX
Public School Nursing – PSN
Registered Nurse Anesthetist – RNA
Secondary Education – EDS
Slavic Studies – XSS
Special Education – ECM (Exceptional Child – Mentally Retarded)
Speech Pathology & Audiology – SPA
Urban Affairs – XUA
Water Analysis Technology – WAT

REGISTRATION POLICIES

All registrations will be governed by the following policies:

1. A student must be admitted to California State College before permission will be granted to register. A letter of acceptance, or other official verification of admission to college, from the Office of Admissions, **must** be presented by all new students at the time of registration.
2. An official registration is contingent upon academic eligibility to register. Any registration completed in violation of this rule will be revoked.
3. A student who is delinquent in the payment of fees will **not** be permitted to register until the indebtedness is paid in full.
4. Each student is required to register **in person** according to the registration schedule as announced by the college.
5. Each student must comply with all registration procedures and complete the registration within the deadline period.
6. Students are not permitted to attend classes if they have failed to comply fully with registration policies and procedures.
7. A registration is **not** complete and official until the following conditions have been met:
   A. All required registration materials must be properly completed and submitted on time.
   B. All college fees must be paid in full or officially deferred. (Refer to the policy on payment of fees and deferments.)
8. Failure to register in the official manner as announced in college publications and elsewhere will cause the registration to be revoked.

REGISTRATION PROCEDURES

1. Academic Advisement — Except for entering freshmen and transfers, students are required to contact their advisers during the advisement period to plan their course schedules.
2. Signed advisement forms must be presented at the time of registration.
3. Tickets of admission to register are mailed to all students after they have completed one semester at California. The time of registration (indicated on the ticket) is assigned on the basis of class seniority. (Example: seniors first, etc.)
4. After the tickets of admission and the advisement forms are presented at the designated time, registration packets are issued.

CANCELLATION OF REGISTRATION

1. In special cases a student's registration may be cancelled by administrative action.

2. A student who registers and subsequently drops out of college is required to notify the Registrar's Office immediately.
3. If the notification is received before classes begin, and if the student did not attend any classes, the registration may be cancelled if warranted by the circumstances. In such cases, however, the student forfeits $40.00.
4. If the notification is received after the term begins and the student attended one or more classes, normal withdrawal procedures will be followed. In such cases the student forfeits a percentage of his fees based upon the official date of withdrawal or the date of notification. (Refer to the sections on Withdrawal from College and Refund Policy.)

LATE REGISTRATION FEE

Each student registering after the date officially set for registration will be assessed a Late Registration Fee of $10.00, except when permission for late registration has been granted in advance by the Registrar because of illness or other unavoidable causes.

PAYMENT OF FEES

1. College fees are assessed and due at the time of registration.
2. Students will receive pre-printed billing statements inside their registration packets. These billing statements will be adjusted, if necessary, during registration.
3. All students (except for those with full financial aid to cover their fees) must pay at least one-half of their fees at registration. The balance is due six weeks later. (The exact date to be announced during each registration session.)

Refer to the section on College Fees.

COURSE NUMBERING SYSTEM

Courses numbered 100 to 499 are undergraduate courses. Courses numbered 500 and above are graduate level courses.

As a general guide to students in selecting courses, the following number classification should be used:

100 – 199	Freshman level
200 – 299	Sophomore level
300 – 399	Junior level
400 – 499	Senior level

Course numbers ending in "9" (such as 209, 459) are independent study or tutorial in nature. They require consent of the instructor or the department chairperson prior to registration.

Course numbers with a "9" or an "8" in the **middle** (such as 491, 481) are seminar or workshop in nature.

Students should consult their advisers or refer to the College Catalog for departmental course prerequisites.

DEPARTMENTAL COURSE ABBREVIATIONS

The following departmental and/or program abbreviations are used to identify courses:

DISCIPLINE CODE	PROGRAM	DEPARTMENT
ANT	Anthropology	Social Science
ART	Art	Art
BIO	Biology (including Intro to Biology)	Biology
CCU	Co-Curricular Activities	
CHE	Chemistry	Physical Science
CPE	Coaching Endorsement Program	Health & Phys. Ed.
EAS	Earth Science (including Geology)	Geography
ECE	Early Childhood Education	Elementary Education
ECM	Exceptional Child – Mentally Retarded	Special Education
ECO	Economics	Social Science
EDE	Education – Elementary	Elementary Education
EDF	Educational Foundations	Educational Foundations
EDS	Education – Secondary	Secondary Education
ENG	English	English
FRE	French	Modern Language
GCT	Graphic Communications Technology	Science & Technology
GEO	Geography	Geography
GER	German	Modern Language
GMS	General Military Science	
GRE	Greek	Modern Language
HIS	History	History
HPE	Health & Physical Education	Health & Phys. Ed.
HSD	Highway Safety & Driver Education	Health & Phys. Ed.
HUN	Hungarian	Modern Language
IAR	Industrial Arts	Industrial Arts
ITA	Italian	Modern Language
ITE	Industrial Technology	Science & Technology
LIT	Literature	English
MAT	Mathematics	Mathematics
MFL	Modern Foreign Language	Modern Language
MSC	Marine Science Consortium	Geography & Biology
MUS	Music	Music
PHI	Philosophy	Philosophy
PHS	Physical Science	Physical Science
PHY	Physics	Physical Science
POL	Polish	Modern Language
POS	Political Science	Social Science
PSN	Public School Nursing	Educational Foundations
PSY	Psychology	Psychology
RNA	Registered Nurse Anesthetist	Educational Foundations
RUS	Russian	Modern Language
SCR	Serbo-Croatian	Modern Language

DISCIPLINE CODE	PROGRAM	DEPARTMENT
SOC	Sociology	Social Science
SOS	Social Studies	Social Science
SOW	Social Work	Social Science
SPA	Speech Pathology & Audiology	Speech Path. & Audio.
SPE	Speech	Speech
SPN	Spanish	Modern Language
THE	Theatre	Theatre
WAT	Water Analysis Technology	Science & Technology
XAH	Arts and Humanities	Interdisciplinary Studies
XAS	American Studies	Interdisciplinary Studies
XES	Environmental Studies	Interdisciplinary Studies
XSS	Slavic Studies	Interdisciplinary Studies
XUA	Urban Affairs	Interdisciplinary Studies
XXX	Interdisciplinary	Interdisciplinary Studies

THE GRADING SYSTEM

The following grades are used to report the academic standing of students at the end of each term:

Grade		Grade Points Per Credit Hour
A	– Superior attainment	4
B	– Above average	3
C	– Average	2
D	– Below average; lowest passing grade.	1
F	– Failure	0
I	– Incomplete	0
P	– Passed	0
W	– Official withdrawal from college during the 1st six weeks of a semester. (Two weeks for a Summer Session. Not counted in the GPA.)	0
WP	– Withdrew passing after 6 weeks. (Two weeks for a Summer Session. Not counted in the GPA.)	0
WF	– Withdrew after 6 weeks with a D or F grade. (Will be counted in the GPA.)	0
WX	– Administrative withdrawal from college. (Not counted in the GPA.)	0
NG	– No grade submitted by the instructor by the deadline. A temporary grade. (Not counted in the GPA.)	0
UW	– Unofficial withdrawal from a course. The student never attended or there was a registration error as verified by the Registrar. (Not counted in the GPA.)	0

Computation of the Grade Point Average

A student's grade point average is calculated by dividing the total number of grade points earned in standard courses at California State College by the

total number of credit hours scheduled. Exceptions to this procedure are indicated below.

In computing a student's grade point average (GPA), the following rules are in effect:

1. Courses transferred officially from other colleges, advanced placement courses, courses passed by examination, courses in which a P grade was assigned, life experience credits, and credits granted for military service are **not** counted in the grade point average.
2. When a course is repeated, only the repeat grade will be counted in the grade point average.
3. No record of a failing grade will be kept if a student elects to take a course by examination and subsequently fails the examination.
4. In the Pass/Fail Grading System, a grade of P will not be counted in the grade point average. However, the credits passed will be counted in the conventional manner. A failing grade under this system will be counted in the grade point average.

POLICY ON INCOMPLETE GRADES

An incomplete grade (I) is assigned when a student cannot complete the term because of personal illness or other unavoidable reasons acceptable to the instructor. The following rules govern all incomplete grades:

1. An incomplete grade should be removed by special arrangement between the student and the instructor within one calendar year after the receipt of the incomplete grade. (NOTE: The student is **not** required to register for the course again.)
2. After the work has been completed, the instructor should submit a regular Change of Grade Form to the Registrar.
3. After the lapse of one calendar year, an incomplete grade is converted to I-F. This I-F grade carries no grade point penalty, but it does mean that the course and the grade cannot be removed from the academic record. In order to receive credit for a course recorded as I-F, a student must reschedule the course and complete it. Only the repeat grade will be considered in computing the student's grade point average.
4. For a student who withdraws from California immediately after incurring an incomplete grade, a statute of limitations of five years is imposed upon the removal of the incomplete. After the lapse of five calendar years, the incomplete grade automatically becomes an F grade. This F grade can be removed only when the course is repeated. Students who return to college before the end of this five year period have one calendar year to remove the incomplete grade.

PASS/FAIL GRADING OPTION

The general education program provides for limited use of a Pass/Fail grading system. Students may schedule no more than two (2) general

education courses each semester on a P/F basis. **No more than five (5) such P/F courses may be counted toward graduation.** Students shall designate which courses they want to take on a P/F basis after registration by completing forms in the Registrar's Office. Changes in these P/F Contracts may be made during the first six weeks of the semester. (For six-week summer courses, the deadline is two weeks.)

Students will receive the grade of "P" for A, B, C, or D earned in courses designated as "P-F". The grade of "P" will give credit hours in the course but the grade point average will not be affected by a "P" grade. "F" has the same meaning under the conventional system presently in effect and this P-F Grading System.

In no way shall a student be identified to the instructor who shall continue to grade all students in the regular manner. The regular grade submitted by the instructor will be converted to P or F before grade reports are mailed to students.

COURSE REPEATS AND COURSE CONTRACTS

Students have the privilege of repeating courses previously taken at California.

When a course is repeated, only the "repeat" grade (excluding grades of I, W, WP, WF and WX) will be counted in the grade point average. The original grade remains on the student's record.

Students who intend to repeat courses must complete a Course Contract in the Registrar's Office at the beginning of the term in which the "repeat" course is scheduled.

ACADEMIC CLASSIFICATION OF STUDENTS

A **full-time** undergraduate student is defined as one who is enrolled for 12 or more credits in a semester. A student enrolled for less than 12 credits per semester is classified as a part-time student. All **part-time** students desiring full-time enrollment status must secure approval for such a change.

In designating students by their class, the following credit hour ranges are used:

Freshmen	12 – 31 credits
Sophomores	32 – 63 credits
Juniors	64 – 95 credits
Seniors	96 or more credits

These class designations are based on credits **passed,** not on credits attempted.

Transfer credits may be counted only after an evaluation of official transcripts has been made by the appropriate school dean.

MAILING OF GRADE REPORTS

Within two weeks after each semester or summer session, full grade reports are mailed to students at their permanent home addresses. Students are required to provide their permanent home addresses and to keep such information current.

In compliance with the Family Education Rights and Privacy Act of 1974, grade reports are sent to each student and **not** the parents.

Grade reports are **not** mailed to students whose academic records have been sealed for failure to pay their college fees in full.

SCHOLARSHIP REQUIREMENTS

All students are expected to meet the minimum academic standards for each term of enrollment. The minimum standards are expressed in terms of a grade point average.

The following minimum standards are required for students to maintain a "Clear" academic status:

Student Category		Minimum Grade Point Average Required
Freshman	(12–31 credits)	1.75
Sophomore	(32–63 credits)	1.85
Junior	(64–95 credits)	1.95
Senior	(96 or more credits)	2.00

Academic Probation:

1. A freshman carrying fewer than twelve (12) credits will be subject to scholastic action at the end of the term in which the total number of credits **attempted** reaches or exceeds twelve.
2. Probationary action will apply to upperclass students (excluding freshmen with less than twelve credits) regardless of the number of credits scheduled in the term. This rule also applies to part-time students.

3. A student who fails to meet the minimum cumulative grade point average for his class category will be placed on academic probation.
4. Transfer credits that have been officially accepted will be counted in determining the student's proper class category.
5. At the end of one probationary semester, the classification of probation is removed when the student achieves the required minimum grade point average for his class category.

Academic Dismissal:

1. The college reserves the right to refuse the privilege of further attendance to students who have failed to meet the minimum scholarship requirements.
2. If a student's cumulative grade point average remains below the required minimum after one probationary term, that student will be dismissed from college for at least one semester.
3. Readmission to college after an academic dismissal is not automatic. Those who have been dismissed for unsatisfactory scholarship may be considered for readmission upon proper request to the school dean.

Good Academic Standing:

This classification means that a student has earned at least a C (2.00) average for all course work at California State College, is not on academic probation, and is therefore automatically granted the privilege of continued enrollment.

DISTINGUISHED SERVICE AWARDS

The Distinguished Service Awards are granted to the most outstanding women and men of each graduating class. The awards are made on the basis of participation in activities, character, citizenship, leadership, and personality. The election of persons to receive the awards is made by a committee composed of members of the faculty.

COMMENCEMENT HONORS

Commencement Honors are awarded to a limited number of students in the graduating class. Not more than one-eighth of the class may receive honors. A minimum of two (2) years residence is required to receive commencement honors.

Highest Honors . . . . . Grade Point Average 3.75 to 4.00
High Honors . . . . . Grade Point Average 3.50 to 3.74
Honors . . . . . Grade Point Average 3.25 to 3.49

This recognition can be bestowed only upon evidence of unusual ability as shown by scholastic records and in keeping with standards established and approved by the faculty.

DROPPING COURSES

Students who wish to drop courses, or to make changes in their course schedules after registration, must secure a Drop/Add Permit in the Registrar's Office. To drop a course, this Permit must be returned to the Registrar's Office with the "Drop Card" for the course being deleted. All course drops are governed by the following regulations:

1. Students may drop courses without academic penalty (i.e. no grade assigned and the record of the course, or courses, attempted deleted from the transcript) during the first six (6) weeks of a semester. (Note: For six week courses, the deadline is the end of the second week.)
2. After the sixth week of a semester, students who drop courses must receive either WP or WF grades. Instructors must assign A, B, C, D, or F grades and the School Dean must translate ABC grades to WP and D or F grades to WF. (Note: For six-week courses, the WP-WF grades will be assigned after the second week.)
3. No student will be permitted to drop a course during the last three (3) weeks of a semester or summer term.
4. Leaving a course without dropping it in the official manner will result in automatic failure of the course.
5. Specific instructions concerning the Drop/Add Procedure during the summer term are available in the Registrar's Office.

ADDING COURSES

Students are permitted to add courses during the first week of an academic term by securing a Drop/Add Permit in the Registrar's Office and returning it to the same office with the "Add Card" for the course being added.

Requests to add courses after the deadline must be approved in writing by the school dean.

In those cases where the addition of courses changes the fees due, students will be required to pay the proper fees before the schedule change can be approved.

COMPLETE WITHDRAWAL FROM COLLEGE

A student who decides to withdraw from college during any academic term, regardless of the reason, is required to report to the Registrar's Office and obtain withdrawal forms. After the completion of a withdrawal interview the student must obtain a clearance from several administrative offices, including the Business Office. Upon receipt of the clearance form and a review of the student's records and status, the Registrar will certify as to the type of withdrawal.

In the event a student cannot arrange for his withdrawal personally as indicated above, he must notify the Registrar's Office by telephone or by letter immediately. All withdrawals from college will be governed by the following regulations:

1. An honorable dismissal will be granted to a student who withdraws from college in the official manner, has met all financial obligations to the college, and has been properly cleared by the Registrar.
2. If the student withdraws officially, a W grade will be recorded for each course scheduled. A W grade carries no academic penalty and is not counted in the student's grade point average. For an official withdrawal from a six-weeks session, W grades will be recorded during the first two (2) weeks only.
3. After the sixth week of a semester, a student who makes an official withdrawal must receive WP or WF grades in all courses scheduled. Instructors must assign A, B, C, D, or F grades, and the School Dean must translate A, B, C grades to WP and D or F grades to WF. For six-week courses the WP-WF grades will be assigned after the end of the second week.
4. No student will be permitted to withdraw officially from college during the last three (3) weeks of a semester or summer term.
5. Leaving college without notifying the Registrar's Office and making an official withdrawal will result in automatic failure for all courses scheduled. It will also make the student ineligible for any refund of college fees. Improper withdrawals of this type will be classified as "not in good standing".

READMISSION OF STUDENTS

A student who desires to return to California after a lapse of three consecutive terms must apply for readmission by contacting the appropriate school dean.

A student who has been dismissed for unsatisfactory academic performance may only be considered for readmission in accordance with the conditions of the dismissal. Usually, the student is not considered for readmission for a minimum of one semester. (Refer to the section on Academic Dismissals.)

In the case of a suspension, or dismissal, for disciplinary reasons, the student must (a) comply fully with the conditions of the dismissal, and (b) receive permission from the Vice-President of Student Affairs to return to college.

In all cases, applications for readmission should be submitted to the proper administrator at least one month before the registration date for the term in which the student desires to enroll.

Finally, all readmission applicants must be cleared by the Business Office. No former student can be readmitted until the past indebtedness, if any, has been paid in full.

STUDENT CREDIT OVERLOAD

Students who wish to register for more than 17 credits must get special permission to do so from the dean of the school in advance of registration. If the student wishes to take more than 18 credits, the student must get special

permission to do so from the Vice President for Academic Affairs. It is not the policy of the college to give permission for more than 18 credits except in most unusual circumstances.

Students will be charged an overload fee of $33.00 for each credit in excess of 18. (Refer to the section on college fees.)

APPEALING A GRADE

In appealing a grade, a student should contact the instructor to discuss the grade which was assigned. If the student is not satisfied with the explanation, the student should then contact the department chairman. If accord is not reached at this level, the student may then appeal to the school dean. The final source of appeal is the Vice President for Academic Affairs. This step should be taken only if there is no possibility for a resolution at an earlier stage and only if the student is convinced that arbitrary and/or capricious standards were applied.

It must be understood that it is not the policy of the administration to change a grade duly assigned by an instructor. It is the policy of the administration and the faculty to provide students with an opportunity to voice their concerns on all matters, including grades.

MILITARY SCIENCE PROGRAM (ROTC)

Lieutenant Colonel Boyles (Professor of Military Science), Major Mowery, Captain Loftus and Captain Clayton (Assistant Professors)

The Sr. ROTC Instructor Group at Washington and Jefferson College has an ROTC extension located at California State College. The Senior Division ROTC Program offers the student an opportunity to learn leadership techniques that will be of benefit in both military and civilian endeavors, and to obtain college credits which count towards graduation.

OBLIGATIONS

Enrollment in the freshman and sophomore level ROTC Basic courses, (GMS 100, GMS 200), in no way obligates the student to future military service. The student enrolled in an ROTC Basic course is also not obligated to take an additional military science course.

REQUIREMENTS FOR ENROLLMENT

All regularly enrolled students are eligible to take GSM 100 and GSM 200, in any sequence, without meeting any additional requirements. Students interested in entering the advanced ROTC program in their Junior year must have successfully completed GSM 100 and GSM 200. Juniors who desire to enter the Advanced program but did not complete GSM 100 and GSM 200 may still be accepted into the Advanced program with approval from the ROTC Department. Additional requirements in the form of independent study or a 6 week Basic camp will be placed upon these students. Veterans qualify to enter directly into the Advance program.

WHAT ROTC OFFERS

Uniforms, equipment, and ROTC text books are issued without cost to formally enrolled students.

All ROTC students are offered the opportunity to participate in adventure training such as rapelling, water survival, and other activities.

All ROTC students have the opportunity to join the Ranger Club which offers many extra curricula activities such as orienteering, camping, rafting, rapelling and many other events which place real leadership producing situations in the hands of the students.

GSM 200 EVOLUTION OF AMERICAN MILITARY AND CURRENT TACTICS/MAP READING PRINCIPLES

General Military Science is divided into three sub courses: Military History, Map Reading, and Introduction to Tactics.

The Military History Course centers on the development of American military institutions, policies, experiences, and traditions in peace and war from colonial times to the present. Emphasis is on the relationship between the military and the aspects of American society and the role of the military in the establishment, expansion, preservation, and development of the nation.

The sub-course on map reading provides an in-depth study of military and topographic map reading, principles of land navigation, use of the compass, and introduction to the sport of orienteering.

The sub-course in tactics deals with the basic small unit composition, employment, movement, and communications. Discussed are basic principles of offense and defense, troop leading procedures, problem solving techniques, and the application of individual tactical skills. The course provides an excellent background for the transition to the Advanced ROTC program.

GSM 300 ADVANCED COURSE

This course provides the student with extensive study in the area of military communications in the combat environment. The student is exposed to an indepth study of military tactics, principles of war, and a review of the basic military skills acquired in the basic course. A pre-camp orientation is given to the students during the semester to prepare them for the Advanced Summer camp which is attended between the Junior and Senior year.

GSM 400 THEORY AND DYNAMICS OF THE MILITARY TEAM

The course provides the student with a basic understanding of the principles, fundamentals and tactics as they apply to the employment of combat teams. Emphasis is placed on leadership responsibilities of the Combat Commander as team coorindator. The development, understanding and an appreciation for the roles and the contributions of the various branches of the Army in support of the combat team is discussed in depth. Prior to graduation and commissioning students will be introduced to military law, logistics, unit administration, and a seminar on duties of the junior officer.

SCHOLARSHIPS AND FINANCIAL AID

All students at CSC, men and women, are eligible to apply for a one, two, or three year ROTC scholarship. The ROTC Scholarship pays full tuition, books, laboratory fees, and other educational expenses. ROTC scholarship students receive a $100.00 monthly tax-free subsistance allowance for up to ten months each year the scholarship is held.

Students in the advanced course will attend a 6 week summer camp between their junior and senior year. Transportation to and from Fort Bragg, North Carolina will be paid for by the Army and the cadet will receive one half of a Second Lieutenant's pay while attending the summer camp.

Students having successfully completed the Basic Course, or having received credit for the basic course by having served on active duty in the armed forces and meeting the admission requirements for the Advanced Course are paid $100.00 per academic month while they are in the Advanced ROTC program.

After the student completes the summer camp and receives his baccalaureate degree from college, he/she is commissioned as a Second Lieutenant in the United States Army.

THE MILITARY SCIENCE CURRICULUM

The Military Science Curriculum encompasses four years and is divided into two courses: Basic and Advanced.

THE BASIC COURSE

The first two years of Military Science constitute the Basic Course, which furnishes a background in the development of the US Army and the Army's role in support of national objectives. Additionally, military history, fundamentals of leadership, management, mapreading, and contemporary problems such as drug abuse and racial awareness will be addressed. The student incurs no obligation and makes no commitment while enrolled in the basic course.

GSM 100 INTRODUCTION TO MILITARY SCIENCE

This course is designed to introduce the first-year student to the study of military science. It will treat the military profession as an object of social inquiry to enable the student to gain a fuller and more accurate assessment of its position in American society. An in depth view of leadership styles, techniques, and management are discussed, then applied to practical use. The student will be provided a background from which can be formed a personal leadership philosophy. Introduction to basic markmanship, elements of mapreading, an overview of the defense establishment, and discussions of contemporary problems round out the GSM 100 course.

CONFIDENTIALITY OF STUDENT RECORDS

The following policies on the confidentiality and disclosure of student records are based on The Family Education Rights and Privacy Act of 1974 (Public Law 93-380), as amended.

I. Introduction

Official student records are established and maintained in a number of administrative offices for a variety of legitimate educational purposes. In assuming responsibility for the reasonable protection of these student records, the College recognizes its obligation to comply with The Family Education Rights and Privacy Act of 1974. Important sections of this federal law are summarized in this policy statement.

II. Ownership of Records

All records kept on students, including those records originating at other colleges or institutions that are required for admission, are the property of California State College.

III. Definition of a Student

A **student** is defined as one currently or previously matriculated on an official basis in any academic program of the College.

IV. Public Information Regarding Students

1. The following information is classified as public and may be released without the prior consent of a student: student's name, address (both local and permanent), telephone number, date and place of birth, academic curriculum, dates of attendance, date of graduation, degrees and awards received, most recent educational institution attended, participation in student activities (including athletics), and height and weight (for athletic teams).
2. Students may request that any or all of this information not be made public. Such requests must be submitted in writing to the Registrar's Office prior to the beginning of any academic term.

V. Disclosure of Student Records

1. Upon proper identification, a student may inspect his own official records in the presence of the administrator in charge of the records.
2. After a proper request to inspect a record has been received, the request must be honored within a reasonable period of time, not to exceed 45 days as required by federal law.
3. Limitations on the Right of Access by Students.

   The following materials are **not** subject to inspection by students:

   A. Confidential letters and statements of recommendation, which were placed in the education records prior to January 1, 1975.

   B. Financial records of the parents of the student, or any information contained therein.

   C. Medical, psychiatric or similar records which are used solely in connection with treatment. Such records can be reviewed by a physician or other appropriate professional of the student's choice.

4. Disclosure of Information to Third Parties

   In most circumstances students have the right to withhold their records from external requestors. Exceptions to this general principle are specifically stated on the following page.

A. Disclosure of student information will be made to a third party if written consent is given by the student involved.

B. Information concerning a student shall be released if properly subpoened pursuant to a judicial proceeding.

C. All necessary academic and/or financial records of students may be disclosed to the appropriate persons or agencies without a student's prior consent in connection with a student's application for, or receipt of, financial aid.

D. Further limited disclosure of certain kinds of information may be required in special circumstances in compliance with the federal law previously cited.

VI. Student Challenge to Record Entries

1. Students have the right to submit written/typed rebuttals to negative information contained in their files. A rebuttal statement shall become part of the file, and in cases where the negative information is reviewed by, or transmitted to, a third party, it must be accompanied by the student's statement of rebuttal.
2. A student may challenge the accuracy and/or appropriateness of material contained in his/her file. Once such a challenge is made in writing, it will be the responsibility of the college official in charge of the file to determine the validity of the challenge, if possible. The college official shall make a written response to the challenge of the student, specifying the action taken. Should a factual error be found in any materials, the college official is authorized to make the appropriate corrections.
3. If options 1 and 2 of this section are unsatisfactory, students may request a formal hearing to challenge inaccurate, misleading, or inappropriate information in their records. The College Record Hearing Committee shall conduct a hearing in accordance with the procedures outlined in Public Law 93-380, as amended.
4. The substantive judgment of a faculty member or administrator about a student's work, as expressed in grades and/or written evaluations, is not within the purview of this policy statement. Such challenges by students may be made through the regular administrative channels in existence.

VII. Responsibilities of College Officials

1. College officials in charge of student files are responsible for the reasonable care and protection of such files in accordance with college policy. This includes the responsibility for the release of confidential information only to authorized persons.
2. A log sheet, indicating the inspection or release of a student's file, must be kept in the student's file.
3. A college official may classify student materials and records under his jurisdiction as **inactive** as circumstances warrant. At the discretion of the college official in charge, **inactive** records may remain in the file but need not be circulated. These inactive records may be reviewed by the student upon request.

4. A college official may take the initiative in an attempt to purge unfavorable evaluations, or opinion records of a prejudical nature, in a student's file. This may be done by returning the material to the person who submitted it, or by requesting from the author that the material be destroyed. No college official has the authority to destroy such material without the author's permission.

VIII. College Officials Responsible for Student Records

The following college officers are designated as responsible for student records within their respective administrative areas:

1. The Vice-President for Academic Affairs
2. The Vice-President for Student Affairs
3. The Vice-President for Administrative Affairs

These officers are reponsible for the proper maintenance of all official student records under their jurisdiction in accordance with the policies of this document and the relevant state and federal laws.

NOTE: If further information is required, a student should contact the appropriate college official with respect to the type of student record in question.

REQUESTS FOR ACADEMIC TRANSCRIPTS

Students who need transcripts of their academic records and certificates of good standing and honorable dismissal may secure them from the Registrar's Office, room 103, Administration Building.

Transcript requests will be processed according to the following regulations:

1. A transcript request must be made **in writing.** This written request is the official authorization for the Registrar to release a copy of the student's academic record to a third party, or institution, as designated by the student. The request may be made as follows:
   a. By completing a request form in the Registrar's Office (Room 103, Administration Building), or
   b. By writing a letter to the same office indicating the number of transcripts required, type of transcript (undergraduate, graduate, or both), name and address of person making the request, and specific instructions as to where the transcript is to be sent (Example: Dean of the Graduate School, Pennsylvania State University, University Park, Pa. 16802).
2. As a safeguard against improper disclosure of academic information, no transcript requests will be accepted by telephone.
3. All transcripts will be issued in compliance with the provisions of the Family Education Rights and Privacy Act of 1974, as amended.
4. Transcript Fee: Each student is entitled upon proper request to receive one transcript without charge. Thereafter, the fee is $1.00 for each transcript. Payment in full by check or money order must be included with each request sent by mail. (Checks or money orders must be made payable to the Commonwealth of Pennsylvania.) Full payment is required before a transcript request can be processed.
5. In most cases, official transcripts (bearing the college seal and signature of the Registrar) are mailed directly to the person, or agency, designated by the student. If a transcript is issued directly to the student, it will be stamped: ISSUED TO STUDENT. This means that the student preferred to receive the transcript in person. Transcripts marked in this manner may **not** be acceptable as "official" documents when presented to a third party by the student.
6. Transcript requests will be honored as quickly as possible in order of the date of application. During busy periods such as registration, closing of a session, and graduation, there will be some delay in processing the requests. Therefore, it is advisable to submit requests well in advance of the date the transcripts will be needed.
7. No transcript will be issued for a student whose financial obligations to the college have not been met. In such a situation, the academic record is sealed. It cannot be released until the indebtedness is paid in full.
8. Any questions concerning these regulations and related problems or transcript errors, should be presented to the Registrar.

Notice to Transcript Recipients:

Academic transcripts are issued to a third party, or agency, on the condition that the recipient will **not** permit any other party, or agency, to have access to the transcripts without the written consent of the student involved.

SUMMARY OF GRADUATION REQUIREMENTS

Graduation requirements are the prerogative of a school dean and his faculty. All requirements are subject to change at any time.

Students should become acquainted with the specific graduation requirements for their respective programs. College policy states that students are responsible for meeting all graduation requirements and for submitting the required forms on time.

Compliance with the following policies and procedures will help students prepare for graduation:

1. Students **must** apply for graduation in the appropriate school dean's office by the deadline. Graduation will be postponed if this requirement is not met.
2. A minimum of 128 semester credits, including the satisfactory completion of all required courses, is required for graduation, with a cumulative grade point average of 2.00 for all courses in which grades other than P are assigned. (Grade points are not computed for courses completed at other colleges or universities.)
3. In the School of Education, the candidates must complete Student Teaching.
4. All college bills must be paid in full before graduation can be approved.
5. Students in all curricula must complete a minimum of thirty credits of the last sixty credits at California State College in order to qualify for a degree.
6. All credentials for graduation, including a certificate application and transcripts of credits from other institutions, must be submitted on time. Graduation will be postponed if a student's record is incomplete.
7. Attendance at the commencement exercises is appropriate, unless unusual circumstances warrant graduation **in absentia.** Permission to graduate **in absentia** is granted by the President of the College. Candidates for graduation are required to contact the President's Office and request permission to be excused from the commencement ceremony.

ACADEMIC AWARDS

California State College presents at graduation the following awards in recognition of outstanding academic achievement.

Modern Foreign Language Award For French And Spanish

English Faculty Award

The Joseph Kulikowski Memorial Award For Excellence In Elementary Education

Edward McNall Burns Scholarship For Outstanding Academic Achievement In The Social Sciences

Frederick E. Atkins Memorial Mathematics Award

George S. Hart Award For Academic Excellence (Social Sciences)

Special Education Faculty Award

Association Of Women Faculty Award For Scholarship And Service
Distinguished Woman Graduate

Department Of Geography And Earth Science Awards

Computer Science Award

Minor W. Major Memorial Scholarship Award (English)

THE COMPUTER CENTER

The California State College Computer Center provides academic and administrative computer services to the college community. The Center is located in the basement of the World Culture Building and is available for student use a minimum of 80 hours per week. The Center is open at least five days a week from 7:00 A. M. to 11:00 P. M. Extended hours during academic terms are published at the Center.

Students and faculty may use the computer facility in either the batch or interactive modes. A user's guide is available as well as selected documentation for library programs in statistics and other areas. Experienced help is available from staff members and from student assistants who are in the work-study program.

Students who are taking courses in Computer Science are automatically identified to the computer as valid users. Any other student may secure an application for a computer user identification by contacting the Computer Center.

COUNSELING SERVICES

An important objective of counseling is to help students explore, clarify, and understand their personal thoughts and feelings, to acquire new information about their environment, and how to cope effectively with it.

The Counseling Center offers both individual and group counseling which involve many areas of concern. A popular student question is "Where Am I Going?".

The Center offers professional counseling for students, faculty, and staff members who are experiencing personal/social, emotional, educational and vocational adjustment problems which interfere with their effective performance.

Appointments can be made by calling the Center or by "walking-in".

These services are available without charge to all California State College students, faculty, and staff. Each individual and group counseling relationship is a confidential matter between the student and the counselor.

Location: South Hall, room 320. Office hours: 8:00 a. m. to 12:00 noon and 1:00 p. m. to 4:00 p. m.

The Center is staffed by: Dr. Al Troy, Director, Dr. Phil Palermo, and Susan Wagner.

OFFICE OF VETERANS' AFFAIRS

The Veterans' Affairs Office provides assistance to all U. S. military veterans receiving benefits under the auspices of federal legislation for veterans. The Veterans' Affairs Office counsels veterans on admission, financial aid, fee deferments, vocational matters, and personal problems.

SPECIAL PROGRAMS

Special Programs Department at California State College administers two individual projects: Act 101 and Special Services projects. While both projects are designed to provide academic and non-academic services to the entire student population, the primary efforts are aimed at assisting the highly motivated individual whose educational and/or economic background indicates **difficulty in the successful completion of a degree program.**

The Act 101 and Special Services Projects offer students at California State College a program which provides academic advising, tutoring and counseling services. These services are provided by both professional staff and student assistants working in close cooperation with the college administration and teaching faculty.

The goal of the Special Programs Department is to increase the retention and graduation rates of students at the College.

For further information on these programs, students should contact the Office of Special Programs in Herron Hall, room 107.


LEFT
RIGHT

Student Fees and Expenses

BASIC FEES

ENROLLMENT FEE

The enrollment fee covers the cost of instruction, registration, the keeping of student records, library services, student welfare and health services (with the exception of extra nurses) and laboratory facilities.

Full-time students: For full-time students (scheduled from 12 to 18 credits) who are residents* of the Commonwealth of Pennsylvania, the enrollment fee is $400.00 a semester. An additional $33.00 per credit will be charged for credits scheduled in excess of 18.

Part-time students: Part-time students who are Pennsylvania residents will be charged $33.00 per credit hour. (A part-time student is one who is scheduled for 11 or fewer credits.)

Out-of-State students: Out-of-state students enrolled on a full-time basis pay an enrollment fee of $750.00 per semester. An additional $60.00 per credit will be charged for credits scheduled in excess of 18.

Out-of-State, part-time students: The enrollment fee is $60.00 per semester hour.

OTHER FEES

ADVANCE DEPOSIT

All first-year students, including transfers, and readmitted students are required to submit a $40.00 Advance Deposit payable to the **Commonwealth of Pennsylvania.** This fee may be mailed or hand delivered to the Revenue Office, Administration Building, California State College. It is to be paid in advance of registration and is credited to the student's account for the first semester.

ROOM AND BOARD CHARGES

The room and board charges cover the cost of living in a college dormitory and for meals in the college dining hall. The cost for both is $476.00 per semester. Of this amount, $266.00 is charged for room and $210.00 is charged for meals.

Part-time students may arrange to reside in a college dormitory and eat at the college dining hall on a weekly basis by paying $30.00 per week.

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*An in-state student is defined as one who is a bona fide resident of and domiciled within the State of Pennsylvania for a reasonable period, not less than one year, immediately preceding the student's registration for a term or semester in any State-supported college or university in the State of Pennsylvania. A minor will generally be presumed to be a resident of the place of his parents' or guardian's domicile.

The establishment of domicile is primarily a matter of continued residence and intention. Generally, Pennsylvania domicile is considered to be established upon the completion of at least 12 months of continuous residence within the State at the time of registration for courses.

ROOM DEPOSIT

An advance room deposit of $50.00, credited to the student's account, is required in order to reserve a room for the following academic year. First-year students who wish to reside in a dormitory will receive a housing contract by mail which must be signed and returned to the Revenue Office, California State College, with a check, money order, certified check, or bank draft in the amount of $50.00.

Upper-class students are also required to pay the $50.00 room deposit. They should obtain their housing contracts from the Director of Housing, Administration Building, Room 233. Schedules and deadlines for housing contracts are posted for each academic year.

STUDENT ACTIVITY FEE

Each student enrolled on a full-time basis is charged a Student Activity Fee of $35.00 per semester and $5.00 per semester for each part-time student. Upon payment of this fee, the student becomes a member of the Student Activities Association, Incorporated. The fee covers admission to lectures and most entertainment sponsored by the association, admission to athletic contests, subscription to the college newspaper, and certain other activities as defined by the Student Activities Association Board. This fee is paid at the time of registration to the **Student Activities Fund.**

LATE REGISTRATION FEE

Each student who enrolls after the date officially set for registration will be charged an additional fee of $10.00 (except when permission for late registration has been secured in advance because of illness or other unavoidable causes.).

LATE PAYMENT FEE

A $10.00 fee will be charged when a student fails to pay his fees during the registration period or by the deadline established in an approved deferment plan. (Refer to section on Deferment Policy.)

BAD CHECK CHARGE

Students making checks payable to "California State College" or "Commonwealth of Pennsylvania" which are not acceptable to the bank because of insufficient funds will be charged $10.00 for each bad check. The original amount plus the $10.00 charge must be paid by money order or certified bank draft. Personal checks will **not** be accepted.

DAMAGE CHARGES

Students shall be held responsible for the cost of damage, breakage, or loss and/or the return of college property.

INFIRMARY FEE

A boarding student who is ill is entitled to three days of infirmary service without charge. After that time, there is a charge of $1.00 per day for

infirmary service. Commuting students admitted to the infirmary are charged $3.00 per day from the time of admission. This fee covers board and nursing service. In no case does the infirmary fee include special nursing care or medical service.

DEGREE FEE

A fee of $5.00 must be paid by each candidate for a degree from California State College. A student shall not be permitted to complete graduation from the college until this fee has been paid. The fee is payable when the student has been notified of clearance for graduation.

STUDENT UNION BUILDING FEE

All students must pay this fee as follows:

10 or more credits	$10.00
7 to 9 credits	5.00
1 to 6 credits	2.50

NOTE: This fee is nonrefundable except for academic dismissal and in case of administrative action to revoke a registration.

PAYMENT OF BILLS

All fees are assessed at the time of registration. Upon payment, an official Revenue Receipt will be given to the student. Payment by check, money order, or certified bank draft made payable to the **Commonwealth of Pennsylvania** is required.

DEFERMENT POLICY

College fees are assessed at the time of registration, and they must be paid in compliance with the following regulations.

1. All students (except for those with full financial aid to cover their fees) must pay at least one-half of their fees at registration. The balance must be paid no later than six weeks after classes begin.

2. A financial aid award when properly certified is credited to a student's account. A recipient with partial financial aid and a balance due the College is expected to pay at least one-half of the balance at registration. Final payment should be made by the six weeks' deadline. Additional time, not to extend beyond the end of the academic term, may be granted in exceptional cases by the Financial Aid Office.

3. Students who are unable to pay one-half of their fees at registration and are **not** eligible for financial aid may be considered for deferments and specialized payment plans if they satisfy the following conditions:

   a. No indebtedness to the College.

   b. Sign a notarized promissory note which includes a payment plan.

   All arrangements for special payment plans must be made with the Revenue Supervisor or Business Manager.

4. Military veterans receiving G. I. Bill Benefits must request deferments, if needed, from the Director of Veterans Affairs.

5. Students who owe fees at the end of a term cannot register for a future term until their accounts are paid in full. In addition, the academic records of students with delinquent accounts will be sealed and grades will be withheld.

6. The late payment fee (a mandated Commonwealth fee) of $10.00 will be charged when a student fails to pay his fees during the registration period or when the student fails to pay according to an approved deferment plan.

DELINQUENT ACCOUNTS

No student may be enrolled, graduate, receive semester grade reports, or receive a transcript of his record until all previous charges are paid.

REFUND POLICY

Partial refunds, or credit, will be granted to students who have made an official withdrawal from college. They will be based upon a percentage of the fees paid according to the following schedule:

Semester Withdrawal	
1st and 2nd week	80% refund
3rd week	70% refund
4th week	60% refund
5th week	50% refund
After the 5th week	**No refund**

1. A refund, or credit, will not be allowed unless the withdrawal is properly made in the Registrar's Office. Except for emergencies, the date of notification will be considered the effective date of withdrawal.

2. Refunds are not granted on an automatic basis. A student eligible for a refund must submit a written request to the President without delay. No action will be taken until this has been done.

NOTE: The policy on refunds for Summer Sessions is covered on page 49.

FEES FOR SUMMER SESSIONS

ENROLLMENT FEE

The enrollment fee for any of the regular summer sessions is $33.00 per semester hour. For students who are **not** residents of Pennsylvania the enrollment fee is $60.00 per semester hour.

HOUSING FEE

Summer session rates are based on the number of weeks in the session. Summer rates are $15.00 per week for dormitory room (includes laundry of sheets and pillow cases), and $15.00 per week for dining hall meals.

SUMMER STUDENT ACTIVITY FEE

All students are charged an activity fee according to their academic status as follows:

Full-time undergraduate	$35.00
1 – 5 credits	5.00
6 – 11 credits	10.00

A **late charge** will be assessed after the first six weeks:

Full-time undergraduate	$ 5.00
1 – 5 credits	1.00
6 – 11 credits	2.00

Make checks payable to: STUDENT ACTIVITY FUND

SUMMER REFUND POLICY

After completion of registration, billing adjustments will be made for students who change their schedules by dropping credits officially in one or more of the Summer Sessions as follows:

3-Week Session

1st Week ..... 20% charge per credit dropped.
After 1st Week ..... No adjustment; full bill must be paid.

6-Week Session

1st Week ..... 20% charge per credit dropped.
2nd Week ..... 40% charge per credit dropped.
After 2nd Week ..... No adjustment; full bill must be paid.

12-Week Session

1st Week ..... 20% charge per credit dropped.
2nd & 3rd Week ..... 40% charge per credit dropped.
4th Week ..... 60% charge per credit dropped.
After 4th Week ..... No adjustment; full bill must be paid.

Special Conditions:

1. If classes are dropped before a session begins, full allowance per credit will be made in computing the student's bill.
2. Billing adjustments for financial aid recipients will **not** be made without approval from the Financial Aid Office.

SUMMARY OF FEES (PER SEMESTER)

Full-time Resident Students

	In-State	Out-of-State
Enrollment Fee*	$ 400.00	$ 750.00
Student Union Building Fee	10.00	10.00
Housing Fee	266.00	266.00
Meal Fee	210.00	210.00
Student Activity Fee	35.00	35.00
Total	$ 921.00	$1,271.00

Full-time Commuting Students

Enrollment Fee*	$ 400.00
Student Union Building Fee	10.00
Student Activity Fee	35.00
Total	$ 445.00

*Based on a maximum of 18 credits per semester.

NOTE: COLLEGE FEES ARE SUBJECT TO CHANGE WITHOUT ADVANCE NOTICE TO STUDENTS.

Student Affairs and Services

Inherent in the College's mission is an institutional commitment to the total development of all students. The Office of Student Affairs under the direction of the Vice-President for Student Affairs, is administratively responsible for the implementation of this commitment. The central focus of the Student Affairs program, therefore, is the personalization of the college experience; concern for not only individual intellectual development, but personal, social, and physical development as well.

Student affairs provides services to students in the following areas:

Orientation
Health Center
Discipline
Student Activities Association
Student Government
Housing
Dining Hall
Residence Hall Programming
Counseling Advisement
Financial Aid
Student Employment
Veterans' Affairs
Summer Camps

The principle administrative personnel responsible for the Student Affairs Program are:

Vice-President for Student Affairs
Associate Vice-President for Student Affairs
Dean of Men and Assistant Deans of Men
Dean of Women and Assistant Dean of Women
Director of Student Activities and staff members
Business Manager of the Student Activities Association
Director of Financial Aid and Associate Director
Director of Health Services
Director of Housing and Student Employment
Director of Veterans Affairs

ORIENTATION

A comprehensive one and one-half day orientation program is conducted for entering students and their parents during the summer months prior to the student's beginning fall semester. This initial formal encounter with the college community provides students and parents with an intimate view of the college's total program including both the academic and social aspects. During the course of the program students and parents discuss the academic requirements of various curricula and review an individual student's interests, capabilities, and career plans with an academic adviser. At the close of the program the students have registered for their first semester of college courses and both parents and students have made valuable contacts with college personnel.

HEALTH SERVICES

In the interests of student welfare the college maintains a Health Center designed to provide emergency treatment for students and staff.

General Health Services

The Health Center provides twenty-four hour service and is staffed by registered professional nurses. A qualified physician is available during specified hours. California State College does not collect a Health Service from students; therefore, free, unlimited medical service cannot be provided. Limited infirmary and nursing service is provided for resident students and emergency infirmary service is provided for all students subject to the conditions listed below.

Infirmary Service for Resident Students

Limited infirmary service is provided for students who reside in all college-owned dormitories. Free service is limited to three days, after which a charge of $1.00 (one dollar) per day is made. Fees for a physician, special nursing care and prescription drugs must be paid by the student.

Doctor's Fees and Ambulance Fees

Fees for office, home, or infirmary calls by any physician must be paid by the patient. Fees for ambulance service must also be paid by the patient.

Health and Accident Insurance

Blue Cross and Blue Shield Insurance is available for students. Information concerning the availability and costs of such insurance may be secured by contacting the Student Activities Office, California Memorial Union.

Chronic Diseases

Students suffering from chronic diseases will be interviewed periodically by the college physician to determine the nature of the treatment in progress and examined, if necessary, to determine the status of the disease.

The college may dismiss, or deny admission to any student whose health would be detrimental to the college community.

Class Absences Due to Illness

If class absence is of four days duration or longer students should contact the Health Center requesting that notification of their illness be sent to their instructors.

COLLEGE AUTHORITY

The Commonwealth of Pennsylvania has the power to make and enforce laws and regulations which are essential to the establishment, maintenance, operation and preservation of the Commonwealth. California State College is owned, established, funded, staffed, operated and maintained by the Commonwealth of Pennsylvania and has the authority to make and establish rules and

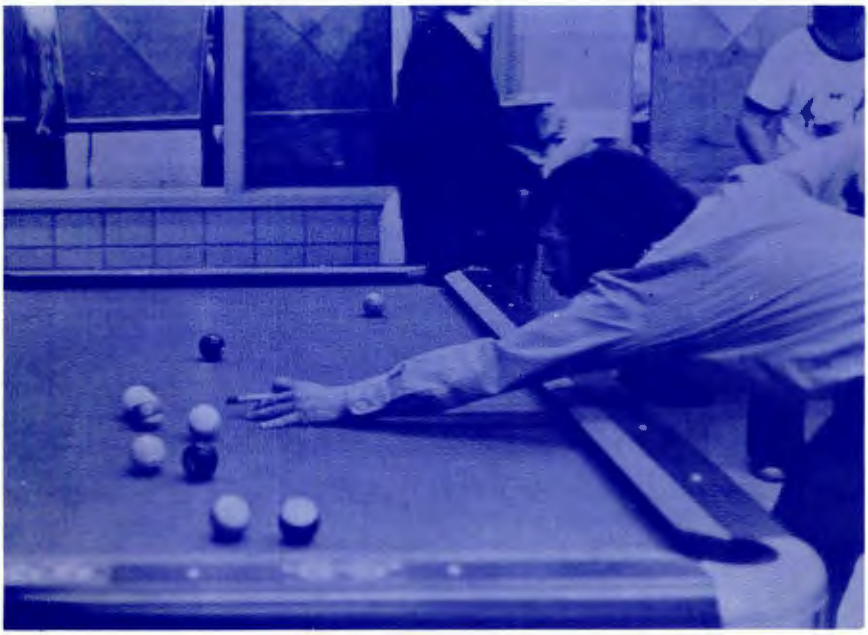
regulations designed to enable the College to carry out its purpose without disruption either by external or internal influences. Any student who is in violation of statutes, laws or regulations of the Commonwealth and/or regulations of California State College is subject to prosecution in the appropriate courts of the Commonwealth; and furthermore, is subject to disciplinary action by the college, either or both as may be determined by the proper and duly constituted officers of the Commonwealth and/or the College.

Disciplinary authority of the College includes but is not limited to the power to: admonish, warn, censure, place on probation, require restitution, suspend, expel, eject from premises and/or arrest by civil authorities.

COLLEGE REGULATIONS

1. Use of Alcoholic Beverages: The possession or use of alcoholic beverages on college property is prohibited. Students are reminded that Pennsylvania law prohibits the use or possession of alcoholic beverages by those under twenty-one (21) years of age.
2. Gambling in any form is prohibited on campus and in college owned and supervised buildings.
3. College matriculation and identification cards are for personal use only. They are valid only for the term in which the student is enrolled. Falsification of these cards, or the transfer of one to another person is strictly prohibited. These restrictions also apply to dining hall and library cards.
4. Students and student organizations are not permitted to make any purchases in the name of the college or the Student Activities Association without written authorization of the proper officers of the respective organization. Those who fail to comply with this regulation are personally liable for the payment of the items purchased.
5. Smoking Regulations: Smoking is permitted in the dormitory rooms, faculty and staff offices, the lounges of commuters, the snack bar, and the firetowers. Use the fireproof containers that have been placed in these areas and exercise extreme care to prevent fires. Smoking is prohibited in all classrooms, shops and laboratories, all corridors in South Hall, Main Hall, Dixon Hall, Lobby, J. Albert Reed Library, Steele Auditorium, the Little Theatre and other areas as posted.
6. Men and women students may not visit each other in their respective residence hall rooms except during hours when visitation is permitted. Visitation hours are posted in each residence hall. Any exception to these hours must be authorized in writing in advance by the Dean of Men and the Dean of Women.
7. The possession or use of firearms, firecrackers, or other explosives on campus or in student living quarters is prohibited.
8. Tampering with fire equipment and setting off a false alarm are prohibited.

9. Unlawful entry to any college building and the theft and/or destruction of any college property are prohibited.
10. Students who participate in any demonstration which is disorderly, riotous, destructive and disruptive are subject to legal action by the Commonwealth, the local government, and the college; and disciplinary action by the college as may be determined by the officers of the institutions concerned.
11. A notice to a student requesting the student to report to a faculty member or an administrative official has priority over any other activity and requires compliance on the date, day and time indicated; or the student must contact the faculty member or administrative official before that date, day and time indicated to arrange rescheduling of the conference.
12. Any person on California State College premises or in buildings supervised by the college is required to produce self-identification upon the request of a faculty member, administrative official, or employee of the security force.
13. Any student who possesses or sells or uses any drug or medicine including narcotics such as heroin and marijuana, etc., the issuance of which is controlled by prescription, is subject to disciplinary action by the college and legal action by the civil authorities unless such drug or medicine is secured through regular procedures and channels as required by the statutes of the Commonwealth of Pennsylvania.



STUDENT RIGHTS

As a citizen in this constitutional democracy every student has a right:

1. To equal protection of laws and equal justice in the courts;
2. To be free from arbitrary search and arrest; and
3. To have legal counsel and a prompt trial if accused of crime or malfeasance.

The Personnel Deans are available to help students when and if they are arrested and/or accused of violation of laws and regulations.

STUDENT ACTIVITIES ASSOCIATION

The Student Activities Association, Inc., (S.A.A.) is a non-profit corporation financed in part by a student activity fee which is paid by each student for each term. This is an official fee approved by the college.

Programs provided by the Student Activities Association are determined by the Student Congress and the Student Activities Board of Directors. Activities funds are collected, budgeted, appropriated, disbursed and accounted for by S.A.A.

The S.A.A. coordinates the extra-curricular activities provided by the college including homecoming, concerts, plays, musical productions, movies, dances, picnics and other special events. Intercollegiate athletics are also funded by S.A.A. In addition, S.A.A. coordinates the activities of student clubs and organizations. The *Student Handbook* provides a complete listing of active student clubs and organizations.

Publications coordinated by or through Student Activities include the Student Handbook, The California Times (student newspaper), Monocal (yearbook), Pegasus (literary magazine), and a number of informative brochures.

The S.A.A. is responsible for the development and maintenance of the College Farm, an eighty-seven acre area located one mile from California on Route 88 South. Facilities include tennis courts, practice football and baseball fields, picnic areas and Adamson Stadium.

STUDENT CONGRESS

Student Congress is the official student governing body. It is designed to represent and serve the entire student population. It provides for a student forum; establishes channels for the communication of students' concerns to the proper administrative and faculty personnel; implements programs and activities which enrich campus life; and creates opportunities for students to exercise and to develop leadership abilities.

HOUSING

California State College provides residence hall accommodations for approximately 1350 college students in six separate residence facilities. Clyde Hall and Stanley Hall house women students; Longanecker Hall, Binns Hall, Johnson Hall and McCloskey Hall house men students. All residence halls are staffed by full-time professional student personnel employees who provide personal and academic counseling to students.

Freshmen Students

All entering freshmen students except those who commute from their homes are required to reside in a campus residence hall and each resident student is required to accept a dining hall assignment. The dining hall assignment entitles the student to nineteen meals a week (three meals M—F, two meals Saturday and Sunday).

Upperclass Students

Upperclassmen may live where they choose; on or off campus. The college does not maintain any off-campus housing facilities and does not maintain listings of private off-campus housing facilities.

Application for Housing

Entering freshmen and transfer students who indicate that they need on-campus housing are provided with the appropriate application forms, etc. at the same time that they receive their letter of acceptance for admission to the college.

Upperclass students must contact the Director of Housing, Office of Student Affairs, Room 233 — Administration Building, California State College, California, Pa. 15419 if they wish to secure on-campus residence hall accommodations.

DINING HALL FACILITIES — Gallagher Dining Hall

General Regulations

1. Dining Hall cards are for personal use only. They are not to be loaned, or sold, to anyone.
2. If a Dining Hall card has been lost or stolen, the loss should be reported immediately to the Dining Hall Manager.
3. Students living off-campus may request assignments to the college dining hall. Such assignment is made for one full semester and may not be terminated unless the reason is urgent and exceptional. All students who take their meals in the dining room are subject to all dining room regulations.

RESIDENCE HALL AND DINING HALL FEES

See Page 45 for current detailed information.

SOCIAL FRATERNITIES AND SORORITIES

Local fraternities and sororities function under the control of their respective councils: the Interfraternity Council and the Panhellenic Council. These organizations are subject to college authority and regulations. Currently the following social fraternities and sororities function on campus:

FRATERNITIES	SORORITIES
Alpha Kappa Lambda	Alpha Kappa Alpha
Delta Chi	Alpha XI Delta
Delta Sigma Phi	Delta Sigma Theta
Kappa Alpha Psi	Delta Zeta
Phi Kappa Theta	Sigma Kappa
Sigma Tau Gamma	Sigma Sigma Sigma
Tau Kappa Epsilon	Zeta Phi Beta
Theta XI	Zeta Tau Alpha

HUMAN RELATIONS PROGRAM

California State College is committed to the principle of equal educational opportunity. Programs and courses are designed so that all students, regardless of sex, religion, race and ethnic background, have equal opportunities to succeed. A Human Relations Committee, comprised of students, faculty, staff, and administration, was established in February, 1974. This Committee oversees the development and implementation of campus-wide programs which assist with the recruitment, enrollment, and retention of minority students. The Committee assists faculty and administration in responding appropriately to the specific needs of minority students and in maintaining an atmosphere of non-discrimination.

FINANCIAL AID PROGRAMS

The Student Financial Aid Program functions on the premise that no person needs to relinquish his aspiration to attend college for lack of finances. The College makes every effort to direct each applicant toward the available financial aid programs. All Financial Aid Programs available to our students can be categorized as follows:

Employment provides the student an opportunity to earn money to help finance educational expenses. Students may work part-time while attending classes full-time. During the summer or other vacation periods students may work full-time (40 hours per week).

Grants are outright financial awards that do not carry a repayment obligation. They are awarded to students on the basis of documented financial need.

Scholarships like grants are outright financial awards that do not have to be repaid. Scholarships are awarded on the basis of ability.

Loans for education purposes usually must be repaid; however, repayment does not begin until after the student terminates his program of studies at the college.

California State College participates in the College Scholarship Service (CSS) of the College Entrance Examination Board. The College will rely upon the assistance of CSS in determining a student's financial need.

Entering students seeking financial assistance are required to submit a copy of the Parents' Confidential Statement (P.C.S.) form to the College Scholarship Service, designating California State College as one of the recipients, by April 1. The P.C.S. form may be obtained from a local high school, college, or the College Scholarship Service, P. O. Box 176, Princeton, New Jersey 08540.

HOW TO APPLY FOR FINANCIAL AID:

1. Obtain an institutional aid application and return it to the Financial Aid Office. This application which is included in the admissions packet may also be requested from the Financial Aid Office.
2. File a Parents' Confidential Statement with the College Scholarship Service, Box 176, Princeton, New Jersey. (Note: This form may be obtained by the applicant at his secondary school or from the Director of Financial Aid.)
3. Complete the application for the PHEAA grant which is available from the high school guidance counselor's office, the Financial Aid Office, or from PHEAA in Harrisburg. (Note: Only Pennsylvania residents are eligible to apply for the PHEAA grant.)
4. File the application for the Basic Educational Opportunity Grant. This form is available at high schools or the Financial Aid Office at California.

FINANCIAL AID PROGRAMS AVAILABLE AT CALIFORNIA STATE COLLEGE:

I. Student Employment:

The College maintains two separate employment programs for students. Work opportunities in either program depend upon the funds allocated, the student's availability for employment, personal qualifications, and willingness to work. A processed Parents' Confidential Statement must be on file at the Financial Aid Office to be considered for either work program.

Applicants must be enrolled, or accepted for enrollment as full-time students. Employment of full-time students cannot exceed 15 hours per week.

A. College Work-Study Program (Federal):

1. Preference for employment in this program must be given to students from low-income families.
2. Applicants must be in good academic standing as determined by the College.
3. Eligible students may be employed at the College or in approved projects off-campus.

B. Commonwealth Employment Program:

1. Students with documented financial need must be given priority for employment.

2. After needy students have been placed, other students will be considered for employment.

3. Application deadlines for Commonwealth employment:

   Summer Term — April 1, deadline
   Fall Term — July 1, deadline
   Spring Term — December 1, deadline

4. Commonwealth employment positions will be posted at various points on campus including the Office of the Director of Student Employment. These jobs will be posted well in advance of the application deadlines.

5. Applicants must be in good academic standing as determined by the College.

II. Grant Aid:

A. PHEAA Grants:

A state grant program is available to residents of Pennsylvania who need financial assistance to attain an education. All awards are based upon need for financial assistance as determined by the Agency. Further information may be obtained from the Director of Financial Aid or from the Pennsylvania Higher Education Assistance Agency, 219 Towne House, Harrisburg, Pennsylvania 17102.

B. Supplemental Educational Opportunity Grants:

A limited amount of S.E.O.G. Funds are available for exceptionally needy students who require assistance in order to attend college.

C. Basic Educational Opportunity Grants:

This grant is the largest of the Federal Grant Programs. All undergraduate students who are citizens of the United States are eligible to apply. B.E.O.G. awards are based on need and the amount of the award is determined by the U.S. Office of Education.

III. Student Loans:

A. National Direct Student Loans are long-term loans in which the student assumes an obligation to repay the amount borrowed at 3 per cent interest. Teachers in certain eligible schools (as defined by Health, Education and Welfare) located in areas of primarily low-income families may qualify for cancellation of their entire obligation. In addition, a full-time teacher of handicapped children in a public or non-profit private elementary or secondary school may have his entire obligation cancelled during five years of such employment.

B. PHEAA Guaranty Loans are long-term loans available to residents of Pennsylvania. The maximum loan for a full-time student is $2,000 per academic year not to exceed a total indebtedness of $10,000.

Repayment of the principal of the loan is not required until the student leaves or graduates from college. The federal government may pay the interest on behalf of the student while enrolled in college.

PHEAA loan applications may be obtained from a participating lending institution in or near the student's home community.

C. Student Loan Fund:

The Financial Aid Office has a fund to provide small, short-term emergency loans to students in good academic standing.

IV. Scholarships:

A. Hercules Incorporated Scholarship

Each year a $1000 award is made available to an academically outstanding student who is majoring in chemistry at California State College. The recipient of this award must have completed at least one year of undergraduate study in chemistry or a related science curriculum. This scholarship is sponsored by the Donora Plant of Hercules Chemical, Inc. Information concerning this grant is available at the Financial Aid Office.

B. Other Scholarships

Periodic awards are made by various college departments, organizations, affiliates and alumni. For information concerning these funds, students may contact the Financial Aid Office.

V. Other Financial Aid Programs:

Reserve Officers Training Corps (ROTC) Stipends

The College provides an Army Reserve Officers Training Corps Program. Students enrolled in the program are required to attend six-week summer camps. The summer camp requirement provides compensation. Junior and Senior ROTC cadets receive a subsistence allowance of $100 per month for each month they are in school. This allowance is tax free. Additional information is available through the Veterans' Affairs Office. The Parents' Confidential Statement is not required.

INTERCOLLEGIATE ATHLETICS

California State College sponsors a comprehensive athletic program for both men and women. The athletic program is regulated by the policies of the Athletic Council and administered by the Director of Athletics.

Sixteen sports are available to students. Baseball, basketball, cross-country, fencing, football, golf, tennis, track and field, and wrestling for men; basketball, cross-country, fencing, softball, tennis, track and field, and volleyball for women.

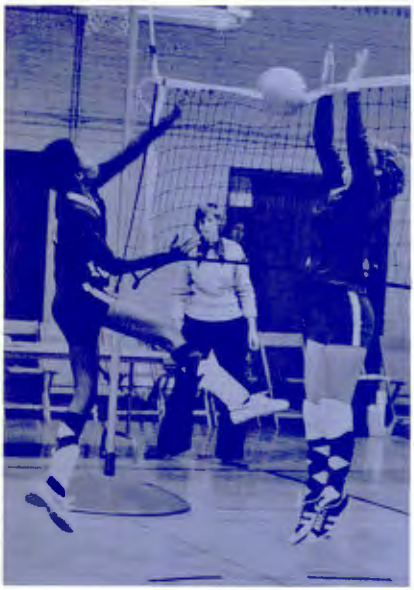
The College has outstanding facilities for athletics. Adamson Football Stadium, a modern facility located at the College Recreation Center, has spacious locker rooms and a training room. The stadium has a seating capacity of 4,500 and includes an excellent all-weather track.

Also located at the Recreation Center are seven lighted tennis courts, a baseball diamond, a softball field, and several practice areas for varsity sports and intramural activities.

Hamer Hall, located on the main campus, has three basketball courts, an Olympic-size swimming pool, and a wrestling workout room. The building has a seating capacity of 3,600 for basketball games and the natatorium can accommodate over 250 spectators.

Herron Hall, also located on the main campus, is used primarily for women's athletics. This gymnasium has two basketball courts, a handball court, and a swimming pool.

California State College holds membership in the NCAA, NAIA, ECAC, PSCAC, AIAW, and the EAIAW.



School of Arts and Sciences

The School of Arts and Sciences offers thirty-two programs leading to the Bachelor of Arts degree and eight programs leading to the Bachelor of Science degree. These range from broad based area programs to narrowly defined vocational and pre-professional majors; however, in every case, the very broad general studies program assures every student sufficient flexibility to select courses that meet his interests and needs.

THE CURRICULUM IN ARTS AND SCIENCES

In addition to completing the sixty semester hour general education requirements, a student majoring in an Arts and Sciences program must complete a sixty-eight semester hour area of concentration. Prospective students should study the following program descriptions carefully in order to identify the program best suited to their intellectual and career goals. Many of these programs have a great deal of flexibility built into them, permitting students to elect courses in both their major field and related fields. In every case, the student must consult with his adviser and secure his adviser's approval for any course that is intended to meet area of concentration requirements.

Since program review is an ongoing process at California State College, the following program descriptions should be read with the understanding that requirements may have been altered by the time prospective students enter the College. Up-to-date information can always be obtained by inquiring at the School Office or writing to Dr. Philip Y. Coleman, Dean of Arts and Sciences, 102 Noss, California State College, California, Pennsylvania 15419.

AREA PROGRAMS

In addition to the following list of specifically defined academic disciplines, the School of Arts and Sciences offers degree programs in Social Sciences, Natural Sciences, and Humanities. With the aid of an adviser, a student may structure his own program, choosing courses from the broader range of the entire area rather than limiting himself to a specific academic discipline or major program.

To earn a Bachelor of Arts degree under one of these programs, a student must, in addition to completing his General Education Program, complete 68 credit hours in either the Natural Sciences, Social Sciences, or Humanities Areas, the division of courses into academic areas being the same as under the General Education Program. Thirty credit hours of this work must be taken in courses beyond the introductory level. (Introductory level courses are indicated in the catalogue by a dagger /†/.) The student may count as many as five courses from outside his chosen area towards the completion of his program.

These programs allow each student the freedom to make his own decisions and pursue his own goals, allowing him to take extensive course work in areas where California State College does not offer a degree program or where the

AMERICAN STUDIES

The American Studies Program is designed for those students who have a special interest in an interdisciplinary approach to American culture; who wish to combine flexibility in choosing courses from different fields with structure and focus based on individual preference; and who have particular professional and employment opportunities in mind, such as advertising, public relations, journalism, pre-law, government service, and social service. The Program is designed also to appeal to students who are not certain about pursuing a major in a particular discipline.

The need for a serious study of American civilization goes beyond a recognition of the influence our culture exerts on the world to an increasing awareness that, within our national confines, the integrity and coherence of this culture faces serious threats. The discipline of American Studies is shaped by the culture itself: its ethnic, religious, regional, social, and economic variety and complexity; its tendency to thrive in crisis and conflict; and a contradictory, paradoxical thrust which so often renders it elusive of definition.

The American Studies Program attempts to balance trends toward specialization with a curriculum that looks at the whole of American society, examining issues, ideas and values rooted in the American experience in order to gain a more comprehensive and discriminating perspective of American civilization. It recognizes the role of religion, education, economics, and manners and mores in shaping American institutions and laws, and in determining the actions of its members. It stresses the importance of intellectual and social thought in the dynamics of American civilization. It also recognizes the legitimacy of studying popular culture for vital clues to understanding American life as well as the imperative need to relate that study to art, architecture, music, and literature.

To achieve these objectives, the program incorporates course work in areas particularly relevant to the study of American civilization: history, sociology, philosophy, literature, economics, education, geography, speech, political science, psychology, art, and music. Special American Studies courses, two in American Life and Thought, as well as two seminars, provide the framework for insuring an interdisciplinary approach. The seminars are designed to make use of professors from various disciplines, and to offer the student the opportunity for the independent study of problems in and aspects of American culture of particular concern to him.

CAREER POSSIBILITIES IN AMERICAN STUDIES

CAREER OPPORTUNITIES:

1. Government Service
2. Preparation for law school
3. Journalism and free-lance writing
4. Preparation for Graduate study in library science (background)
5. Museum and Historical Societies
6. Public Relations
7. Preparation for Graduate School

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF ARTS DEGREE IN AMERICAN STUDIES

REQUIRED COURSES:

American Life I
American Life II
American Literature I
American Literature II
American Philosophy
History of U.S. to 1877
History of U.S. Since 1877
American Government
American Studies Seminar I
American Studies Seminar II

RELATED ELECTIVES: 38 semester hours

ANTHROPOLOGY

The concentration major in Anthropology provides the student with a comprehensive introduction to the principal divisions of anthropological study: Physical Anthropology, Archaeology, and Ethnology. The studies in Physical Anthropology include an examination of the fossil evidence of primate evolution, including that of the human species, comparative data from field studies of the non-human primates, and an introduction to human genetics and variation.

The studies in archaeology include investigation of the theory and method of reconstructing the evolution of prehistoric and historic cultural systems, together with a practical introduction (during the summer field schools) to the methods of archaeological site location, survey, excavation and laboratory processing of materials in the California State College Center for Historic and Prehistoric Archaeology laboratory.

Ethnology is the examination of the native cultures of North and South America, Africa, Oceania, and Asia in both areal surveys and in comparative studies.

For the student seeking a broad educational background, the acquisition of an anthropological perspective provides a vantage point from which he may link the various materials of geology, geography, botany, and zoology with those of history, economics, sociology, art, music, and philosophy, in a broad, integrated view of the origins, evolution, and functions of human ecological systems.

Students electing this major may prepare themselves for positions in state museums, federally and state-funded archaeological salvage and recovery projects, research work with state geological surveys, soil conservation districts, and state and federal museums.

This program has successfully prepared students for graduate work in some of the leading universities of the nation. Several graduates of the program have found permanent positions in Pennsylvania, Virginia, West Virginia, Florida,

and Illinois, where they are engaged in teaching archaeological survey and excavation as well as in the publication of their work.

With the new legal requirement that strip mining permits, highway projects, and large building projects involving Federal funds require archaeological and historical impact statements, a large number of positions for those prepared in the techniques of archaeological survey and reporting may be anticipated.

CAREER POSSIBILITIES IN ANTHROPOLOGY

CAREER OPPORTUNITIES:

1. Archaeologists: excavation supervisors
2. State Archaeologists
3. Museum Para-Professionals, curators
4. State Geological Surveys
5. United States Geological Survey staff Archaeologists
6. United States Parks service: staff archaeologists, Monuments staff, guides.
7. United States State environmental impact surveyors for soil conservation services, army corps of engineers, etc.
8. State Department foreign service preparation
9. State historical preservation departments: staff archaeologists
10. Pan American Union fellowships in anthropology, archaeology
11. Peace Corps.
12. Anthropology: American Friends' Service Latin American staff
13. Graduate School preparation

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF ARTS DEGREE IN ANTHROPOLOGY

REQUIRED COURSES:

Principles of Anthropology
History of Anthropology
World Ethnology
Field School or Woodland Archaeology
Principles of Sociology

MAJOR ELECTIVES: 21 semester hours

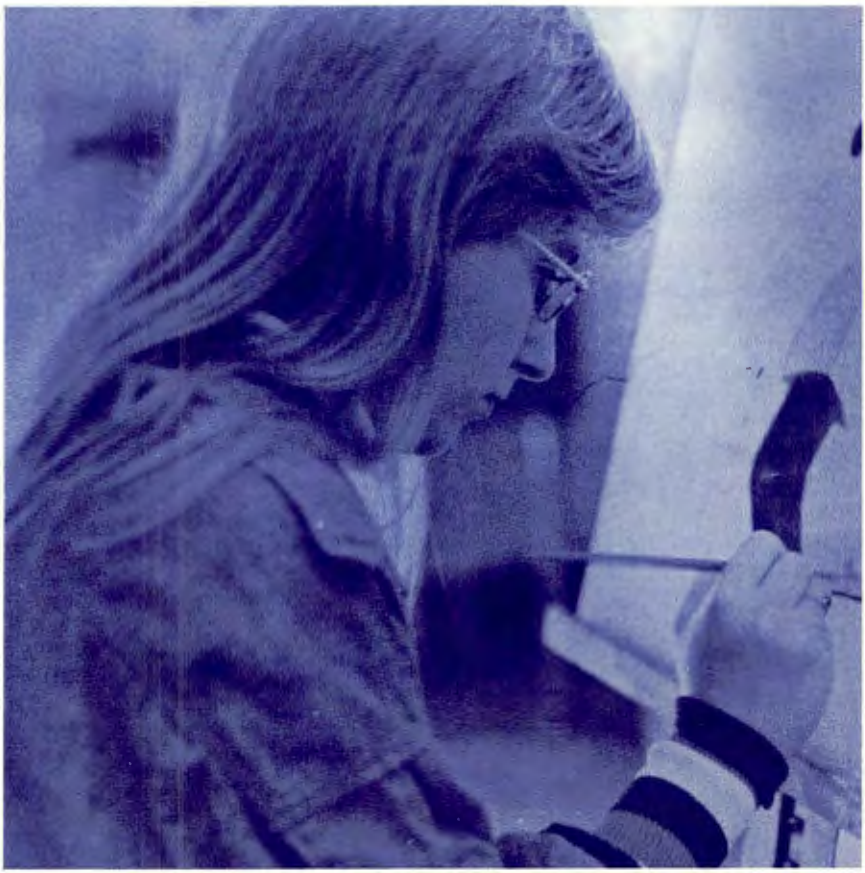
RELATED ELECTIVES: 32 semester hours

ART

The Bachelor of Arts degree program in Art if designed to introduce students to the visual arts as a means of expression and communication. The student is exposed to some of the history, traditions, and methods of the fine arts and to practical problems of materials and techniques in the various fine arts media. He is given conceptual and technical development in a variety of specializations.

The Art program is highly flexible, and the course of study for each student depends largely upon individual interest and future plans. In order to assist the student in program development and course selection, an Art Department adviser is assigned to the student during the first semester of enrollment. The student and his adviser discuss the student's relative interests in design, drawing, painting, sculpture, weaving, ceramics printmaking, and fabrics and determine which of these areas the student wants to study in depth. Keeping in mind the student's talents and career goals, they use the flexibility of the program to design the best set of emphases for that student.

Specific educational objectives toward career opportunities are: a) to provide preparation for graduate study; b) to provide sufficient background for those who have the ability and creative awareness to face the economic pressures confronting the full-time artist; c) to provide a foundation for students who wish to study art as an essential part of their personal and cultural development, and d) to explore avenues of teaching art outside the realm of public education.



CAREER POSSIBILITIES IN ART

CAREER OPPORTUNITIES:

1. Art instructor in areas other than the public school classroom.
2. Independent artist.
3. Preparation for Graduate Studies in Art.

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF ARTS DEGREE IN ART

REQUIRED COURSES:

Art History I
Art History II
Design
Drawing

MAJOR ELECTIVES: 24 semester hours

RELATED ELECTIVES: 32 semester hours

Humanities Electives — 15 semester hours

Additional Electives — 17 semester hours

BIOLOGY

The Biology program is an intensive scientific curriculum which prepares students for medical school, dental school, various health related studies, graduate work in the biological sciences, and career work in many biologically related areas. The major emphasis of this program is to provide the student with a broad scientific core of courses, including studies in chemistry, physics, mathematics, and biology.

Each student will have the opportunity to select a wide range of biological elective courses which best fulfills his need for future work or graduate study. Scientific theory is integrated into the laboratory portion of each course so that a student learns critical scientific thinking and attains the ability to manipulate many biological instruments and various organisms.

The Department of Biological Sciences of California State College is housed in a modern, multi-million dollar teaching and research facility equipped with the latest in design, materials, and instrumentation. Specialized areas for student and faculty research — an herbarium, a museum, live animal colonies, a greenhouse, an electron microscope, and a radiation laboratory — all complement this fine classroom-laboratory structure.

CAREER POSSIBILITIES IN BIOLOGICAL SCIENCE

CAREER OPPORTUNITIES:

1. Medical School
2. Dental School
3. Industrial Research in Biology

4. Graduate School preparation
5. Medical Illustrator
6. Governmental Research
7. Pharmacy School
8. Public Health
9. Health Related Fields

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF SCIENCE DEGREE IN BIOLOGY

REQUIRED COURSES:

Principles of Biology
Botany I
Zoology I
Botany II OR Zoology II
General Chemistry I
General Chemistry II
Organic Chemistry I
Physics I (Introductory)
Physics II (Introductory)
Calculus I

MAJOR ELECTIVES: 19–25 semester hours

RELATED ELECTIVES: 0–6 semester hours

CHEMISTRY

The program in chemistry, leading to the Bachelor of Science degree, focuses upon studies of the nature and structure of matter and provides a strong foundation in the fundamentals of chemistry, physics and mathematics. Upon successful completion of this program, the graduate is qualified to assume a position as a chemist in either the private or public sector. Program graduates should also be well prepared to commence graduate studies leading to the M.S. or Ph.D. in chemistry.

Chemistry majors pursuing the B.S. degree must complete 45 credits in required courses and 23 credits in restricted electives which must be approved by the student's departmental adviser. Five of the latter credits must be earned from additional course work in chemistry, while the remaining eighteen credits may be accrued through course work in other natural sciences.

Through consultation with his adviser, the student will obtain information which will guide him toward a proper selection of electives in general education. Such a judicious selection of electives based upon the student's objectives may help to promote additional career opportunities upon graduation and also satisfy the admissions standards of various professional and graduate schools. Some graduates have thus chosen to continue their educations or to pursue careers in medicine, dentistry, pharmacy, management, college teaching, and research.

CAREER POSSIBILITIES IN CHEMISTRY

CAREER OPPORTUNITIES:

1. Analytical Chemist
2. Quality Control Specialist
3. Chemical Industry Sales
4. Industrial Management Trainee
5. Technical Writer
6. Chemical Purchasing Agent
7. Research and Development (with advanced degree)
8. Preprofessional training in Medicine, Dentistry and Law
9. Graduate School preparation

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF SCIENCE DEGREE IN CHEMISTRY

REQUIRED COURSES:

General Chemistry I
General Chemistry II
General Chemistry III
Analytical Chemistry I
Organic Chemistry I
Organic Chemistry II
Physical Chemistry I
Physical Chemistry II
Calculus I
Calculus II
Physics I
Physics II

MAJOR ELECTIVES: 5 semester hours

RELATED ELECTIVES: 18 semester hours

ECONOMICS

Economics is a multi-purpose program, providing the major with a liberal arts background while taking him through a detailed examination of the behavior of people as both producers and consumers. The student, as he becomes an economist, begins to concern himself with the process by which human wants are satisfied through productive activities. So that he may understand the relationship among social, political and economic institutions, he is required to study broadly in the other social sciences at the same time he is studying economic issues in depth.

Upon completion of the Economics Program a student may enter a number of different graduate programs that include – but are not limited to – the following: Law School, Public Administration, Business Administration, Hospital Administration, Institutional Administration, Labor Relations, Industrial Management, and Economics.

Many Economics students choose to bypass graduate school and enter the labor market immediately following graduation. Employment opportunities are as varied as graduate school opportunities, even though the Economics curriculum does not concentrate on providing those job skills in the way that Administration and Management does. The objective in the Economics program is to provide a general background in the liberal arts and to develop an understanding of the real economic problems that all nations face. This approach has been found acceptable to many employees in business, industry, and government.

CAREER POSSIBILITIES IN ECONOMICS

CAREER OPPORTUNITIES:

1. Government Research
2. Government Administration
3. Graduate School Preparation
4. Business
5. Employee Relations

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF ARTS DEGREE IN ECONOMICS

REQUIRED COURSES:

Introductory Micro Economics
Introductory Macro Economics
Money and Banking
Intermediate Micro Theory
Intermediate Macro Theory
Elementary Econometrics
Statistics
World Culture

MAJOR ELECTIVES: 18 semester hours

RELATED ELECTIVES:

Psychology — 6 semester hours
Political Science — 6 semester hours
Sociology — 3 semester hours
History — 6 semester hours
Geography — 3 semester hours

ENGLISH

The English program provides the basis for a liberal education and prepares majors for advanced graduate work, literary scholarship, and careers in a number of diverse fields.

The program requires 68 credits. To insure some of the coverage traditionally associated with a major, the following 33 credits in English at the

300–500 level are restricted electives: one course each in English Literature prior to 1800, English Literature after 1800, and American Literature; three 300 courses; and three 400 courses. The only required course is Independent Studies (3 credits). The remainder of the program is made up of 32 credits in Humanities.

The Department of English feels that a student majoring in English should have a broad acquaintance with other fields of human interest. Basic courses in philosophy, history, the social and natural sciences, fine arts, and foreign languages and literature contribute to this acquaintance. The Department recommends that its majors elect further courses in several of these fields.

The freedom of this undergraduate program allows for much personal initiative; yet the more flexibility one has in constructing a program, the more he is responsible to himself for planning an integrated and meaningful course of study. One must ask himself, "What do I want from my undergraduate education?" As in the case of choosing a school, the student should select a program that offers the greatest intellectual rewards and challenges. When the choices are difficult, a faculty adviser can help him, but for the most part the responsibility is his.

CAREER POSSIBILITIES IN ENGLISH

CAREER OPPORTUNITIES:

1. Newspaper reporter
2. Company Magazine Editor
3. Writer
4. Public information Assistant
5. Advertising Researcher
6. Communications Specialist
7. Radio and Television Editor
8. Employment interviewer
9. Graduate School preparation

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF ARTS DEGREE IN ENGLISH

REQUIRED COURSE:

Independent Studies in English

MAJOR ELECTIVES: 33 semester hours

RELATED ELECTIVES: 32 semester hours

ENVIRONMENTAL STUDIES

Most contemporary environmental issues can best be analyzed through interdisciplinary approaches that transverse conventional academic disciplines. With this concept as a focal point, the School of Arts and Sciences has developed an interdisciplinary Environmental Studies program. Now approximately three years in existence, this program currently has over 190 under-

graduate majors within its three distinct specializations: environmental science, nature conservation, and management of non-renewable resources. These specializations offer B.S. and B.A. degrees and involve core courses which focus upon environmental problems from a scientific, socioeconomic, political, and cultural viewpoint.

In addition, required courses include offerings from biology, wildlife biology, botany, ecology, geology and earth sciences, geography, cartography, meteorology, chemistry, mathematics, physics, and economics. Senior projects often involve gathering field data on environmental topics (such as water pollution) in preparation for an extensive scientific paper.

The environmental studies program relies heavily upon California State College's association with the Marine Science Consortium, a successful organization of approximately 15 colleges and universities from the Eastern United States with teaching and research operations at Lewes, Delaware, and Wallops Island, Virginia. Students may take courses there for college credit during summer sessions; both instructors and students have ready access to marine environments (coastal and oceanic) that do not exist in southwestern Pennsylvania.

Recent graduates have succeeded in graduate schools as well as in industry, in utilities, and in state and federal positions as interpretive naturalists and park and recreation employees.

The 1970's began with many colleges and universities attempting to address themselves to crucial environmental issues in their course offerings. California State College has developed viable environmental studies programs that are fulfilling this obligation.

CAREER POSSIBILITIES IN ENVIRONMENTAL SCIENCE

CAREER OPPORTUNITIES:

1. Industry: Air Pollution Control Monitors; Coal Industry
2. Chemical Sales: Water Analysis Technology
3. Federal, State, County positions involving Environmental Health
4. Environmental Impact Statement Preparation
5. Laboratory Technician – Air and Water Quality Control
6. Preparation for Graduate School

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF SCIENCE DEGREE IN ENVIRONMENTAL SCIENCE

REQUIRED COURSES:

Man and His Environment
Principles of Biology
General Chemistry I
General Chemistry II
Economics
Calculus I
General Geology
Physics I
Physics II
Meteorology

MAJOR ELECTIVES: Two Environmental Studies Seminars

RELATED ELECTIVES: 27 semester hours

CAREER POSSIBILITIES IN MANAGEMENT OF NON-RENEWABLE RESOURCES

CAREER OPPORTUNITIES:

1. Federal Mining Inspector
2. Industrial Sales: Geology and Oceanographic Equipment
3. Preparation for Graduate School
4. Federal, State, Local Governmental Agencies that are of impact on the environment.
5. Laboratory Technician: Coal gasification projects
6. Industrial research and exploration of new energy sources.

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF ARTS DEGREE IN MANAGEMENT OF NON-RENEWABLE RESOURCES

REQUIRED COURSES:

Man and His Environment
Physical Geology
Contemp. Probs. Geography: Manage. Non-Renew. Res.

Economic Geology
Economic Geography
College Algebra
General Chemistry I
General Chemistry II

MAJOR ELECTIVES: Two Environmental Studies Seminars

RELATED ELECTIVES: 37 semester hours

At least one from the following:

Field Methods in Geology
Remote Sensing in Geology
Air Photo Interpretation
Cartography

Strongly Recommended:

Principles of Biology
Economics I
Environmental Economics
Statistics
Biotic Communities
Oceanography
Urban History

CAREER POSSIBILITIES IN NATURE CONSERVATION

CAREER OPPORTUNITIES:

1. Interpretative Naturalist: Federal, State, County Park Systems
2. Environmental Protection Specialist: County Agency
3. County Soil Conservation District Officer
4. Private Industry: Field Technician for Environmental Impact Preparation
5. Fish Commission and Game Commissioner (state, federal)
6. Preparation for Graduate School

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF ARTS DEGREE IN NATURE CONSERVATION

REQUIRED COURSES:

Man and His Environment
Environmental Conservation
Environmental Interpretation
Developing Trails & Museums
Game & Habitat Management
Wildlife Techniques
Environmental Research Problems
Conservation of Outdoor Living
Zoology I
Zoology II

Botany II
General Chemistry I
General Chemistry II
College Algebra
Biotic Communities
Human Ecology
General Geology

MAJOR ELECTIVES: Two Environmental Studies Seminars

RELATED ELECTIVES: 6 semester hours

GEOGRAPHY

The geography program provides students a varied selection of courses and geographic experiences, including the human, physical, political and economic dimensions of the discipline. The program's flexibility permits the student, working with his adviser, to get training in depth in his major areas of interest. Presently, most geography students continue their education in specialized areas in graduate school. Many others, however, move into employment with the federal government. The Geography major is designed to give each student maximum freedom in co-ordinating his college program with desired objectives.

The geography program also allows the student to participate in internships in industry, government, and social agencies, receiving college credit for his work.

Geography affords the graduate the opportunity to work in the public and private sectors in jobs commonly defined as applied geography. Graduates may work for government agencies, industries, and regional or urban planning offices as cartographers, economic geographers, regional specialists, resource managers, location analysts, or demographers. Recent published projections of existing trends show that geography will continue to offer its graduates a wide variety of career opportunities.

CAREER POSSIBILITIES IN GEOGRAPHY

CAREER OPPORTUNITIES:

1. Government Service
2. Urban & Regional Planning
3. Industrial & Commercial Planning
4. Marketing Specialist
5. State Agencies
6. Graduate School preparation

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF ARTS DEGREE IN GEOGRAPHY

REQUIRED COURSES:

Human Geography
Physical Geography

Urban Geography
Economic Geography
Cartography
Seminar OR Research Project

MAJOR ELECTIVES: 11–23 semester hours

RELATED ELECTIVES: 27–39 semester hours

GEOLOGY

In these days of environmental concern and the need for developing new energy sources, career opportunities in the geological sciences are excellent. In addition, projections of future needs indicate that the number of specialists in these disciplines must be greatly increased over the next ten to fifteen years.

The Geology program at California State College is currently offered in the Department of Geography and Earth Science. A wide range of geology offerings allows the student maximum freedom to pursue a program that will lead to a B.S. degree in geology. The geology staff and students work closely with the Physical Science and Biological Science Departments, and are active in the Environmental Studies and other interdisciplinary programs.

Besides the course work offered on campus, California's membership in several cooperative groups allows our students access to some truly unique learning and research opportunities. Most prominent of these groups are the Marine Science Consortium at Wallops Island, Virginia, and Lewes, Delaware, and the Penn Soil Conservation Education Center at Sandy Lake, Pennsylvania.

A major in geology allows the student to move immediately into employment with government and environmental agencies. Many industries employ geologists as permanent consultants. Our graduates have also obtained employment with cement companies, highway departments, and sand and gravel operations, and in mining, water analysis and coastal surveys.

Graduate scholarships are readily available to students with high academic achievement. More than half of our graduates go on to graduate school.

CAREER POSSIBILITIES IN GEOLOGY

CAREER OPPORTUNITIES:

1. State Government
2. Federal Government
3. Consulting Companies
4. Industrial Companies
5. Environmental Agencies
6. Water Analysis
7. Agricultural Agencies
8. Graduate School preparation

to see the relationship between mathematics and other sciences. Also, the student may elect to take a number of computer science courses, enabling him to interweave mathematics with computer science. Moreover, a student in the mathematics program may, if selected, participate in the cooperative work program with the Defense Department. (See Mathematics and Computer Science Program for more details.)

Finally, this program is designed to provide the student with an excellent background for graduate studies in mathematics and for employment in business, industry and government. Career opportunities exist in computer programming and related mathematics, operations research, statistics, applied mathematics, mathematics in government, and actuarial work.

CAREER POSSIBILITIES IN MATHEMATICS

CAREER OPPORTUNITIES:

1. Public School Teacher
2. Graduate Mathematics Education
3. Graduate Mathematics
4. Mathematics Supervisor
5. Computer Programmer
6. Actuary
7. Statistician
8. Graduate Computer Science
9. Operations Research
10. Engineering
11. Industrial Consultant
12. Salesman (technical)
13. Biostatistician

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF ARTS DEGREE IN MATHEMATICS

REQUIRED COURSES:

Calculus I
Calculus II
Calculus III
Calculus IV
Geometry
Abstract Algebra I
Linear Algebra I
Statistical Analysis I
Differential Equations
Advanced Calculus I
Advanced Calculus II
Topology

RELATED ELECTIVES: 32 semester hours

Physics and/or Chemistry – 12 semester hours

Additional Natural Science Electives – 20 semester hours

MATHEMATICS AND COMPUTER SCIENCE

The program leading to the Bachelor of Science degree in Mathematics and Computer Science is a careful blending of courses which offers the student the theory and application of problems in mathematics and computer science. A demanding but versatile program, it permits the student with a deficiency in mathematics to take introductory courses to provide him with sufficient background to effectively take courses in his area of concentration. Although the introductory courses do not count in his area of concentration, they do count as free electives in his program.

Advisers are assigned to all students in this program. The adviser works carefully with the student to select courses best suited to the student's interest and goals. A student's problems may be discussed with the adviser at any time.

Student work assignments are available for those who desire and qualify for employment. The student may assist in the mathematics department or at the computer center. Hence, the student learns while he earns.

Students in this program have the opportunity to receive hands-on experience in working with the computer. In this manner the student is able to comprehend programming and computer operations. By carefully selecting courses, the student may choose a program in business or science, or both. A cooperative work program has been established with the Defense Department, whereby a junior, if selected, may work at the Pentagon under Civil Service salary guidelines while receiving college credit.

Finally, this program is designed to prepare the student for continued study at the graduate level or for employment in business, industry, and government in computer operations, computer programming, systems analysis, or computer equipment analysis, or as a computer specialist in research, analysis, information storage and retrieval, or computer sales.

CAREER POSSIBILITIES IN MATHEMATICS AND COMPUTER SCIENCE

CAREER OPPORTUNITIES:

1. Computer Programmer
2. Computer Operator
3. Computer Systems Analyst
4. Computer Equipment Analyst
5. Computer Sales
6. Graduate Work in Computer Science
7. Operations Research
8. Business Administration

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF SCIENCE DEGREE IN MATHEMATICS AND COMPUTER SCIENCE

REQUIRED COURSES:

Calculus I
Calculus II

Calculus III
Calculus IV
Differential Equations
Statistical Analysis I
Linear Algebra I
Computer Science I
Computer Science II
Assembler Language Programming
Numerical Analysis
Structures of Program Languages

Math Electives from the following – 6 semester hours

Statistical Analysis II
Linear Algebra II
Math of Finance II

Computer Science Electives from the following – 6 semester hours

Introduction to COBOL
Information Structures
Systems Analysis
Special Topics in Computer Science
Logic & Switching Theory of the Computer
Computer Operations
Computer Aided Instruction

RELATED ELECTIVES: 20 semester hours

MEDICAL TECHNOLOGY

The Department of Biological Sciences offers basic training in Biology leading to the Bachelor of Science degree in Medical Technology.

This program involves a three-year program on campus, and one year (12 months) at an approved affiliated school of Medical Technology or one acceptable to California State College.

California State College is affiliated with the following schools of Medical Technology:

Allegheny General Hospital	– Pittsburgh, Pa.
Altoona Hospital	– Altoona, Pa.
Mercy Hospital	– Pittsburgh, Pa.
St. Vincent Hospital	– Erie, Pa.
Washington Hospital	– Washington, Pa.
West Penn Hospital	– Pittsburgh, Pa.

The medical technologist holds the key to quality performance in the laboratory. The broad background obtained in college science and clinical laboratory training provides the necessary ingredients for professional responsibilities. The medical technologist works with method and with speed, using chemicals, reagents, and complex instruments. He is in a key position and, as a Chief Medical Technologist, is also a supervisor, a teacher, and a research assistant.

Most medical technologists today are women, but more and more young men are entering the field. Their opportunities are as unlimited as the horizons of research and preventive medicine.

Medical technologists work in blood banks, in various areas of microbiology, parasitology, chemistry, serology, urinalysis, and in hematology.

CAREER POSSIBILITIES IN MEDICAL TECHNOLOGY

CAREER OPPORTUNITIES:

1. Medical Technologist
2. Graduate School in Biology
3. Dental School
4. Medical School
5. Medical Sales
6. Hospital Administration

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF SCIENCE DEGREE IN MEDICAL TECHNOLOGY

REQUIRED COURSES:

Zoology I
Zoology II
Human Anatomy OR Comparative Vertebrate Anatomy
Animal Physiology
Microbiology
College Algebra
General Chemistry I
General Chemistry II
Organic Chemistry I
Analytical Chemistry I
Approved School of Medical Technology (29 semester hours)

STRONGLY RECOMMENDED AS GENERAL STUDIES ELECTIVES:

Principles of Biology
Botany I
General Physics for Med Tech
Genetics
Parasitology
Organic Chemistry II

MODERN LANGUAGES: FRENCH, GERMAN, SPANISH

The Modern Language programs are Humanities programs with a specialization in French, German or Spanish. Each language specialization requires a minimum of 24 credit hours beyond the elementary level for the Bachelor of Arts degree. The student may study one or a combination of languages. A limited number of courses are available in languages other than the three major offerings. All of these programs emphasize development of the four

skills of listening, speaking, reading, and writing. A modern language laboratory is used in conjunction with most courses.

Historically, the language barrier has hindered efforts to exchange ideas; it remains a major obstacle to greater international harmony. In a shrinking world community of jet travel and communications satellites, language study becomes increasingly important. It is a key to better human understanding.

In addition to its more obvious academic uses, including entrance to and success in graduate school, a foreign language has practical, everyday uses. A firm grasp on a modern foreign language can be a door-opener to travel opportunities, to a job, to an understanding of world problems. Fluency in one or more foreign languages is a requisite for the Foreign Service. Working knowledge of a language other than English is a tremendous aid in obtaining overseas employment with an American business firm, where jobs exist in professional, managerial, technical, secretarial, sales, and numerous other fields.

CAREER POSSIBILITIES IN FRENCH

CAREER OPPORTUNITIES:

1. Foreign Service
2. Import-Export Houses
3. Bilingual Secretary
4. Airlines
5. Travel Agencies
6. United States Firms Abroad
7. Hotel-Motel work
8. Graduate School Preparation
9. Translator

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF ARTS DEGREE IN FRENCH

REQUIRED COURSES:

Intermediate French I
Intermediate French II
French Comp. & Conversation
French Comp., Conversation & Phonetics
Culture & Civil. of France I
Culture & Civil. of France II
French Literature I
French Literature II

RELATED ELECTIVES: 44 semester hours

A minimum of three credit hours from each of the following fields for a total of twenty-one semester hours:

Philosophy
Fine Arts

Literature
Speech
Theatre

Additional Electives: 23 semester hours

CAREER POSSIBILITIES IN GERMAN

CAREER OPPORTUNITIES:

1. Foreign Service
2. Import-Export Houses
3. Bilingual Secretary
4. Airlines
5. Travel Agencies
6. United States Firms Abroad
7. Hotel-Motel Work
8. Graduate School preparation
9. Translator

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF ARTS DEGREE IN GERMAN

REQUIRED COURSES:

Intermediate German I
Intermediate German II
German Comp. & Conversation
German Comp., Conversation & Phonetics
Culture & Civil. of Germany I
Culture & Civil. of German II
German Literature I
German Literature II

RELATED ELECTIVES: 44 semester hours

A minimum of three credit hours from each of the following fields for a total of twenty-one semester hours:

Philosophy
Fine Arts
Literature
Speech
Theatre

Additional Electives: 23 semester hours

CAREER POSSIBILITIES IN SPANISH

CAREER OPPORTUNITIES:

1. Foreign Service
2. Import-Export Houses
3. Bilingual Secretary
4. Airlines

5. Travel Agencies
6. United States Firms Abroad
7. Hotel-Motel Work
8. Graduate School preparation
9. Translator

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF ARTS DEGREE IN SPANISH

REQUIRED COURSES:

Intermediate Spanish I
Intermediate Spanish II
Spanish Comp. & Conversation
Spanish Comp., Conversation & Phonetics
Culture & Civil. of Spain I
Culture & Civil. of Spain II
Spanish Literature I
Spanish Literature II

RELATED ELECTIVES: 44 semester hours

A minimum of three credit hours from each of the following fields for a total of twenty-one semester hours:

Philosophy
Fine Arts
Literature
Speech
Theatre

Additional Electives: 23 semester hours

PHILOSOPHY

The word philosophy comes from two Greek words that mean love and knowledge. Anyone who enjoys discovering knowledge might be called a philosopher, and thus the word was used originally. As man accumulated more and more information about himself and the world, learning became organized into special disciplines. In modern times, philosophy has come to be the academic discipline which studies critically the nature and development of different kinds of knowledge and attempts to relate these different kinds of beliefs to form a general, workable view of reality. In short, philosophy deals with questions like "What do we really know, and how do we know it? What is the ultimate nature of reality? What is morally right, and how should we live?" Typically, the philosophy student studies the history of man's basic views about knowledge and the world and develops logical skills that will help him deal with specific philosophical issues relevant to his life.

Though the chief reward in studying philosophy is the exercise of one's curiosity, the philosophy graduate has a number of career potentials. The philosophy major develops critical reasoning and writing skills and an ability

to analyze problems from a variety of perspectives. These talents equip one for a broad range of positions in business and government. Depending upon one's interests, the study of philosophy can be excellent preparation for post-graduate study in law or business schools. Teaching positions in philosophy are, however, usually limited to colleges and universities, which normally require the Ph.D. Degree.

With a diversified faculty capable of serving the special needs of the student, and with most classes organized on a small-group basis, students find that they can develop their potential in a setting that emphasizes curiosity rather than competition. Students are encouraged to develop secondary interests that supplement their philosophical studies and are frequently counseled about how to develop their programs of study. The major program is designed to provide a broad background in the primary areas of philosophy while allowing the student to explore in depth particular issues of special concern to him.

It is recommended that Philosophy majors have a strong second area related to their philosophical interests (e.g. art, history, literature, or a particular science coupled with mathematics) and that all majors take some laboratory course. It is also recommended that those majors planning to seek a graduate degree in philosophy take at least two years of German, French, or Russian.

CAREER POSSIBILITIES IN PHILOSOPHY

CAREER OPPORTUNITIES:

1. Preparation for Law School
2. Pre-professional training for teaching philosophy and for Careers in Religion and Religious Education
3. Careers in Business
4. Careers in Government
5. Graduate School preparation

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF ARTS DEGREE IN PHILOSOPHY

REQUIRED COURSES:

Logic and Language
History of Ancient Philosophy
16th to 18th Century Philosophy

MAJOR ELECTIVES: 21 semester hours

Two courses in each of the following areas of Philosophy:

Historical
Normative
Methodological

One additional course from one of the above areas.

RELATED ELECTIVES: 38 semester hours

PHYSICS

The program leading to the Bachelor of Science degree in Physics offers the student a variety of choices which may be tailored to his needs. Above the required three semesters of college Physics and two semesters of calculus, the student must take a total of 50 credits. Twenty-four of these credits must be in physics and twenty-six of them may be in related courses, including chemistry, mathematics, biology, and geology. From the physics curriculum the student may choose between a diversity of courses in classical and contemporary physics, including such courses in applied physics as radiation and optics, plasma physics (e.g. Quantum Mechanics), Special and General Relativity, and Astrophysics. Advanced labs include facilities for studies in photometry, holography, the Mossbauer Effect, X-ray diffraction, and digital electronics.

The flexibility of the program allows the graduate to equip himself for many occupations, including entrance to an advanced degree program in physics or engineering, and technical or research positions with industry or government. The programs also serve as excellent training for entrance to professional schools.

CAREER POSSIBILITIES IN PHYSICS

CAREER OPPORTUNITIES:

1. Research and Development — Industrial and Governmental Positions
2. Technical Sales
3. Technical Writing
4. Technical Management Trainee
5. Preprofessional Training for Medicine, Dentistry, and Law
6. Health Professions positions: Health Physics (with advanced degree)
7. Medical Engineer (with advanced degree)
8. Graduate School preparation

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF SCIENCE DEGREE IN PHYSICS

REQUIRED COURSES:

College Physics I
College Physics II
College Physics III
Calculus I
Calculus II

MAJOR ELECTIVES: 24 semester hours

RELATED ELECTIVES: 26 semester hours

POLITICAL SCIENCE

The Political Science program is designed to achieve three major objectives:

First, to prepare those who intend to pursue academic goals beyond the undergraduate level, whether in law school, in public administration, or in teaching;

Second, to help students achieve a level of intellectual proficiency which will contribute to a successful career in many areas of governmental service and business;

Third, to contribute to a broad liberal education that affords students the opportunity to discover the significance of political inquiry as an intellectual discipline. It is hoped that the relationship of political science to other academic disciplines such as the physical sciences, humanities, and other social sciences will be impressed upon the student.

Accordingly, the program stresses both specialization and interdisciplinary studies. Other social sciences are required as well as the standard minimal 36 hours of Political Science. Required courses in Psychology, Anthropology, Sociology, History, Economics and Geography contribute to the multidisciplinary approach — a necessary requisite for the understanding of politics. Advisement is important in that faculty advisers can impress upon students the desirability of acquiring at least a nodding acquaintance with other disciplines such as Philosophy, Mathematics, English, Foreign Languages, and the Physical Sciences, which can be taken as part of the General Studies elective system.

The Political Science curriculum itself stresses the diverse sub-specialities which comprise the discipline, offering courses in Theory, Public Administration, Political Behavior, Comparative Politics, International Studies, American Politics, and Legal Institutions. It is recommended that the student eschew parochial tendencies and try to select courses which cover the broad scope of the discipline.

CAREER POSSIBILITIES IN POLITICAL SCIENCE

CAREER OPPORTUNITIES:

1. Civil Service (federal, state, local — domestic and foreign affairs)
2. Governmental Career
3. Journalism
4. Pre-law Training
5. Graduate School preparation

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF ARTS DEGREE IN POLITICAL SCIENCE

REQUIRED COURSES:

Introduction to Political Science
American Government
General Psychology
Principles of Anthropology

Principles of Sociology
History U.S. to 1877
History U.S. since 1877
European Life & Society to 1815
European Life & Society since 1815
Introductory Micro Economics
Introductory Macro Economics
Introduction to Geography

MAJOR ELECTIVES: 30 semester hours

RELATED ELECTIVES: 2 semester hours

PROFESSIONAL WRITING PROGRAM

The Professional Writing Program is designed to prepare students to enter the professional writing field in one or more of four areas: Creative Writing, Journalism, Radio-Television, and Scientific-Technical Writing. The program will allow a student to specialize in one of these writing areas and will allow him sufficient opportunity to acquire additional skills in related subject matter. In the interest of academic balance, the curriculum is designed to make certain that the student receives a broad education. Within the area of concentration requirements, provisions for internship credit, electives in a related discipline, and distributed electives allow the student to plan a program suited to his particular career goals.

The program will allow a student who has completed work at a community college to apply basic writing credits to the program, thus permitting him to complete the program within two years. The provision for some hours of internship credits will also facilitate this transition, especially for the student who has been employed in some capacity involving writing responsibilities in addition to some prior formal study.

This Professional Writing Program sees the student as one who must become aware of those qualities of clarity, conciseness, and style that constitute competent writing. He must also be able to master basic writing formats and the intricacies and jargon of his chosen field of concentration, be it professional writing in business, science-technology, journalism, radio-television, or creative writing.

Students will get a broad liberal education and thorough professional instruction. The highest professional standards are maintained in the classroom. In addition to sound educational background, faculty members have had extensive professional experience in all areas of writing.

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF ARTS DEGREE IN PROFESSIONAL WRITING (EMPHASIS ON CREATIVE WRITING)

REQUIRED COURSES:

Advanced Writing
Independent Study in Writing

Seminar in Writing
Creative Writing: Fiction
Creative Writing: Poetry
Adaptation of Literary Materials
Article Writing
Advertising
Publishing the Literary Magazine
Studies in Writing

RELATED ELECTIVES: 38 semester hours

Creative Writing: Drama OR Playwriting

3 semester hours from the following:

Journalism I
Business Writing I
Scientific and Technical Writing
Essay Writing

Related Discipline: 16 semester hours

(In addition to the courses above, 16 hours in an approved academic discipline. Program must be approved by the department involved.)

Internship OR Additional Electives from any area: 16 semester hours

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF ARTS DEGREE IN PROFESSIONAL WRITING (EMPHASIS ON SCIENTIFIC AND TECHNICAL WRITING)

REQUIRED COURSES:

Advanced Writing
Independent Study in Writing
Seminar in Writing
Scientific & Technical Writing I
Scientific & Technical Writing II
Business Writing I
Business Writing II
Article Writing
Advertising
Studies in Writing

RELATED ELECTIVES: 38 semester hours

6 semester hours from the following:

Journalism I
Essay Writing
Creative Writing: Fiction
Creative Writing: Poetry
Creative Writing: Drama
Playwriting (THE)
Publishing the Literary Magazine
Any writing course

Related Discipline: 16 semester hours

(In addition to the courses listed, the student will have 16 hours in a related discipline, chosen from the Natural Sciences or Science and Technology programs, to be approved by the department of this related interest.)

Internship OR Additional Electives from any area: 16 semester hours

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF ARTS DEGREE IN PROFESSIONAL WRITING (EMPHASIS ON PRINT JOURNALISM)

REQUIRED COURSES:

Advanced Writing
Independent Study in Writing
Seminar in Writing
Journalism I
Journalism II
Journalism III (editing)
Article Writing
Advertising
Studies in Writing

RELATED ELECTIVES: 41 semester hours

6 semester hours from the following:

Playwriting (THE)
Radio and TV Writing: News and Commercial (SPE)
Radio and TV Writing: Dramatic Script (SPE)
Adaptation of Literary Materials
Publishing the Literary Magazine

3 semester hours from the following:

Business Writing I
Scientific and Technical Writing I
Essay Writing
Creative Writing: Fiction
Creative Writing: Poetry
Creative Writing: Drama

Related Discipline: 16 semester hours

(In addition to the courses above, 16 hours in an approved academic discipline. Program must be approved by the department involved.)

Internship OR Additional Electives from any area: 16 semester hours

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF ARTS DEGREE IN PROFESSIONAL WRITING (EMPHASIS ON RADIO & TELEVISION JOURNALISM)

REQUIRED COURSES:

Advanced Writing

Independent Study in Writing
Seminar in Writing
Journalism I
Television Production (SPE)
Radio Production (SPE)
Radio and TV Writing: News and Commercial (SPE)
Radio and TV in a Free Society

RELATED ELECTIVES: 44 semester hours

12 semester hours from the following:

Journalism II
Journalism III (editing)
Advertising
Article Writing
Studies in Writing
Any writing course

3 semester hours from the following:

Business Writing I
Creative Writing: Drama
Creative Writing: Fiction
Creative Writing: Poetry
Essay Writing
Playwriting (THE)
Radio and TV Writing: Drama
Scientific and Technical Writing

9 semester hours from the following:

Radio & TV Workshops
Radio & TV Announcing
Appreciation of Television
Advanced TV Production
Special Problems

Internship and/or Additional Electives from any area: 20 semester hours

PSYCHOLOGY

Psychology is at one time a scholarly discipline, a scientific field, and a professional activity. Its overall focus is on the study of both animal and human behavior and related mental and physiological processes. Thus Psychology emphasizes human communication, principles and theories of behavior, research on the causes and dynamics of behavior patterns, and the practical application of knowledge, skills, and techniques for the solution and/or prevention of individual and social problems.

Literature and Culture of Southeastern Europe
Literature and Culture of the Western Slavs
Literature and Culture of the Eastern Slavs
The Immigrant in American History
The History of Eastern Europe
Slavic Studies Seminar

MAJOR ELECTIVES: 12 semester hours in Eastern European Languages

RELATED ELECTIVES: 32 semester hours

12 semester hours from the following:

History of Russia
Geography of the Soviet Union
Politics and Government in Eastern Europe
Nationality Problems of Eastern Europe
Masterpieces of Russian Literature
Music of Russia and Eastern Europe
Byzantine and Early Christian Art
Peasant and Folk Cultures
Minority Group Relations

Additional Electives: 20 semester hours

SOCIAL WORK

All social work educational programs can be reduced to the premise of "producing change in some human condition" by working with delinquents, adoptive parents, psychiatric patients, hospital patients, marriage counseling, parent-child disturbances, or a host of other human conditions. Social work is dedicated to working with people, and the undergraduate program at California State College is dedicated to providing the student with a broad range of academic and social agency experiences which will enable him to function in a variety of settings.

The social worker understands human problems and has the ability to work with human beings, using methods other than technical skills and mechanical abilities. Persons choosing a career in social work usually do so because of a genuine concern for others and a desire to help.

There should be continuing opportunities for growth and development in the social work field, both in the nature and scope of the tasks assigned to the social worker, and in the responsibility and commitment demanded by the job.

Our program is designed to provide a most comprehensive training program for social work students. It examines the nature of social work programs, and outlines the functions and interactions within the various social service organizations.

Emphasis is placed on defining human needs and the cooperative actions that must be undertaken in order to respond to these needs.

This academic effort is augmented by an active field placement experience, whereby the student has the opportunity to implement theoretical concepts in

a real-life situation, and is thus allowed to judge if the profession of social work is suited to his or her career desires.

CAREER POSSIBILITIES IN SOCIAL WORK

CAREER OPPORTUNITIES:

1. Caseworker
2. Child Welfare Worker
3. Probation, Parole, Corrections
4. Psychiatric Social Worker
5. Medical Social Worker
6. Family Service Worker
7. Public Assistance Worker
8. School Social Work
9. School Guidance Counselor
10. Drug & Alcohol Rehabilitation
11. Mental Retardation
12. Geriatrics
13. Public Health
14. Graduate School preparation

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF SCIENCE DEGREE IN SOCIAL WORK

REQUIRED COURSES:

Minority Group Relations
Contemporary Social Problems
Intro to Social Work
Social Casework I
Social Change
Delinquency
Delivery of Services
Welfare Practicum I
Welfare Practicum II
Principles of Sociology
Elements of Economics
General Psychology
Child Psychology
Adolescent Psychology
Social Psychology
Social Institutions
History of Social Thought
Urban Sociology
The Family

MAJOR ELECTIVE:

Research Methods OR Quantitative Methods

RELATED ELECTIVES: 2 semester hours

SOCIOLOGY

Although sociology has existed as a discipline for approximately 150 years, efforts to understand human society go back into ancient history. The attempt to understand society is the substance of sociology, as well as the substance of any undergraduate sociology program.

Sociology is frequently defined as a "community of scholarship that uses rational models to organize empirical data about human society and social behavior." This definition contains four components which constitute the basis of the undergraduate sociology department at California State College:

1. Our subject matter is human society and social behavior;
2. The method is that of observing empirical data;
3. Explanation occurs in and is validated by a community of scholarship;
4. Organization and focus are provided by rational models.

Each of these areas requires the content of various courses for one to gain adequate understanding of the discipline.

Sociologists attempt to approach their studies as objectively as possible, without bias. Preconceptions, however, are inherent in all thought processes. Sociologists, like other scientists, tend to begin with systematic views of what the world is like, how to study it, and even what may be discovered about it. When these general perspectives are systematized and made explicit, they are known as theoretical models. For sociology, the four theoretical models described above are basic.

With its focus upon the whole of human society, sociology is a very broad science. Its practitioners conduct research and seek to develop theory in areas ranging from urbanization and race relations, through family and religious behavior, to student dissent and drug use. In fact, the sociologist is interested in virtually all aspects of human behavior.

The sociologist is not interested necessarily in changing society, even though the results of his efforts may very well result in such changes. Rather, he is interested in discovering the content and process of social relations. His discoveries are utilized by many individuals in various disciplines. The practicing sociologist may be thought of as the individual who discovers the methods of change, while others implement his findings to produce change.

CAREER POSSIBILITIES IN SOCIOLOGY

CAREER OPPORTUNITIES:

1. Law School Preparation
2. Graduate School preparation
3. Business Management
4. Insurance
5. Government Service

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF ARTS DEGREE IN SOCIOLOGY

REQUIRED COURSES:

Principles of Sociology

Research Methods
History of Social Thought
Principles of Anthropology
Introduction to Political Science
American Government
Statistics
Elements of Economics
General Psychology
Social Psychology

MAJOR ELECTIVES: 27 semester hours

RELATED ELECTIVES: 11 semester hours
(Must include one course in Philosophy)

SOVIET STUDIES

The Soviet Studies Program is interdisciplinary and is administered by the Slavic and Eastern European Studies Committee. It is of particular interest to those who plan to work in government, journalism or international trade. A large number of electives make the program relevant to both the Soviet Union and Eastern Europe.

The language requirement is satisfied by the completion of second-year Russian.

CAREER POSSIBILITIES IN SOVIET STUDIES

CAREER OPPORTUNITIES:

1. United States State Department
2. United States Intelligence Agencies
3. Foreign trade — banking
4. Foreign trade — industry
5. Journalism — overseas
6. Translator
7. Writer
8. Foreign Service
9. Graduate School preparation

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF ARTS DEGREE IN SOVIET STUDIES

REQUIRED COURSES:

Two years of Russian
Introduction to Slavic Studies
Geography of the Soviet Union
History of Russia

Literature of the Soviet Union
Philosophy of Marxism
Politics and Government in the Soviet Union
Comparative Economic Systems
Slavic Studies Seminar

RELATED ELECTIVES: 32 semester hours

12 semester hours from the following list:

History of the Cold War
Literature and Culture of the Eastern Slavs
Soviet Foreign Policy
Politics and Government in Eastern Europe
Nationality Problems of Eastern Europe
Survey of Slavic Literature
Masterpieces of Russian Literature
Geography of East Central Europe
History of Eastern Europe
Eastern European Languages
Music of Russia and Eastern Europe

Additional Electives: 20 semester hours

SPEECH COMMUNICATION

The Department of Speech Communication offers two Arts and Sciences programs, a general one, and one with an emphasis on radio and television. Both are intended to encourage pursuit of a broad, liberal education. The main distinction between them is that the latter program requires more radio and television production experiences than does the former.

The two programs follow the pattern of the School of Arts and Sciences, which permits 60 hours of student-selected general studies. They require 34 to 36 hours of specific required courses, six to eight hours of elective courses chosen from the Speech Communication disciplines that student and adviser agree are pertinent to the particular student's development. In the general program the required courses were selected by the departmental faculty as a means of introducing the student to the varied aspects of Speech Communication. In the radio and television program the required courses were chosen to encourage familiarity with radio and television and the pursuit of a liberal education.

These two programs examine the discipline of oral communication. Such study involves concern with how to communicate effectively in varied situations by designing and delivering effective messages, how best to use the strengths of various communicative formats, how to understand what takes place in communication, and the evaluation of received communications. Neither program is intended as vocational training. Both provide communication skills and perspectives that will enable a graduate to adapt readily to a rapidly changing communicative world, irrespective of eventual career.

CAREER POSSIBILITIES IN SPEECH COMMUNICATIONS

CAREER OPPORTUNITIES:

1. Public Relations Specialist
2. Communication Specialist
3. Salesperson
4. Radio Performer
5. Television Performer
6. Information Officer
7. Political Affairs
8. Pre-professional training for Law, Ministry, and government

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF ARTS DEGREE IN SPEECH COMMUNICATION (GENERAL)

REQUIRED COURSES:

Oral Communication
Survey of Radio, TV & Film
Intro to Parliamentary Procedure
Fundamentals of Discussion
Intro to Communication Theory
Intro to Oral Interpretation
Intro to Television Production
Language and Behavior
Speech Criticism

MAJOR ELECTIVES:

Three Speech Communication Workshops
Advanced Public Speaking OR Persuasion
Argumentation and Debate OR Group Discussion
Eight Credits in Speech Communication

RELATED ELECTIVES: 26 semester hours

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF ARTS DEGREE IN SPEECH COMMUNICATION (EMPHASIS ON RADIO AND TV)

REQUIRED COURSES:

Oral Communication
Survey of Radio, TV & Film
Intro to Communication Theory
Intro to Oral Interpretation
Three Radio and TV Workshops
Intro to Television Production
Intro to Radio Production
Radio and Television Announcing
Appreciation of Film
Advanced Television Production

MAJOR ELECTIVES:

Fundamentals of Discussion OR Group Discussion
Radio and TV Writing: News OR Radio and TV Writing: Drama
Six Credits in Speech Communication

RELATED ELECTIVES: 26 semester hours

THEATRE

The program in theatre is a Humanities program with specialization in Theatre.

It promotes the highest professional standards in studying, teaching, play production, and research; encourages and guides significant responses to new and imaginative developments in communication and media; infuses all students with the conviction that theatre is vital, relevant, and artistic; maintains procedures for stimulating career development, and presents an important creative and aesthetic outlet.

This program provides a means by which our heritage, history, and way of life is experienced by college and community audiences.

In cooperation with the Student Activities Association, the department sponsors three play-producing organizations: College Players, Theatre for Children and Youth, and Theatre Now. Each organization shares department facilities, resources, and faculty.

The department works closely with area schools, social groups, and agencies, and provides an acting company which tours Western Pennsylvania as a resource group in creative expression.

CAREER POSSIBILITIES IN THEATRE

CAREER OPPORTUNITIES:

1. Theatre/drama specialists for social groups and agencies. (neighborhood, youth and senior citizen centers, libraries, summer camps and recreation areas)
2. Preparation for professional training in graduate or specialty schools as: 1) stage performers, 2) directors, 3) managers, 4) designers, and 5) technicians (scenery, lighting, costuming)
3. Owners of or professional staff in commercial studios
4. Professional staff in performing arts or cultural centers (administration, box-office management, public relations)
5. Film and television performers, directors, producers, and technicians.

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF ARTS DEGREE IN THEATRE

REQUIRED COURSES:

Production, Rehearsal & Performance

MAJOR ELECTIVES:

Movement and Voice OR Games and Improvisations
Fundamentals of Acting OR Fundamentals of Directing OR Technical Production
Seventeen Credits in Theatre Courses

RELATED ELECTIVES: 42 semester hours

URBAN AFFAIRS

The Urban Affairs program has four tracks: Urban Planning, Urban and Regional Management, Urban Recreation, and General Urban Studies. All four tracks have a common core of required courses, including Urban History, Urban Geography, Urban Sociology, and the Seminar in Urban Affairs. In addition to the core, the student selects a number of courses in his field of specialization. Among these specialized courses are Planning and Policy Analysis, Planning Methods, Planning and Developing Areas and Facilities, Recreation Leadership, Public Finance, and Principles of Management. Finally, in his junior or senior year, the Urban Affairs student takes a variable credit Practicum (4–16 credits). For the Practicum a student spends a semester or part of a semester involved in and learning the operations of a city planning commission, housing authority, a local, state, or federal agency or a city or county recreation department. The practicum experience prepares the student to grapple with the day to day operations of an on-going urban-based agency.

The area of Urban Affairs offers numerous career opportunities. Graduates may find jobs in City and County Transportation Authorities, Planning Commissions, Social Agencies, and Recreation Departments. In an urban culture the suburbs of the city as well as the city itself, demand trained personnel to plan and operate local programs. The horizons for urban affairs graduates are expanding as the suburbs become the focus for social and physical planning decisions.

Urban Affairs graduates are encouraged to continue their education. Many go directly to graduate school to pursue degrees in Urban Regional Planning, City Administration, and Landscaping Architecture. Urban Affairs is also an excellent preparation for a law career.

The Urban Affairs Practicum, discussed above, is an excellent opportunity for the student to test and refine his career decision. Moreover, often it can lead the student directly into a career.

At present, the Urban Affairs Curriculum is undergoing a significant revision. Therefore, students interested in the program are strongly advised to contact the program director: Dr. John Bauman, World Culture 301.

CAREER POSSIBILITIES IN URBAN STUDIES

CAREER OPPORTUNITIES:

1. Urban Planning

2. Urban Transportation
3. City Management
4. Law Careers
5. State and Federal Agencies
6. Suburban Government
7. Public Service
8. Graduate School preparation

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF ARTS DEGREE IN URBAN AFFAIRS

REQUIRED COURSES:

Accounting
Statistics
Urban Geography
Regional Economics
Urban Sociology
Municipal Government
Public Administration
Problems in Urban History
Business Writing
Urban Transportation
Seminar in Urban Studies
Practicum (from 4–16 credits)

RELATED ELECTIVES: 19–31 semester hours

CAREER POSSIBILITIES IN URBAN RECREATION AND PARK ADMINISTRATION

CAREER OPPORTUNITIES:

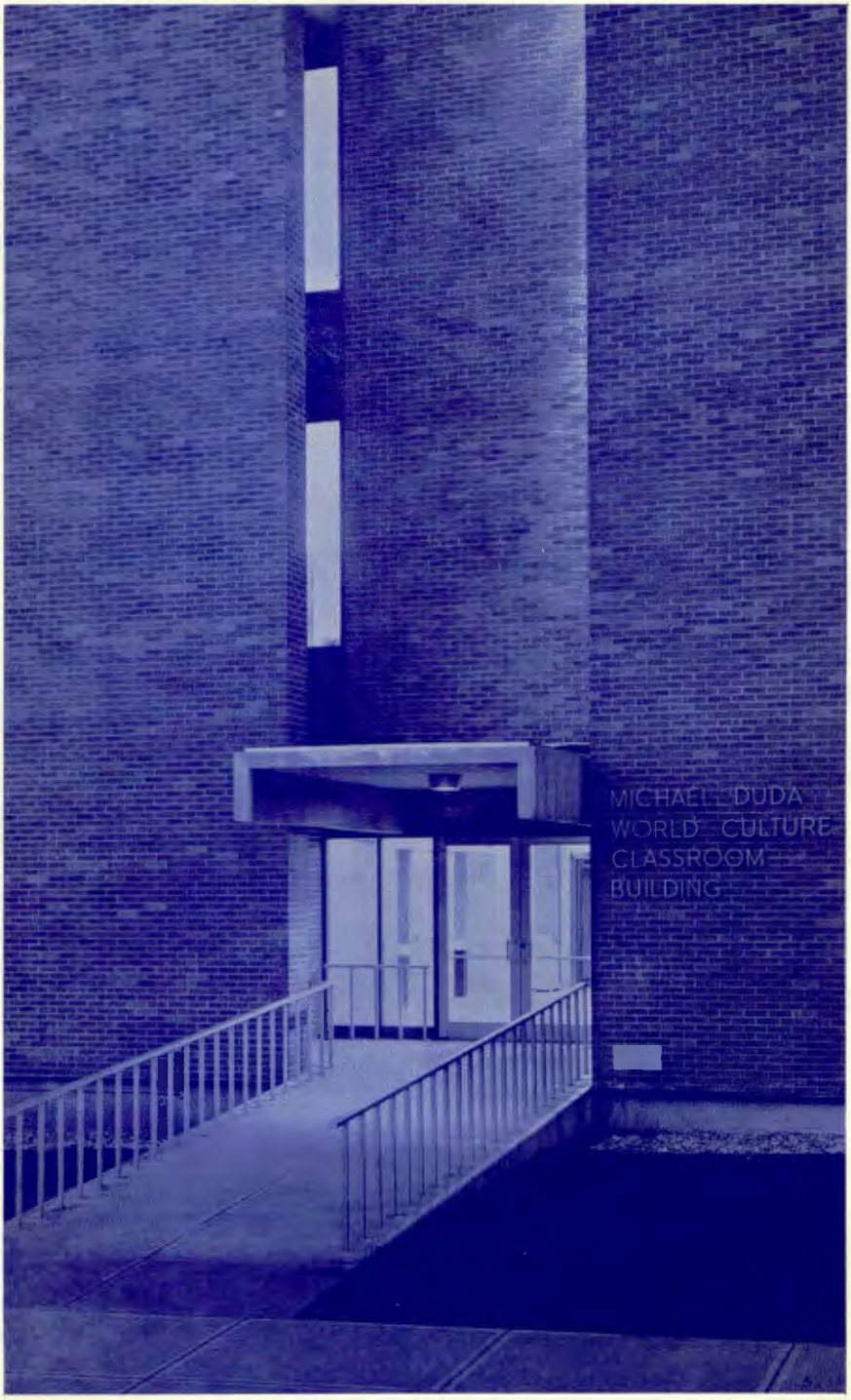
1. Municipal Recreation Director
2. Health and Welfare Specialist
3. Planning and Construction Consultant
4. Armed Forces Recreation Specialist
5. Commercial Recreation Executive
6. Student Union Director
7. YMCA – YWCA Director
8. Boy & Girl Scout Executive
9. Hospital Recreation Specialist
10. Camp Director
11. Institutional Recreation Director
12. Senior Citizen Center Supervisor
13. Industrial Recreation Director
14. Church Recreation Coordinator
15. Community – School Director
16. Resort Manager

AREA OF CONCENTRATION REQUIREMENTS LEADING TO THE BACHELOR OF ARTS DEGREE IN URBAN RECREATION AND PARK ADMINISTRATION

REQUIRED COURSES:

Community Organization and Leadership
Program Planning
Recreation and Park Administration
Planning and Developing Areas and Facilities
Accounting
Statistics
Urban Geography
Regional Economics
Urban Sociology
Municipal Government
Public Administration
Problems in Urban History
Business Writing
Urban Transportation
Seminar in Urban Studies
Practicum (from 4–16 credits)

RELATED ELECTIVES: 7–19 semester hours


MICHAEL DUDA
WORLD CULTURE
CLASSROOM
BUILDING

Description of Courses

(Introductory level courses are indicated by a dagger /†/.)

AMERICAN STUDIES

XAS 201. AMERICAN LIFE I: COLONIAL ORIGINS TO THE GILDED AGE. An interdisciplinary examination of American civilization from its colonial origins through the 19th century. The course emphasizes economic, social, religious, educational, intellectual, and artistic developments. (3 crs.)

XAS 202. AMERICAN LIFE II: 20TH CENTURY INDUSTRIAL-URBAN AMERICA. A study of the radical changes in American life which followed the United States' coming of age as an urban and industrial civilization at the turn of the century, examining changes reflected in the religious, educational, domestic and social life of the modern American, and the impact of the new society on social stratification, population trends, family affairs, city life, labor developments, as well as shifts in the judicial, political and legislative systems. (3 crs.)

XAS 205. THE TRANSFORMATION OF AMERICAN SOCIETY. (3 crs.)

XAS 263 THE BUSINESS MAN IN AMERICA. This course assesses the significant role of the business man in American culture. Its objectives: (1) to trace the historical development of the business man; (2) to analyze his relationship to the dominant intellectual, social, and moral thought of his time, and (3) to study his portrayal in fictional and non-fictional selections which characterize his origins, methods, value system, life style, and contributions to the culture. (3 crs.)

XAS 401. SEMINAR IN AMERICAN STUDIES I. An intensive study of a representative figure, theme, or period (such as the 1840's or the 1930's) that has influenced and reflected a significant aspect of American culture. Both structure and topic should afford opportunity for the student to cut across lines of discipline. Independent reading and research will be encouraged. Professors representing related disciplines will be invited to participate. (3 crs.)

XAS 402. SEMINAR IN AMERICAN STUDIES II. This seminar examines the history and development of American Studies, contributions of various disciplines to American Studies, and different techniques and approaches employed in the study of American culture. A special project or paper, reflecting the particular interests of the student, will be supervised carefully by the director of the seminar. Key studies in American Studies scholarship are incorporated into the course. (3 crs.)

ANTHROPOLOGY

ANT 100. PRINCIPLES OF ANTHROPOLOGY. (3 crs.)

ANT 101. ARCHAEOLOGY FIELD SCHOOL I. (VC)

ANT 102. ARCHAEOLOGY FIELD SCHOOL II. (VC)

ANT 106. ARCHAEOLOGY SURFACE SURVEY. (3crs.)

ANT 110. LIVING HISTORY. A study of material folk culture of southwestern Pennsylvania. Designed to show how to study material folk culture and how to replicate aspects of that culture today. (3 crs.)

ANT 200. OLD WORLD PREHISTORY. A middle-level survey of the main archaeological focal points of the old world, requiring a basic understanding of archaeological concepts, goals, and techniques. (3 crs.)

ANT 210. PRIMITIVE INSTITUTIONS. Analysis and comparison of the social, political, and religious institutions of pre-literate and pre-industrial peoples. (3 crs.)

ANT 220. AZTECS, MAYAS, AND INCAS. (3 crs.)

ANT 225. 18 AND 19 CENTURY CRAFTS. (3 crs.)

ANT 230. CULTURE & PERSONALITY. (3crs.)

ANT 235. ENCULTURATION. A cross-cultural examination of the universal human problem of transforming a neonate into a functioning adult in a particular culture. (3 crs.)

ANT 240. PEASANT AND FOLK CULTURE. (3 crs.)

ANT 250. CULTURE CHANGE AND CULTURE SHOCK. (3 crs.)

ANT 255. WORLD ETHNOLOGY. (3 crs.)

ANT 260. CLASSICAL ARCHAEOLOGY. The basic concept of Western man as revealed in the archaeological record from Crete through the Hellenistic period. (3 crs.)

ANT 270. SOUTHWEST ETHNOLOGY. An examination of the constantly changing cultural life styles that have existed in the Southwest Cultural Area of North America. (3 crs.)

ANT 280. INDIANS OF NORTH AMERICA. Social anthropology and cultural ecology of American Indian cultures. (3 crs.)

ANT 281. SUB-SAHARAN AFRICA. The cultural anthropology of representative African groups, past and contemporary. (3 crs.)

ANT 285. ORIGINS OF MAN. Contemporary Physical Anthropology, emphasizing the evolution of man as part of the evolution of the primates. (3 crs.)

ANT 286. PREHISTORIC MAN. A comprehensive survey of archaeology: history, theory and techniques. (3 crs.)

ANT 350. PREHISTORIC INDIANS. The archaeology and reconstructed culture of the Indians of the eastern United States. (3 crs.)

ANT 365. DIGGING UP AMERICA. An introduction to Historical Archaeology. (3 crs.)

ANT 379. SPECIAL PROBLEMS IN ANTHROPOLOGY. (VC)

ANT 385. PRIMATE SOCIETIES AND BEHAVIOR. Advanced study of the non-human primates. (3 crs.)

ANT 420. HISTORY OF ANTHROPOLOGY. (3 crs.)

ANT 450. PREHISTORIC ARCHAEOLOGY FIELD SCHOOL. (6 crs.)

ANT 460. HISTORIC ARCHAEOLOGY FIELD SCHOOL. (6 crs.)

ANT 479. HONORS COURSE IN ANTHROPOLOGY. (VC)

ANT 495. SEMINAR IN ANTHROPOLOGY. (3 crs.)

ART

ART 100. SURVEY OF ART HISTORY: CAVE PAINTING TO PRESENT. Emphasis is placed on the historical relevancy of art to our present society. (3 crs.)

ART 102. ART HISTORY I: CAVE PAINTING TO RENAISSANCE. (3 crs.)

ART 103. ART HISTORY II: RENAISSANCE TO PRESENT. (3 crs.)

ART 105. DESIGN I. An examination of elements and principles used in visual composition. The student uses a variety of media to solve problems in the theory and practice of art fundamentals. (3 crs.)

ART 107. MEDIA AND TECHNIQUES. Development of a broad knowledge of media and techniques used in creative expression. Emphasis will be placed on exploration rather than product. Two and three-dimensional media and techniques will be covered. (3 crs.)

ART 110. DRAWING I. Introduction to the basic elements (line, shape, value, etc.), materials (pencil, ink, charcoal, etc.), and techniques of drawing. The development of these graphic skills will be accomplished through analysis and interpretation of natural and man-made forms. Some preparation for Commercial Illustration. (3 crs.)

ART 200. EGYPTIAN ART. An examination of the artistic skills of Egyptian civilization, with emphasis on the accepted formulas and accurate observation of life portrayed in its art. (3 crs.)

ART 202. BYZANTINE AND EARLY CHRISTIAN ART. A study of historical traditions and geographical areas that influenced early Christian and Byzantine styles in art and architecture. (3 crs.)

ART 204. GREEK ART AND ARCHITECTURE. An examination of the basic elements of symetry, proportion, and unity in Greek art and architecture. (3 crs.)

ART 205. DESIGN II. Design problems in the areas of advertising, and/or packaging, fashion design, interior design, and functional design. Slides, films, magazines and field trips will be used for exposure to good design. Prerequisite: Design I. (3 crs.)

ART 208. CALLIGRAPHY AND ADVERTISING. Designed to acquaint the student with contemporary ideas in advertising and to make him/her knowledgeable in the art of calligraphy and sign writing. (3 crs.)

ART 210. DRAWING II. Further development of the knowledge and skills covered in Drawing I, with increased emphasis upon individual forms of expression. Application of line and color. Prerequisite: Drawing I. (3 crs.)

ART 220. SCULPTURE I. Introduction to the basic language, components, elements, and principles of organization of sculpture. The basic techniques of manipulation, subtraction, substitution, and addition will be covered, involving a wide range of materials. (3 crs.)

ART 230. CERAMICS I. An introduction to the construction, decoration, glazing, and firing of pottery and other clay objects. Construction techniques will include wheel throwing and hand-building processes. The course will cover a wide range of glazing techniques. (3 crs.)

ART 240. WEAVING I. Designed for the beginning weaver; includes the very basics of loom weaving with four harnesses. Instruction in the procedures involved in warping thread, the step-by-step method of dressing a loom, and loom-controlled and hand-manipulated weaving methods, including twills, lace weaves, wrapped-warp techniques, soumack, rya, flossa, and combinations of weaves. A minimum of five finished pieces is required at semester's end. (3 crs.)

ART 242. FIBERS AND THREADS. Designed primarily to give the student an opportunity to manipulate varying fibers in such techniques as macrame, tapestry weaving, basketry, sprang, rug construction, braiding, twining, free stitchery, needlepoint, etc. Imaginative treatments of all techniques is stressed, unusual uses and combinations of materials are encouraged, and emphasis is on quality pieces. (3 crs.)

ART 245. TAPESTRY WEAVING. The exploration of free tapestry techniques on upright tapestry looms as opposed to low-warp looms. The student experiments in unusual yarns and decorative materials, i.e., ribbons, beads, shells, feathers, leather, bamboo, etc., and will be evaluated on his competency on the loom, design, and imagination. (3 crs.)

ART 250. FABRICS: SURFACE TREATMENT. An exploration of surface decorative treatments of commonplace and unusual fabrics. The techniques presented include batiks, tie dying, printed and stenciled procedures, applique, cutwork, quilting, trapunto, drawn weaving, and combinations of surface methods. Design, interpretation, and craftsmanship are emphasized. (3 crs.)

ART 252. CRAFTS. An exploration of materials used in creating three-dimensional objects. Stresses the practical application of new materials and processes in creating art forms. (3 crs.)

ART 255. JEWELRY I. An introduction to the varieties of creative jewelry construction and design. Emphasis is placed on an original hand-built product. Techniques covered including wire construction, forging, cutting, piercing, etc. (3 crs.)

ART 260. WATERCOLOR PAINTING I. Designed to assist students in basic watercolor techniques. Emphasis will be placed on both transparent and opaque water colors. (3 crs.)

ART 270. PAINTING I. An introduction to the fundamentals of painting. Emphasis is placed on pictorial representation and conceptual development, primarily in oils, but work in watercolor or acrylics may be developed. (3 crs.)

ART 280. PRINTMAKING I. The fundamental techniques of intaglio, relief, and serigraphy. Composition and craftsmanship are stressed in the printing processes. (3 crs.)

ART 290. EXPERIMENTAL PROGRAM IN TEACHING OF ART. The student is in direct contact with children and their art. The class will use local elementary schools for

observing, teaching, and developing courses of study. A Saturday morning children's workshop to initiate and test experimental programs may be used. Classroom problems for the art teacher are explored. (VC)

ART 291. FILM AND SLIDE WORKSHOP – MULTI-MEDIA. A workshop designed to explore and develop visual statements using 8mm film and color slides. The class will be involved directly with the technical process of developing and editing film, as well as experimenting with new techniques. (VC)

ART 292. EXPLORING MUSEUMS. A series of field trips exposing the student to a wide variety of museums, galleries, and lectures by museum directors, curators, gallery owners, and other individuals whose work relates to the presentation or display of works of art. (VC)

ART 295. ART STUDENT WORKSHOP. Covers art-related activities not a part of the regular art course offerings. Film series and photographic, ceramic, and gallery workshops have been covered in the past. (Course description available in Art Department or at Registration when offered.) (VC)

ART 300. ITALIAN RENAISSANCE ART. An in-depth study of the growth and development of the Italian Renaissance from the 12th through the 16th century. (3 crs.)

ART 302. ART OF AMERICA. A survey of American Art from colonial through contemporary times. Emphasis is placed on the emergence and development of American architecture, painting, sculpture, and crafts. (3 crs.)

ART 304. BLACK ART IN AMERICA. A survey of Black art and artists in America, their heritage, influence, and future. (3 crs.)

ART 320. SCULPTURE II. Further development of knowledge and skills covered in Sculpture I, with increased emphasis upon individual forms of expression. Prerequisite: Sculpture I. (3 crs.)

ART 330. CERAMICS II. Students in Ceramcis II are expected to draw upon previous knowledge of materials, decoration, and design, and relate it to a personal aesthetic statement. Prerequisite: Ceramics I. (3 crs.)

ART 335. GLAZE TECHNIQUES. Glaze chemistry formulation and application, with emphasis on mixing, applying, and firing glazeware. Processes will include raku, salt glazing, ash glazing, and reduction glazing. Prerequisite: Ceramics I. (3 crs.)

ART 336. KILN CONSTRUCTION. Designed for advanced ceramics students; comprises the history, design, and construction of ceramic kilns. A variety of kilns will be covered, and students will observe on-site firing of studio and industrial kilns. (3 crs.)

ART 337. FOLK POTTERY OF SOUTHWESTERN PENNSYLVANIA. An introduction to the salt-glazed stoneware manufactured in Southwestern Pennsylvania during the second half of the 19th century. Lectures, slides, field trips to pottery sites, and guest lecturers and Historians. Actual construction of a piece on the potter's wheel, decoration of the ware, and glazing in a salt-fired kiln. (3 crs.)

ART 340. WEAVING II. An advanced weaving class designed for the student who, having completed Weaving I, wishes to pursue this craft. Techniques include overshot weaving,

tapestry on four-harness looms, vertical soumack or wrapped warp, double weave and double weave lace techniques, stenciled, tie-dyed or painted IKAT warps, and combinations of these procedures. Prerequisite: Weaving I. (3 crs.)

BIOLOGY

BIO 100. INTRODUCTION TO BIOLOGY. The nature of living matter; general principles deduced from complexities of form and function, genetics, and evolution and the implications involved in understanding life from a broad base: comparative survey of plants and animals and their interrelationships in nature. Prerequisites: None. Three hours lecture and two laboratory hours weekly. (5 crs.)

BIO 101. INTRODUCTION TO BIOLOGY LECTURE. Considerably more advanced than most high school courses in that physiological systems, molecular explanations, and current research results are stressed in relation to their impact upon daily life and an understanding of their influence on the changes required in social organizations and in technology. Prerequisites: None. Three lecture hours weekly. (3 crs.)

BIO 102. INTRODUCTION TO BIOLOGY (LABORATORY). Laboratory experiences related to the subject matter of BIO 101. Ecological awareness, nature study, cellular and microscopic studies, molecular and physiological processes, as well as more classical descriptive anatomy and classification. Prerequisites: BIO 101 previously or concurrently. Three laboratory hours weekly. (2 crs.)

BIO 105. ENVIRONMENTAL BIOLOGY. The interrelationships of various plants and animals as they relate to the biotic and abiotic constituents of diverse terrestrial and aquatic habitats. Various basic structural and functional principles controlling the biotic community and the ecosystem will be stressed via discussions of population dynamics, material cycles, and energy flow particularly as these topics relate to the continuance of life on earth. Ecological succession will be developed in terms of biotic, geological, and physico-chemical characteristics. Especially suitable for non-science students; requires only a basic understanding of biology. Prerequisite: BIO 100 or BIO 101 and BIO 102. Three lecture hours weekly. (3 crs.)

BIO 106. CONTEMPORARY PROBLEMS IN HUMAN ECOLOGY. An extensive examination of man's impact on the biosphere, hydrosphere, lithosphere, and atmosphere, with emphasis on (1) pollution of aquatic and tropospheric systems; (2) other pollutants in human ecosystems; (3) human population dynamics in relation to disease, malnutrition, genetics, and food. Lecture, possibly supplemented with various field trips. Prerequisite: BIO 100 or BIO 101 and BIO 102. Three lecture hours weekly. (3 crs.)

BIO 107. HEREDITY AND HUMAN AFFAIRS. Fundamental concepts of the evolutionary processes, the reproductive processes, and hereditary processes. Prerequisite: BIO 100 or BIO 101 and 102. Three hours lecture weekly. (3 crs.)

BIO 111. BOTANY I. An analysis of the biology of plants, encompassing the origin of plant life on the earth, the photosynthetic mechanism, modes of increasing structural complexity, the nature and meaning of sexuality, the nature of motility, and the evolutionary processes, especially as manifest in the algae and fungi. Prerequisites: BIO 115 or concurrent with BIO 115. Three hours lecture and three hours laboratory weekly. (4 crs.)

BIO 115. PRINCIPLES OF BIOLOGY. Structures and function common to all organisms: cell structure and function, the chemical aspects of biological systems, energy and materials balance in nature, developmental biology, principles of genetics, evolution, and ecology. Prerequisite: Science majors. Three hours lecture and two laboratory hours weekly. (4 crs.)

BIO 121. ZOOLOGY I. A comprehensive phylogenetic survey of the invertebrate animals, with emphasis on evolutionary changes and their relationship to man. Laboratory studies of representative members of the major phyla. Prerequisites: BIO 115 or concurrent with BIO 115. Three hours lecture and three laboratory hours weekly. (4 crs.)

BIO 205. FOUNDATIONS OF BEHAVIOR. A survey of the anatomical and physiology basis of animal behavior, together with the techniques involved in behavioral analysis. Prerequisites: BIO 115, 111, 212, 121, 222. Three lecture hours weekly. (3 crs.)

BIO 206. CONSERVATION OF BIOLOGICAL RESOURCES. A study of biological aspects relating to plants and animals directly associated with water, soil, and environmental changes. Numerous field trips are taken into areas of Western Pennsylvania to observe land reclamation, conservation practices, and basic problems confronting human populations. Prerequisites: BIO 111, 115, and 212. Three hours lecture and a three hour field trip are required weekly. (4 crs.)

BIO 207. ENTOMOLOGY. A specialized study of the insects: identification and classification; development phases; physiological characteristics, economic importance; disease vectors. Prerequisites: BIO 111, 115, and 212. Three hours lecture and three laboratory hours weekly. (4 crs.)

BIO 212. BOTANY II. The origin and evolution of the land flora, emphasizing the origin of lead, shoot, seed and flower in a progression of change from ferns and fern allies to the flowering plants. Prerequisites: BIO 111 and 115. Three hours lecture and three laboratory hours weekly. (4 crs.)

BIO 222. ZOOLOGY II. A comprehensive phylogenetic study of the Phylum Chordata with emphasis on the evolutionary changes and the interrelationship of animals of the different classes with their environment. Prerequisites: BIO 115 and 121. Three hours lecture and three laboratory hours weekly. (4 crs.)

BIO 305. COMPARATIVE VERTEBRATE ANATOMY. A comparative study of the organs and organ systems, primarily concentrating on comparing the rabbit with man. Other chordates are used as ancillary material. Prerequisites: BIO 115, 121, and 222. Three hours lecture and three laboratory hours weekly. (4 crs.)

BIO 306. HUMAN ANATOMY. A basic study of the structures of the human body. Prerequisites: BIO 115, 121, and 222. Three hours lecture and three laboratory hours weekly. (4 crs.)

BIO 307. PLANT ANATOMY. A detailed study of structural differentiations, especially in the higher plants: the structure of meristems and developmental changes in their derivatives. Prerequisites: BIO 115, and 121. Three hours lecture and three laboratory hours weekly. (4 crs.)

BIO 308. BIOTIC COMMUNITIES. The principles of the structure and nature of various biotic communities are considered from the concrete stand to the biome level. Factors which limit, maintain, and modify biotic assemblages are presented qualitatively and

quantitatively from the local to the regional portions of the communities. Interrelationships between organisms and environment in reference to the organism's morphological, physiological, and behavioral adaptations. The dynamics of ecological succession are stressed, illustrating the permanence of climax communities over geological time. Ecological techniques and methods to quantify and qualify the community will be pursued in the field and laboratory. Extended field trips may be required. Prerequisites: BIO 115, 112, and 121. Three hours lecture and three hours of laboratory-field experience weekly. (4 crs.)

BIO 314. PLANT ECOLOGY (4 crs.)

BIO 315. CYTOLOGY. A detailed study of microscopic and sub-microscopic components of plant and animal cells, with emphasis on the modern research of morphology and functions of various organelles. Mitosis, meiosis, chromosomal basis of heredity and chromosomal aberrations in various organisms, including humans. Special attention is given to experimental cytology cytological and cytogenetical theories and cytological techniques. Prerequisites: BIO 111, 115, 121, 212, and 222. Three hours lecture and three laboratory hours weekly. (4 crs.)

BIO 316. ECOSYSTEMS ECOLOGY. An introductory study of the dynamics of the biological, physical, and mathematical relationships and interrelationships that proceed within various ecosystems on the earth. Emphasis is placed on biogeoghemical cycling, energy cycling, population dynamics, productivity, and pertinent problems concerning ecosystem deterioration. Field and laboratory studies concerning various processes operating within an ecosystem. Prerequisites: BIO 111, 115, 121, 212 and 222. General Chemistry I and II and College Algebra recommended. Three hours lecture and three hours of laboratory-field experience weekly. (4 crs.)

BIO 317. EMBRYOLOGY. A study of oogenesis and spermatogenesis and resultant developments following fertilization; factors involved in morphogenetic determination; organology: sequences of changes in development. Special emphasis on the chick and comparative examples of development in other animals. Prerequisites: BIO 115, 121, and 222. Three hours lecture and three laboratory hours weekly. (4 crs.)

BIO 318. GENETICS. An introduction to molecular genetics and to the basic principles of inheritance. Gene interactions, multiple-factor inheritance, chromosome mapping, chromosomal extrachromosomal inheritance. The roles of mutation, selection, migration, and genetic drift are investigated to determine the genetic composition of different populations. Prerequisites: BIO 111, 115, 121, 212, and 222. Three hours lecture and three laboratory hours weekly (4 crs.)

BIO 321. BIOTIC INDICATORS OF WATER POLLUTION. A survey of biotic indicators of pollution, with emphasis on relating these indicators to the chemical and physical characteristics of various polluted waters. Practical exercises include field problems as well as laboratory experiments. Prerequisites: Principles of Biology, General Chemistry I & II, and Analytical Chemistry I. (4 crs.)

BIO 325. ANIMAL HISTOLOGY. The study of cellular differentiations in tissue, tissue identification, and special functions, especially in the mammals. Prerequisites: BIO 115, 121, and 222. Three hours lecture and three laboratory hours weekly. (4 crs.)

BIO 326. MICROBIOLOGY. A detailed study of bacteria and viruses, with less emphasis on fungi, algae and protozoans. Special emphasis on medical aspects of bacteriology and

virology. The cytology, physiology, microbiology and culture of microbes are pursued in the laboratory. Prerequisites: BIO 111, 115, 121, 212, and General Chemistry I & II. Three hours lecture and three laboratory hours weekly. (4 crs.)

BIO 327. PARASITOLOGY. A study of the etiology, epidemiology, and biology of some common animal parasites. Prerequisites: BIO 115, 121, and 222. Three hours lecture and three laboratory hours weekly. (4 crs.)

BIO 328. ANIMAL PHYSIOLOGY. The functions of the animal body. Basic physiological phenomena are studied, with considerable emphasis upon practical application to the student's own life and well-being. Prerequisites: BIO 115 121, 222, and either 305 or 405. Three hours lecture and three laboratory hours weekly. (4 crs.)

BIO 334. SOIL SCIENCE. A study of the various properties of soils as they relate to plant production. Special attention given to the principles involved in the supply and availability of plant nutrients, soil moisture, organic matter, soil reaction, and liming. Other topics: soils and chemical pollution, and soils as they relate to the world's food supply. Prerequisite: General Chemistry. Three hours lecture and three laboratory hours weekly. (4 crs.)

BIO 335. PLANT PHYSIOLOGY. Physio-chemical foundations of plant functions; water and salt absorption and translocation, photosynthesis, anabolic synthesis, respiration, plant hormones, vegetative and reproductive growth, growth correlations, germination, and dormancy. Prerequisites: BIO 115, 121, and 212. Three hours lecture and three laboratory hours weekly. (4 crs.)

BIO 336. PLANT TAXONOMY. A study of the relationships among the flowering plants and ferns; their classification and methods of identification. Ecology is stressed as it applies to Western Pennsylvania. Prerequisites: BIO 111, 115, and 212. Three hours lecture and three laboratory hours weekly. (4 crs.)

BIO 337. ORNITHOLOGY. The study of bird life. Classification, anatomy, behavior, and recognition of birds, with emphasis on local species and their relationships to man and the ecological balance with other organisms. Prerequisites: BIO 115, 121, and 222, or consent of instructor. Three hours lecture and three laboratory hours or field activity weekly. (4 crs.)

BIO 338. PLANTS AND MAN. A study of man's relationship with and economic interest in plants, from the products from plant cell walls, exudates and extractions, to those primarily used for food and beverages. Special emphasis on wood and its uses, fibers, latex products, tannins, food and medicinal plants. Additional emphasis on conservation and the more intelligent use of plants. Prerequisite: Botany II or equivalent. Three hours lecture and three laboratory hours weekly. (4 crs.)

BIO 405. HUMAN GENETICS. Chromosomal abnormalities, Mendel's Laws, and the effect of chance of gene action of Mendelian ratios. Other topics: sex-related inheritance, random mating, consanguinity, allelism, mutations, and maintenance of polymorphism. Prerequisites: BIO 115, 121, 222, and 318. Three hours lecture and three laboratory hours weekly. (4 crs.)

BIO 406. MOLECULAR GENETICS. A detailed account of the relationship between nucleic acids and the proteins for which the code was determined. Gene control mechanisms, mutation mechanisms, genetic repair, and recombination in procaryotic and eucaryotic cells. Prerequisites: BIO 115, 121, 222, and 318. Three hours lecture and three laboratory hours weekly. (4 crs.)

BIO 407. MYCOLOGY. An extensive examination of the fungi, with emphasis on the filamentous forms. The cytology, physiology, and morphology of the fungi are studied to determine their role in the scheme of nature. Laboratory techniques in isolating, culturing, enumerating, and identifying fungi. Prerequisites: BIO 111, 115, 212, and 326. Three hours lecture and three laboratory hours weekly. (4 crs.)

BIO 408. RADIATION BIOLOGY. Biophysical processes involved in absorption of radiation by living systems. Production, properties, and measurement of ionizing radiations and radiosotopes, safety, and biological effects. This course provides necessary background for special certification as a civil defense radiation instructor. Prerequisites: BIO 111, 115, 121, 222, Physics I & II. Three hours lecture and three laboratory hours weekly. (4 crs.)

BIO 409. INTRO TO RESEARCH. Given a problem in biology (or one of his own choice) the student surveys the literature and organizes a program that might lead to its solution, and undertakes a few experiments as time permits. Prerequisites: Biology majors in junior or senior year, others by approval of department. The number of hours spent on the course per week is by arrangement. (VC)

BIO 419. BIOLOGY PRACTICUM. Upon approval limited number of majors in junior or senior year may register. Practical laboratory and research methods under the intensive supervision of experts in particular biological areas, located on or off campus. Emphasis on research techniques, advanced skills, and group efforts. At least (3) three hours of work per week are required for each credit. Prerequisites: Biology majors in junior or senior year, others by approval of department. The number of hours spent on the course per week is by arrangement. (1—17 credits, may be repeated.)

BIO 426. CLINICAL MICROBIOLOGY. A survey of the indigenous and pathogenic microorganisms of man, general principles deduced from complexities involving biochemistry and physiology, host-parasite relationships, and laboratory procedures. Organisms studied include bacteria, fungi, viruses, and rickettsia. Prerequisites: BIO 111, 115, 212, and 326. Three hours lecture and three laboratory hours weekly. (4 crs.)

BIO 427. CELLULAR PHYSIOLOGY. The physiology of the cell with emphasis on the relation of structure and general properties to metabolism, synthesis and regulation. The role of the nucleus and of the cytoplasm in heredity, including genetic mechanism, mutation, and the physiology of gene expression. Physical and chemical foundations of cells: the relation of cells to their environment; membrane phenomena; photosynthesis; enzymes; osmosis and permeability. Prerequisites: BIO 111, 115, 121, 222, and General Chemistry I & II. Organic Chemistry I & II recommended. (4 crs.)

BIO 428. ANIMAL SYSTEMATICS. Collection and study of animal species from the various major phyla of animals; use of keys in determining taxonomic groupings of animals collected. Prerequisites: BIO 121 & 222. (4 crs.)

BIO 430. LAB INSTRUMENTATION FOR BIOLOGY. The theory of and practice with major types of laboratory instrumentation used in modern biological practice. Content will be adjusted to methods practiced at C.S.C. may also include any additional procedures of special interest to the class members. Practice in writing lab reports and designing experiments. Prerequisites: Physics II and Analytical Chemistry or permission of instructor. (4 crs.)

BIO 431. TECHNIQUES IN ELECTRON MICROSCOPY. Detailed training in the operation and care of the electron microscope; techniques of specimen preparation for

electron microscope visualization, including fixation, embedding, and ultrathin sectioning; special techniques such as replication and shadow casting. Prerequisite or concurrent courses: BIO 432, Organic Chemistry I and II, or consent of the instructor. (4 crs.)

BIO 432. ULTRASTRUCTURE. A study of the generalized cell, the highly specialized cell, and some tissues as seen by the electron microscope, with special emphasis on correlation of structure with function. An additional aim is to enhance the student's ability to interpret electron micrographs. Prerequisites: BIO 115, 121, & 222, 111 & 212, Organic Chemistry I & II, a Molecular Biology course and/or consent of instructor. (3 crs.)

BIO 433. HERPETOLOGY. A consideration of the Amphibia and Reptilia from taxonomical, morphological, evolutionary, behavioral, and physiological viewpoints, with special emphasis on the Testudinata. Prerequisites: BIO 115, 121, and 222. Three hours lecture weekly. (3 crs.)

BIO 495. SEMINAR IN BIOLOGY. Roundtable discussions of selected topics in biology, reports from original literature both current and classical. Prerequisites: Biology majors in junior or senior year. Two hours lecture weekly. (2 crs.)

THE HEALTH PROFESSIONS

Students in the health professions commit themselves to a lifelong process of self-education; therefore, the development of scholarly motivation, independence, and creativity are vital to professional medical competence. Acquiring an understanding of people, their societies, and their history is an invaluable asset in the practice of the health professions. Consequently, a liberal education in the humanities and the arts, as well as in social and natural sciences, provides the best professional preparation. In addition, the student should demonstrate competence and concentrated study in a curriculum or field of special interest. Although students interested in the health professions don't necessarily major in Biology, they should plan to take a significant number of Biology courses.

Varied program offerings make it possible to satisfy requirements for pre-medical, pre-dental, pre-veterinary, pre-podiatry, pre-pharmacy, pre-chiropractic, and other pre-health fields. Those interested should contact the Biology Department to discuss their career plans.

CHEMISTRY

CHE 101. GENERAL CHEMISTRY I. An introductory course for majors and non-majors. Topics covered include atomic structure, bonding, stoichiometry, chemical reactions (including redox reactions), solutions, and the liquid state. Three class hours and three lab hours each week. (4 crs.)

CHE 102. GENERAL CHEMISTRY II. A continuation of General Chemistry I. The gaseous state, solutions, thermodynamics, kinetics, acids and bases, gaseous and ionic equilibria, and electrochemistry. Prerequisite: CHE 101. Three class and three lab hours each week. (4 crs.)

CHE 203. GENERAL CHEMISTRY III. A continuation of General Chemistry II. Descriptive chemistry of metals and non-metals, nuclear chemistry, and complex compounds. Three class hours each week. Prerequisite: CHE 102. (3 crs.)

CHE 255. GEOCHEMISTRY. Basic chemical principles employed in the solution of some geologic problems. Geologic dating, sedimentary geochemistry, chemical weathering, colloids and structural aspects of clay minerals and soils. Three class hours each week. (3 crs.)

CHE 261. ANALYTICAL CHEMISTRY I. An introduction to quantitative analytical techniques and procedures, including a statistical evaluation of gravimetric, volumetric, chromatography, and electrochemical data. Prerequisites: CHE 101 and 102. Three lecture hours and three laboratory hours each week. (4 crs.)

CHE 262. ANALYTICAL CHEMISTRY II. An introduction to colorimetric and spectrophotometric techniques and procedures, including ultraviolet and visible, infrared, emission and atomic absorption, nuclear magnetic resonance raman, and electron spin resonance. Prerequisite: CHE 261. Three lecture hours and three laboratory hours each week. (4 crs.)

CHE 331. ORGANIC CHEMISTRY I. An introduction to the basic principles which govern the behavior of carbon compounds. Particular emphasis on the structure of organic compounds, acid and base theory, and an introduction to the fundamental principles necessary for the study of organic reaction mechanisms. Three class hours each week and four laboratory hours each week. Prerequisites: CHE 101 and 102. (4 crs.)

CHE 332. ORGANIC CHEMISTRY II. A thorough examination of the major reactions characteristic of organic compounds. Particular emphasis on substitutions, additions, eliminations, condensations, and rearrangements. Three class hours each week and four laboratory hours each week. Prerequisite: CHE 331. (4 crs.)

CHE 345. MEDICINAL MEDICINE. A general understanding of the chemistry, pharmacology and synthesis of the more important classes of medicinal agents used in therapy. A glimpse for pre-medical and other health-related students into this large and fascinating field. Three class hours each week. (3 crs.)

CHE 369. INDIVIDUAL WORK I. An opportunity for each student specializing in chemistry to organize, investigate, and report on a specific problem of his own selection. (VC)

CHE 411. BIOCHEMISTRY I. The chemistry of the carbohydrates, fats, and proteins; a survey of the chemistry and functions of enzymes, vitamins, and hormones. Three class hours each week and four laboratory hours each week. Prerequisites: CHE 331 and 332. (4 crs.)

CHE 412. BIOCHEMISTRY II. The chemistry of the carbohydrates, fats, and proteins; a survey of the chemistry and functions of enzymes, vitamins, and hormones. Three class hours each week and four laboratory hours each week. Prerequisites: CHE 331, 332, and 411. (4 crs.)

CHE 421. ADVANCED INORGANIC CHEMISTRY I. Modern treatment of principles of inorganic chemistry, emphasizing chemical bonding and sterochemistry, with emphasis on periodic properties, acids and bases, and non-aqueous solvents. Three class hours each week. Prerequisite: CHE 451. (3 crs.)

CHE 422. ADVANCED INORGANIC CHEMISTRY II. Coordination compounds; nomenclature, sterochemistry, and kinetics of coordination compounds of the short and long transition metals. Prerequisite: CHE 421. (3 crs.)

CHE 425. ORGANIC PREPARATIONS. An advanced course in synthetic organic chemistry. Important reactions and special experimental techniques are applied to the preparation of more complex organic compounds. Three class hours each week and three laboratory hours. Prerequisites: CHE 331 and 332. (3 crs.)

CHE 426. QUALITATIVE ORGANIC CHEMISTRY. Identification of pure organic compounds and mixture by classical and instrumental methods. One class hour each week and four lab hours each week. Prerequisites: CHE 331 and 332. (3 crs.)

CHE 433. ADVANCED ORGANIC CHEMISTRY I. A detailed study of the modern structural theory of organic chemistry. Particular emphasis on the correlation of the structure and reactivity of organic compounds. Three class hours each week. Prerequisites: CHE 331 and 332. (3 crs.)

CHE 434. ADVANCED ORGANIC CHEMISTRY II. A study of the application of modern instrumental techniques to organic structural problems. Particular emphasis on the interpretation of the ultraviolet, infrared, nuclear magnetic resonance, and mass special data for elucidating the structure of organic molecules. Three class hours each week. Prerequisite: CHE 433. (3 crs.)

CHE 441. LABORATORY TECHNIQUES WITH INSTRUMENTAL ANALYSIS I. Chromopotentiometry, coulometry, electrodeposition, stripping analysis, chronoamperometry, polarography, voltametry, cylclic voltametry, and column, thin-layer, and gas chromatography. Three class hours each week and three laboratory hours each week. Prerequisites: CHE 261 and 262. (4 crs.)

CHE 442. LABORATORY TECHNIQUES WITH INSTRUMENTAL ANALYSIS II. Ultraviolet, visible, infrared, and reman, emission, atomic absorption, electron paramagnetic resonance, and nuclear magnetic resonance spectroscopy. Three class hours each week and three laboratory hours each week. Prerequisite: CHE 441. (4 crs.)

CHE 445. MATH FOR CHEMISTS. Mathematical techniques, including differential and integral calculus, ordinary and partial differential equations, vector and matrix algebra, eiginfunction theory and group theory are employed in the solution of problems of chemical systems. Three class hours each week. (3 crs.)

CHE 451. PHYSICAL CHEMISTRY I. Properties of gases, kinetic-molecular theory, molecular energies, classical and statistical development for the 1st, 2nd, and 3rd laws of thermodynamics, with applications to thermochemistry and chemical equilibria. Prerequisites: CHE 261 and Mathematics through Integral Calculus. Three class hours and three lab hours each week. (4 crs.)

CHE 452. PHYSICAL CHEMISTRY II. Kinetics of chemical reactions, properties of liquids, phase equilibria, solutions, thermodynamics, properties of electrolytes in solution and electrochemistry. Prerequisite: CHE 451. Three class hours and three lab hours each week. (4 crs.)

CHE 453. ADVANCED PHYSICAL CHEMISTRY I. Classical and statistical thermodynamics as applied to chemical systems. Three class hours each. Prerequisites: CHE 451 and 452. (3 crs.)

CHE 454. ADVANCED PHYSICAL CHEMISTRY II. Kinetics and electrochemistry. Prerequisite: CHE 453. (3 crs.)

CHE 457. CHEMISTRY FOR HIGH SCHOOL TEACHERS. Designed for the teacher in service. Will include recent ideas in chemical bonding, crystal structure, and radio and nuclear chemistry. Three class hours each week. Prerequisite: Certification in General Science of Chemistry. (3 crs.)

CHE 463. ADVANCED ANALYTICAL CHEMISTRY I. Theory and application of instrumental techniques used for inorganic and organic systems. Topics considered are separation and electrochemical techniques. Separation techniques utilize all modes of chromatography; and, using the "double layer" theory, all electrochemical techniques are treated for the analysis of the systems. Prerequisites: CHE 261 and the permission of the instructor. (3 crs.)

CHE 464. ADVANCED ANALYTICAL CHEMISTRY II. Theory and application of instrumental techniques used for inorganic and organic systems. Using group theory as a basis, all divisions of spectroscopy are treated for the analysis of the systems. Prerequisites: CHE 261 and permission of the instructor. (3 crs.)

CHE 479. SPECIAL PROBLEMS IN CHEMISTRY. (VC)

CHE 495. CHEMISTRY SEMINAR. Students may choose a particular topic in chemistry and, under the supervision of a faculty member, prepare and present a seminar on it. The topics are to be on material not covered in the undergraduate courses, or may be an extension of some particular aspect of chemistry included in less detail in an undergraduate course. (1 cr.)

CHE 497. SPECIAL TOPICS. Meets the needs of students who may want to study a topic in more detail than is given in the regular courses, or who may want to pursue some topic not included in their course work. (VC)

EARTH SCIENCE

EAS 100. INTRODUCTION TO EARTH SCIENCE. A study of earth environments and processes within the environments. Laboratory experiences are a part of the course, although no laboratory periods are designated. (3 crs.)

EAS 150. INTRODUCTION TO GEOLOGY. Intended primarily for the non-science major. Laboratory work is an integral part of the course, and the student has the opportunity to work with rock and mineral samples, fossils, topographic maps, and geologic maps and cross-sections. (4 crs.)

EAS 151. PHYSICAL GEOLOGY. Physical Geology is the first of a two-course sequence (followed by Historical Geology) designed as an introduction to the field of geology. Primarily for Geology majors, but suitable for Earth Science Secondary Education students, students needing a two-semester lab sequence, or any student wishing to increase his knowledge of our planet. (4 crs.)

EAS 152. HISTORICAL GEOLOGY. This survey in earth history assumes some knowledge of geologic terminology. Required for Geology majors, but suitable for students in Earth Science Secondary Education as well as anyone interested in the historical evolution of the earth. Geologic time; the use of fossil material; the origin and evolution of the earth (with special emphasis on North America). Laboratory work includes selected problem sets, a study of the major plant and invertebrate fossil groups, and, whenever possible, field trips. (4 crs.)

EAS 157. DESCRIPTIVE ASTRONOMY. Recognition of the various elements of the solar system, their physical characteristics and motions, the phenomena of the galactic system, and extra-galactic space and the constellations, with a consideration of the mathematical phases generally omitted from studies of this kind. (3 crs.)

EAS 160. PHYSICAL GEOGRAPHY. The physical elements in the geographic pattern of man's environment and introductory phases of systematic geography. (3 crs.)

EAS 221. PETROLEUM GEOLOGY I. The first of a two-semester course sequence, Petroleum Geology I examines the composition and origin of petroleum, source beds, reservoir rocks, migration of fluids, and reservoir conditions. In addition, the various trapping mechanisms for petroleum are examined by studying actual oil fields. Laboratory work includes the preparation of geologic maps and cross-sections, as well as prospect analysis. (3 crs.)

EAS 222. PETROLEUM GEOLOGY II. Extensive consideration of geological, geophysical, and geochemical exploration techniques. Estimation of petroleum reserves (formation evaluation) by means of well logs, and other computer applications in petroleum geology. Discussion of alternative sources of oil (oil shales and tar sands). (3 crs.)

EAS 230. EARTH RESOURCES. The first half of this course covers the identification and description of rocks and minerals, the origin and classification of soils, and water as a resource. The second half is concerned with the distribution and geologic origin of the economically important metals, non-metals, and fossil fuels. A non-technical course. Elementary physical and chemical properties of earth materials are analyzed in the classroom and, when appropriate in the field. (3 crs.)

EAS 235. ENVIRONMENTAL GEOLOGY. The interaction between man and his geologic environment. The student needs only a limited background in geology (e.g. Introduction to Geology), as the course has been designed as much for the environmental studies major (and general education student) as for the geology major. Erosion, floods, sediments and pollutants, health hazards, soils, earthquakes (prediction and control), mass movements, volcanoes, and urban environmental problems. (3 crs.)

EAS 241. METEOROLOGY. An introduction to the physics of the atmosphere, approached from the standpoint of earth-atmosphere interaction. The effects of controls such as land and water distribution upon weather and climate. Weather map analysis and weather observations. (3 crs.)

EAS 242. CLIMATOLOGY. A systematic study of the climatic regions of the world and the advantages and limitations of each for man's occupancy. The physical qualities of the atmosphere and the regional characteristics of climate. Recommended: Meteorology. (3 crs.)

EAS 251. MINERALOGY. An introduction to the morphology and internal structure of crystals and an examination of the chemical and physical nature of minerals. Laboratory time is devoted to the study of crystal models and the identification of selected mineral specimens. This course presupposes a basic knowledge of Physical Geology and General Chemistry, and serves as an introduction to the Petrology course. (3 crs.)

EAS 252. PETROLOGY. A detailed examination of the three major rock groups. Particular emphasis placed on the origin of individual rock types and the several bases of classification. Laboratory work includes hand specimen and thin section identification. Recommended: Physical Geology, Mineralogy, and General Chemistry prior to taking this course. (3 crs.)

EAS 256. ECONOMIC GEOLOGY. The composition, distribution, origin, and exploitation of the economically important rocks and minerals. The first half of the course examines the metallic minerals, the second half the non-metallic minerals. Field trips are an essential part of the course. Recommended: Physical or Introduction to Geology, Mineralogy, and General Chemistry. (3 crs.)

EAS 265. GEOMORPHOLOGY. The origin, description, and classification of surface features (landforms). Particular emphasis on the evolution of landscapes as related to underlying geologic factors and the climatic regime. Time is devoted to the examination of landforms as displayed on topographic maps. (3 crs.)

EAS 266. GEOLOGY OF PENNSYLVANIA. A survey course intended for non-major as well as the student majoring in geology. The origin and description of landforms, the physical and historical evolution of the Appalachian Mountain complex, the economic resources of our state, and the various aspects of coal formation in western Pennsylvania. A basic knowledge of Physical and Historical Geology is presumed. Field trips to selected localities. No formal lab. Recommended: Introduction to Geology or Physical Geology and Historical Geology. (3 crs.) (2nd level course)

EAS 350. PALEONTOLOGY I. This two-course sequence (see 351 below) is an expansion of the one-semester course, Principles of Paleontology. The first semester, Paleontology I, examines the essential biological and geological principles basic to all paleontological studies. In addition, considerable time will be devoted to the study and identification of various microfossil groups that are intensively used in exploration programs by the petroleum industry. (3 crs.)

EAS 351. PALEONTOLOGY II. A detailed study of the various invertebrate phyla and consideration of the more important of these as index fossils. Of interest to biology and geology students. (3 crs.)

EAS 355. STRATIGRAPHY. Emphasis on the time and spatial relationships of layered rocks. The use of guide fossils is stressed, and the stratigraphy of Pennsylvania is examined in detail. Students become involved in local and regional stratigraphic problems of individual interest. Recommended: Physical Geology, Historical Geology, and Paleontology. (3 crs.)

EAS 356. STRUCTURAL GEOLOGY. An examination of the dynamic nature of the earth. The response of rocks to deforming forces, fold systems, fault systems, and the tectonic history of the earth. Modern theories of continental drift, sea-floor spreading, and sub-crustal convection. Opportunity is provided for study of local structural features of interest to the individual. Recommended: Physical Geology, Historical Geology, and College Physics. (3 crs.)

EAS 357. SEDIMENTOLOGY. All aspects of sediments and sedimentary rocks. Laboratory work includes hand specimen and thin-section descriptions and classification of sedimentary rocks, and the mechanical and statistical analyses of sediments. Two hours lecture and one two-hour lab. Recommended: Physical and Historical Geology, Mineralogy, and Chemistry I. (3 crs.)

EAS 358. OCEANOGRAPHY. An introductory study of the four main branches of Oceanography: (1) Geology of the oceanic basins (origin of the oceans, structure and geomorphology of the ocean's floor, methods of investigation); (2) Chemistry of the oceanic waters; (3) Physics of the oceans (currents, waves, tides, etc.); (4) Biology of the oceans (marine plants and animals). No preliminary studies required, but a previous course in geology is recommended. (3 crs.)

EAS 377. REMOTE SENSING IN GEOLOGY. The use of remote sensing techniques in the analysis of the geologic environment. The qualitative and quantitative analysis of such mapping systems as optical telemetry, aerial photography, radar, etc. The basic principles of photo-interpretation and photogrammetry. (3 crs.)

EAS 409. SPECIAL PROBLEMS IN EARTH SCIENCE. Development of individual research problems. Does not replace any course regularly given. Permission of staff required. Hours to be arranged. (VC)

EAS 419. SPECIAL PROBLEMS IN GEOLOGY. See 409. (VC)

EAS 429. HONORS COURSE IN EARTH SCIENCE. Directed reading and research in field of interest chosen by student in consultation with the instructor. Prerequisites: provisions of the Honors Program of the college. Approval by staff of the department. Weekly meeting with instructor to be arranged. (VC)

EAS 436. FIELD METHODS IN EARTH SCIENCE. An intensive micro-earth science study through actual field work. An advanced course. Permission of staff required for registration. One hour lecture and four to eight hours field work each week. (3 crs.)

EAS 437. FIELD METHODS IN GEOLOGY. Designed to provide geology majors with a knowledge of problems encountered in field work and the techniques used to solve these problems. Major emphasis on geologic mapping and the use of various instruments. Students should have a broad knowledge of geologic principles and mathematics. One hour lecture and four hours of lab (field work) per week. (3 crs.)

EAS 439. HONORS COURSE IN GEOLOGY. A series of independent study courses designed to stimulate study and investigation in areas of current research in the geosciences. Intended for major students of advanced standing who have maintained a QPA of 3.0 in the major field. Prerequisites: provisions of the Honors Program of the college. Approval by staff of the department. (VC)

EAS 491. SUMMER FIELD COURSE: EARTH SCIENCE. Planned trips in summer sessions, during which lectures and discussions are conducted. Open to all students. (VC)

EAS 492. SUMMER FIELD COURSE: GEOLOGY. See 491. (VC)

EAS 493. EARTH SCIENCE WORKSHOP. Designed to provide students with a combination of experiences: lectures, field work, and laboratory situations. It is hoped that through these experiences the student will gain insights relevant to present-day situations. Prerequisite: Permission of staff. Hours to be arranged. (VC)

EAS 494. GEOLOGY WORKSHOP. See 493. (VC)

EAS 495. SEMINAR IN EARTH SCIENCE. (VC)

EAS 496. SEMINAR IN GEOLOGY. Designed to give students of advanced standing in geology a chance for group discussion and involvement in areas of geoscientific interest. The content and approach of the seminars varies from semester to semester, with individual staff members covering their areas of greatest competency. (VC)

EAS 498. PRACTICUM IN GEOLOGY. The student combines academic theory with practical on-the-job experience by spending up to a full semester's internship in one of

several state or local agencies such as the Governor's Energy Council, Council on Environmental Resources, State Geological Survey, etc. The practicum can be taken for 3–17 credit hours, and includes supervision by the participating agency as well as performance evaluation by the academic adviser. Limited to geology majors. (VC)

ECONOMICS

ECO 100. ELEMENTS OF ECONOMICS. An introduction to the elements of economic analysis, particularly geared for the non-major. A brief exposition of pricing and a survey of principles of modern macroeconomic theory and policy. (3 crs.)

ECO 104. CURRENT ECONOMIC ISSUES. An application to contemporary economic problems of economic principles developed in Economics 100. Current readings in economics are examined. (3 crs.)

ECO 111. ACCOUNTING I. (3 crs.)

ECO 115. INTRODUCTORY MICROECONOMICS. Microeconimic relationships and methods of analyses. The theories of demand and production are studied intensively together with a careful and in-depth examination of the basic market models. (3 crs.)

ECO 130. INTRODUCTORY MACROECONOMICS. This beginning course seeks to familiarize the student with the basic principles of the market system. Emphasis is then placed on the monetary system, the determination of national income, and fiscal policy and its implications. (3 crs.)

ECO 205. DEVELOPMENT OF THE AMERICAN ECONOMY. A critical analysis of economic life in Colonial America and a study of the East-West immigration and the growth of modern business and industry in the United States. Special attention directed towards corporations and their part in the nation's dynamic growth. The causes and consequences of the great depression are also considered. Prerequisite: Economics 100 or Economics 130. (3 crs.)

ECO 207. MONEY AND BANKING. The functioning of the monetary and banking system as a whole and its relationship with the balance of the economy. Emphasis on commercial banks, the Federal Reserve System, the Treasury Department, the nature of money, and the significance of monetary policy. Prerequisite: Economics 100 or Economics 130. (3 crs.)

ECO 208. PUBLIC FINANCE. A study of governmental activities in the collection and spending of public income. Subjects include government expenditures, taxes and revenues, public debt management, fiscal policy, and fiscal administration. Prerequisites: Economics 115 and Economics 130. (3 crs.)

ECO 212. ACCOUNTING II. (3 crs.)

ECO 213. MANAGERIAL FINANCE. (3 crs.)

ECO 214. ENVIRONMENTAL ECONOMICS. (3 crs.)

ECO 215. INTERMEDIATE MICRO THEORY. (3 crs.)

ECO 217. PRINCIPLES OF MANAGEMENT. The initial introduction to the basic concept of management as an essential process applicable to all enterprises. Emphasis is on human factors, but the influences of economic and technological factors are also considered. (3 crs.)

ECO 218. FINANCIAL MANAGEMENT. The objective of the course is to acquaint the student with some basic principles of managerial finance, principally corporate finance. Modest use of automatic data processing equipment and a liberal use of the problem technique, including case studies, is employed. Prerequisite: Economics 212. (3 crs.)

ECO 225. MONETARY FISCAL POLICY. (3 crs.)

ECO 230. INTERMEDIATE MACRO THEORY. (3 crs.)

ECO 235. LABOR ECONOMICS. (3 crs.)

ECO 238. ENVIRONMENTAL ECONOMICS. Emphasis on the understanding of the impact of economic growth on the environmental and the interrelationship between production, private cost minimization, and environmental damage. Prerequisites: Economics 100 or 115. (3 crs.)

ECO 240. COMPARATIVE ECONOMIC SYSTEMS. (3 crs.)

ECO 250. ELEMENTS OF ECONOMETRICS. The application of basic mathematical concepts to economic theories. Relationship of functions and graphs, simultaneous equations, and maximization techniques. (3 crs.)

ECO 255. INPUT-OUTPUT ANALYSIS. (3 crs.)

ECO 260. REGIONAL ECONOMICS. (3 crs.)

ECO 275. MANAGERIAL ECONOMICS. An extension of microeconomic theory to specific, case-oriented subjects, with emphasis on the decision-making process of a given firm. Production theory, empirical estimates of market demand, and demand constraints. Prerequisites: Economics 115 or 250. (3 crs.)

ECO 300. APPLIED ECONOMETRICS. (3 crs.)

ECO 305. COLLECTIVE BARGAINING. An introduction to the collective bargaining model as a decision-making process in the workplace. Current federal and state legislation governing the bargaining relationship is examined, and specific strategies and tactics are discussed. Designed to broaden the student's perspective of union-management relations. (3 crs.)

ECO 313. ACCOUNTING III. (3 crs.)

ECO 314. ACCOUNTING IV. (3 crs.)

ECO 315. COST ACCOUNTING. The various types of cost, systems, budgetary-control procedures, and other cost-related subjects. A modest use of automatic data processing and a wide use of problem techniques. Prerequisite: Economics 313. (3 crs.)

ENG 266. THE AMERICAN EXPERIENCE IN LITERATURE: 20TH CENTURY. (3 crs.)

ENG 305. LITERATURE FOR THE ADOLESCENT. An examination of reading materials available for the teaching of both general and academic classes, grades 7 to 12, designed to acquaint the potential teacher with these materials and the technique of presenting them. Required of all Secondary English and Communication majors. (3 crs.)

ENG. 307. JOURNALISM I. Basic instruction and practice in the gathering of news from various sources; in-class experience in writing in accepted newspaper style. (3 crs.)

ENG 310. SURVEY OF OLD AND MIDDLE ENGLISH. A study of English literature, read in modern English, from its beginnings to around 1400. Works examined include Beowulf, elegiac and Christian poetry, early drama, and romance. The historical and social background of the period. (3 crs.)

ENG. 316. MYTHOLOGY I. An exploration of the origins of mythology and various myths through a study of samples from Greek, Roman, Nordic, Oriental, African, and American Indian mythologies. The roles of gods and heroes in the indicated cultures. (3 crs.)

ENG 317. MYTHOLOGY II. A further examination of mythology, with emphasis on legends and folktales, through study of English, Irish, German, Italian, French, and American mythologies. (3 crs.)

ENG 321. THE ENGLISH RENAISSANCE: SKELTON THROUGH DONNE. A study of the nondramatic prose and poetry chosen from such writers as Wyatt, Surrey, Sackville, Skelton, Sidney, Spenser, Shakespeare, and Donne, with emphasis on such literary genres as the lyric and sonnet, and an examination of various philosophical, historical, and social documents. (3 crs.)

ENG 322. THE ENGLISH RENAISSANCE: BACON THROUGH MARVELL. A study of the nondramatic prose and poetry of England in the seventeenth century from the works of Donne, Jonson, Herrick, Herbert, Milton, and Vaughan. Emphasis on the three schools of poetry of this century. (3 crs.)

ENG 331. RESTORATION AND EIGHTEENTH CENTURY: DRYDEN THROUGH POPE. A concentrated study of the major literary figures of the late seventeenth and the first forty years of the eighteenth century, including Dryden, Congreve, Addison, Steele, Defoe, Swift, Gay, and Pope. (3 crs.)

ENG 332. RESTORATION AND EIGHTEENTH CENTURY: RICHARDSON THROUGH BURNS. An examination of the work of Richardson, Fielding, Smollett, Sterne, Gray, Cowper, Burns, Johnson, Walpole, Goldsmith, and Sheridan. (3 crs.)

ENG 341. ROMANTIC LITERATURE. An intensive study of selected works by such Romantic poets as Wordsworth, Coleridge, Shelley, Keats, Byron, and Blake. (3 crs.)

ENG 342. VICTORIAN LITERATURE. A historical and critical survey of the poetry and non-fictional prose of the Victorian period through such writers as Tennyson, Browning, Arnold, Rosetti, Hopkins, Mill, Ruskin, Newman, Huxley, and Pater. (3 crs.)

ENG 345. ENGLISH GRAMMAR AND USAGE. A practical study of traditional and modern approaches to grammar. Required of all Secondary English and Communications majors. (3 crs.)

ENG 346. HISTORY OF THE ENGLISH LANGUAGE. A survey of the development of the language from its Germanic base to the emergence of American English. Explanations of sound shifts and foreign and social influences. Required of all Secondary English majors. (3 crs.)

ENG 347. INTRODUCTION TO LINGUISTICS. An examination of the several areas of language study: history of the language, phonology and morphology grammars (traditional and modern), and contemporary American usage, dialects, lexicography, and semantics. (3 crs.)

ENG 348. HISTORY OF LITERARY CRITICISM. An examination of major critical documents from Plato through the modern critics. An intensive examination of the works themselves, with some additional concern on their place in literary history. (3 crs.)

ENG 355. SURVEY OF THE ENGLISH NOVEL I: THE BEGINNINGS THROUGH SCOTT. A study of the development of the novel from its beginnings through the Romantic period, with emphasis on Defoe, Richardson, Smollett, Stern, and Austin. (3 crs.)

ENG 356. SURVEY OF THE ENGLISH NOVEL II: DICKENS TO THE PRESENT. A study of the novels and novelists of the Victorian period and the twentieth century, including Dickens, Bronte, Thackeray, Eliot, Conrad, Joyce, and Woolf. (3 crs.)

ENG 357. 20TH CENTURY BRITISH LITERATURE TO WORLD WAR II. A study of fiction, drama, and poetry with emphasis on Yeats, Lawrence, Shaw, Joyce, Conrad, Woolf, Forster, and Auden. (3 crs.)

ENG 358. CONTEMPORARY LITERATURE SINCE WORLD WAR II. An exploration of major genres in English and Continental literature by such authors as Mailer, Vonnegut, Fowles, Lowell, Kesey, Durrell, Malamud, Plath, Gunn, Pasternak, Beckett, Genet, Ionesco, and Brecht. (3 crs.)

The following courses examine major authors and trends of the periods indicated. Secondary English majors are required to complete any two of these three courses.

ENG 365. SURVEY OF AMERICAN LITERATURE TO 1865. A study of the writings of the Colonists, the Federalists, the Romantics, the Transcendentalists, and others, with emphasis on the Puritan ethic, early American social history, and the widening conflicts in American culture. (3 crs.)

ENG 366. SURVEY OF AMERICAN LITERATURE FROM 1865 TO WORLD WAR I. A study of the emergence of modern American literature through the work of Whitman, Dickinson, Twain, Harte, Howells, Jemes, Dreiser, and others. (3 crs.)

ENG 367. SURVEY OF AMERICAN LITERATURE SINCE WORLD WAR I. A study of the literature from 1914 to 1971, concerned with such writers as Hemingway, Frost, Faulkner, Wolfe, Fitzgerald, Sandburg, Dickey, Stevens, and others. (3 crs.)

ENG 375. ADVANCED WRITING. A presentation of the theories of expository, persuasive, and specialized report writing, and the opportunity for the student to practice these under editorial supervision. Required for all Secondary English and Communication majors and all Liberal Arts Writing majors. Prerequisites: English Composition I and English Composition II or equivalent writing ability. (3 crs.)

The following courses develop special techniques through a study of theory and writing practice.

ENG 376. CREATIVE WRITING: FICTION. (3 crs.)

ENG 377. CREATIVE WRITING: POETRY. (3 crs.)

ENG 378. CREATIVE WRITING: DRAMA. (3 crs.)

ENG 407. JOURNALISM II. A continuation of the newswriting principles presented in ENG 307, as applied to specialized news situations. Prerequisite: Journalism I or equivalent news-writing ability. (3 crs.)

ENG 408. JOURNALISM III. An advanced study of the roles of editor and special staff assignment, with emphasis on editing copy, laying out pages, and understanding basic typography and the responsibility of production. Prerequisite: Journalism I or equivalent news writing ability. Journalism II recommended before taking this course. (3 crs.)

ENG 415. CHAUCER. A study primarily of the *Canterbury Tales* as reflective of the author and his times. (3 crs.)

ENG 425. SHAKESPEARE I. (3 crs.)

ENG 426. SHAKESPEARE II. (3 crs.)

Each of these courses explores different sets of Shakespeare's plays, with emphasis on his times and theatre and the universal content of the plays.

ENG 427. MILTON. An examination of the major poetry: *Paradise Lost, Paradise Regained, Samson Agonistes* and *Lycidas.* The prose will be treated only insofar as it is related to the poetry. (3 crs.)

ENG 440. LINGUISTICS AND THE TEACHING OF ENGLISH. A presentation of the practical application of modern linguistic developments and theory to the teaching of language acquisition, reading, grammar, and writing. (3 crs.)

ENG 445. DESCRIPTIVE LINGUISTICS. An examination of the methods used by linguists to describe languages in terms of their own internal structures. Topics explored include world language families, language classification, writing systems, inventories of speech sounds, and other related material. (3 crs.)

ENG 446. INFORMATION THEORY, SEMANTICS, AND PSYCHOLINGUISTICS. A survey of recent attempts to describe speech meaning as developed by variant theory sources. Topics covered include cybernetics, information theory, etymology, language learning, communication in cultures, and other related material. (3 crs.)

ENG 447. PHONOLOGY AND MORPHOLOGY OF AMERICAN ENGLISH. An examination of the language in terms of systems and structures, simple designs, conformities, and aberrations. Regional dialect and Black American English will be discussed in detail. (3 crs.)

ENG 448. PRACTICAL CRITICISM. Designed to provide examples of criticism and the opportunity to criticize poetry, fiction, and drama. Required of all Secondary English majors. (3 crs.)

ENG 478. DIRECTED STUDIES IN ENGLISH. An opportunity to pursue a specific interest in literature or linguistics under the personal direction of a member of the English faculty. Students must submit a one-page summary of intent and method to the Department Chairman in the term prior to the one in which they plan to take the course. Required of all Arts and Science and Secondary English majors. (3 crs.)

The following courses vary in subject matter, depending on the assigned instructor. They permit the student to study in some detail a specific aspect of the literature of the period noted. Students should have a general knowledge of the period before electing any of these courses.

ENG 481. STUDIES IN OLD AND MIDDLE ENGLISH LITERATURE. (3 crs.)

ENG 482. STUDIES IN RENAISSANCE LITERATURE. (3 crs.)

ENG 483. STUDIES IN THE RESTORATION AND EIGHTEENTH CENTURY. (3 crs.)

ENG 484. STUDIES IN NINETEENTH CENTURY LITERATURE. (3 crs.)

ENG 485. STUDIES IN TWENTIETH CENTURY ENGLISH LITERATURE. (3 crs.)

ENG 486. STUDIES IN THEMES IN AMERICAN LITERATURE. (3 crs.)

ENG 487. STUDIES IN AMERICAN LITERARY GENRES. (3 crs.)

ENG 488. STUDIES IN DRAMA. (3 crs.)

ENG 490. STUDIES IN LITERARY CRITICISM. (3 crs.)

ENG 495. CREATIVE WRITING SEMINAR. (3 crs.)

ENG 591. SEMINAR IN MAJOR AUTHORS OF ENGLISH LITERATURE. (3 crs.)

ENG 592. SEMINAR IN MAJOR AUTHORS OF AMERICAN LITERATURE. (3 crs.)

ENG 593. SEMINAR IN THEMES IN AMERICAN LITERATURE. (3 crs.)

ENG 594. SEMINAR IN LITERARY GENRES. (3 crs.)

The courses listed under the LIT prefix are all introductions to literature, with emphasis on the subject matter indicated in the title. They are aimed at the general student and may not be counted as English major courses.

LIT 115. MAN'S VIEW OF GOD. An examination of man's view of God from ancient times to today through the literature which reflects these views. Particular emphasis is on the Bible as literature. Discussion includes topics such as extrasensory perception, witches, devils, and intuition. (3 crs.)

LIT 116. MYTH, MAGIC, AND MYSTICISM. A study of the use in literature of magic, fantasy, mysticism, and myth. Concerned with theoretical explanation and literature describing immediate experience. (3 crs.)

LIT 117. LOVE THEME IN LITERATURE. A discussion of the recurring love theme in literature, with particular emphasis on spiritual, familial, and romantic love. Materials examined include fiction, poetry, and drama. (3 crs.)

LIT 118. THE AMERICAN HERO. An examination of the development of the American hero in fiction, with specific emphasis on the nature of the hero, his character, and his maturation. (3 crs.)

LIT 125. THE AMERICAN WEST. A general introduction to the literature of the Great American West through an examination of a variety of literary types. (3 crs.)

LIT 126. SLAVIC LITERATURE. (3 crs.)

LIT 127. WOMAN AS HERO. An exploration of heroic roles assigned to women in literature, the contrast between reality and the literature, and the differences between fictional women created by male and female authors. An analysis of the reasons for these differences form part of the subject matter. (3 crs.)

LIT 128. THE ADOLESCENT IN LITERATURE. A study of short stories, short novels, and poetry focusing on adolescence, and how young people have bridged the gap between childhood and maturity. Emphasis on the concept of self-awareness. (3 crs.)

LIT 130. ATHEISM AND EXISTENTIALISM. A discussion of the philosophies of atheism and atheistic and theistic existentialism through philosophical background application in a variety of literary works. (3 crs.)

LIT 135. THEMES IN AMERICAN DRAMA. A survey of the themes of past and present American dramas and dramatists, including O'Neill, Miller, Williams, and Inge. (3 crs.)

LIT 136. TIME IN LITERATURE. (3 crs.)

LIT 137. SATIRE. An examination of the theory and practice of satire from Chaucer to *Mad* Magazine and other contemporary works. (3 crs.)

LIT 138. WAR IN NOVEL. (3 crs.)

LIT 140. SEA FICTION (3 crs.)

LIT 145. WAR IN 20TH CENTURY (3 crs.)

LIT 146. SEARCH FOR IDENTITY. A discussion of the major modern writers who deal with the question of finding one's identity within various world cultural systems. Emphasis on an examination of the individual's role in his own socio-economic system. (3 crs.)

LIT 147. SCIENCE FICTION. An introductory survey to the forms of science fiction, with particular emphasis on the authors' ability to communicate and predict future developments. (3 crs.)

LIT 148. HORROR IN LITERATURE. An examination of the tradition of horror literature in England and America from a literary, historical, and psychological viewpoint. Some emphasis on the sociological implications of the popularity of the form. (3 crs.)

LIT 150. BASEBALL IN LITERATURE. A survey of the great American past-time in fiction and reportage. Offered only in the spring semester. (3 crs.)

LIT 156. LITERATURE OF ECOLOGY. (3 crs.)

LIT 157. FICTIONAL FUTURES. An examination of those speculative fiction writers who have concerned themselves with the positive and negative potential earth futures which may occur as a result of current trends and ideas. (3 crs.)

LIT 158. PSYCHOLOGY AND LITERATURE. A study of American and European fiction from the perspective of psychological terms and concepts. Such topics as personality types, emotional disorders, the role of father/mother, the maturation process, sexual behavior, and motivation examined through literary analysis. (3 crs.)

LIT. 160. AMERICAN NATURE WRITERS. An introduction to the best of America's great naturalists, emphasizing the development of informed and educated attitudes toward the American earth as an organic entity worthy of protection from exploitation. The literature of ecology particularly emphasized. (3 crs.)

LIT 165. AMERICAN FOLKLORE. A general introduction to the appreciation and understanding of the folklore of the American people, including humor, tales, legends, beliefs and customs, ballads and songs, superstitions, proverbs, speech, riddles, games, and rhymes. (3 crs.)

LIT 166. SACCO-VANZETTI CASE. An examination of the mass of literature which resulted from the famous court trial and conviction of the 1920's which many felt to be political injustice. (3 crs.)

LIT 167. ASIAN LITERATURE. An introduction to the literary traditions and genres of the Orient against the background of social, political, and cultural developments in China, Japan, and Vietnam. (3 crs.)

LIT 168. SOVIET LITERATURE (3 crs.)

LIT 170. ALL ABOUT WORDS. A survey of words — their structure and function, use and abuse. Words examined as games, formulas, gestalts, messages, weapons, and blinders. (3 crs.)

LIT 175. CENSORSHIP, PORNOGRAPHY, AND THE LAW. An examination of such topics as the psychology of erotic realism, the history of erotica, censorship and the Anglo-American Constitutional System, and the economics and corruptability of pornography. (3 crs.)

LIT 176. MAN AND MACHINE IN LITERATURE. A discussion of the profound impact of technology on contemporary life through developments in industry, the media, warfare, transportation, medicine, and education. Man and his reactions to the machine are examined through their manifestation in his literature. (3 crs.)

LIT 177. SOCIAL PROTEST. An examination of the cultural conditions which make social protest necessary, and the various forms such protest takes in literature, with emphasis on the last 20 years of history. (3 crs.)

LIT 178. LITERATURE AND FILM. A study of the total relationship between literature and film, with emphasis on the involvement of literary writers in motion pictures and television, the process of literary adaptations, and the influence of motion picture on literary critics and writers. (3 crs.)

ENVIRONMENTAL STUDIES

XES 100. MAN AND HIS ENVIRONMENT. The broad field of environmental management. Man's biological basis, soils, land use, water pollution, air pollution, noise pollution, and agencies and laws associated with the above topics. No one area will be covered in depth. Rather, the student will be introduced to each problem, its source, current corrective measures, and possible future technology. (3 crs.)

XES 200. ENVIRONMENTAL CONSERVATION. Renewable natural resources. Units for discussion and study include soil use and abuse, water management, wildlife functions and conservation, and the role of environmental quality in future priorities. (3 crs.)

XES 210. CONSERVATION IN OUTDOOR LIVING. The philosophy, understanding, attitudes, and knowledge essential for counseling and outdoor living experiences. The acquisition of the skills of campcraft, outdoor living, safety, and survival. The planning, developing, and utilizing of outdoor sites and laboratories. Four class hours per week. (3 crs.)

XES 259. ENVIRONMENTAL RESOURCE PROBLEMS. An independent study with a cooperating faculty member. Emphasis on scientific research on contemporary environmental problems. These independent studies are to be as field-oriented as possible, with a final research paper written in proper scientific notation. (Note: As of January, 1975, no environmental studies student may enroll in more than eight (8) credit hours of this course within his/her total college curriculum.) (VC)

XES 300. INTERPRETATION. To acquaint students with opportunities, through practical work in the field, for the interpretation of natural and physical phenomena. Explores the environments of plants and animals in the complex interrelationships of nature. The study of the conservation and horticulture practices necessary in the preservation and maintenance of our environmental resources. Covers the four seasons of the year. Prerequisites: Botany and Zoology. Four class hours per week. (3 crs.)

XES 318. DEVELOPING TRAILS AND TRAILSIDE MUSEUMS. Designed to give the student interested in pursuing conservation as an occupation. Practical knowledge in the construction of nature trails. This course covers proper construction, signing, and use of nature trails by the interpretive naturalist. Also provides field experience in the establishment, operation and function of nature museums. Prerequisites: Botany, Zoology, and Interpretation. (3 crs.)

XES 421. GAME HABITAT MANAGEMENT. Application of historical and economic aspects of game problems to present-day conditions. Field and laboratory studies with demonstrations of basic game management. Prerequisites: Botany, Zoology, and Interpretation. Five class hours per week. (3 crs.)

XES 422. WILDLIFE TECHNIQUES. Field studies of basic techniques necessary in the study and use of fish, wildlife, and outdoor recreation skills, with emphasis on use in Conservation and Outdoor Education programs. Methods in observation, area studies, collecting, field data, habitat evaluation and relationships, and basic program methods and procedures. Prerequisites: Botany, Zoology, Ecology, Interpretation. Four class hours each week. (3 crs.)

XES 490. ENVIRONMENTAL EDUCATION WORKSHOP. An interdisciplinary summer program designed to prepare the public school teacher for teaching environmental education. This workshop considers all aspects of the relationship of man and his institutions to the environment. It also has a large "how to do" component (VC)

XES 491. SEMINAR. (2 crs.)

XES 492. SEMINAR. (2 crs.)

XES 493. SEMINAR. (2 crs.)
Specific topics of technical importance to the Environmental Studies major. Examples are: preparation of environmental impact statements; environmental laws, rules, and regulations (Both Federal and State); the use of various forms of the media to influence public environmental attitudes.

XES 494. SEMINAR — NATURE CONSERVATION. Lectures, individual reports, panel discussions, and individual project assignments concerning the environment and man's future roles in improving the quality of life. (3 crs.)

FRENCH

FRE 100. BASIC CONVERSATIONAL FRENCH. Introductory French conversation for those who wish to learn spoken French, or for those intending to stay or travel in a French-speaking area. Emphasis on the practical application of spoken French to everyday situations. Prerequisite: none. Two credits, elective only, no credit toward a major in French. (2 crs.)

FRE 101. ELEMENTARY FRENCH I. For the student without previous knowledge of French. The development of the fundamentals of correct idiomatic French. Basic sound patterns and sentence structures: hearing and speaking, then reading and writing. Classroom instruction is supplemented by laboratory study and practice. Three class hours each week and one hour language laboratory per week. (3 crs.)

FRE 102. ELEMENTARY FRENCH II. A continuation of French 101. Three class hours each week and one language laboratory per week. Prerequisite: French 101 or one year of high school French. (3 crs.)

FRE 203. INTERMEDIATE FRENCH I. French grammar and reading. For students who have completed French 101 and 102 or two years of high school French. A review of essential French grammar. Development of audiolingual comprehension and reading and writing facility. Three class hours each week; one hour language laboratory per week. Prerequisites: French 101 and 102 or two years of high school French. (3 crs.)

FRE 204. INTERMEDIATE FRENCH II. Continuation of French 203. After a short review of grammar, structural patterns are further developed through reading and discussion of selected prose by modern authors. Prerequisite: French 203 or equivalent. Three class hours and one hour language laboratory each week. (3 crs.)

FRE 211. FRENCH CONVERSATION, COMPOSITION, AND PHONETICS I. Cultural themes as a basis for idiomatic conversation and discussions; written compositions are assigned to teach the student how to write correct French. Three class hours and one hour language laboratory per week. Prerequisite: French 204. (3 crs.)

FRE 212. FRENCH CONVERSATION, COMPOSITION, AND PHONETICS II. Continuation of French 211 on a more advanced level as reflected in conversation. Three class hours and one hour language laboratory per week. Prerequisite: French 211 or completion of French 204 with the grade A or B. (3 crs.)

FRE 290. FRENCH CULTURE AND CIVILIZATION I. A study of the most significant aspects of French history, from the Middle Ages to modern times. Selections from literary works and other prose writings, with discussions of the social political, economic, and cultural aspects of France. Three class hours and one hour language laboratory per week. Prerequisite: French 211 or 212 or permission. (3 crs.)

FRE 291. FRENCH CULTURE AND CIVILIZATION II. A continuation of French 290. Prerequisite: French 211 or 212 or permission. (3 crs.)

FRE 295. STUDIES IN FRENCH CULTURE. Taught in English; no previous knowledge of French required. Films, slides, music, graphic materials, and other educational media illustrate the French way of life, past and present. Art, music diplomacy, cuisine, education, architecture, customs, and all facets of French culture and civilization. (3 crs.)

Subjects change from semester to semester, and may be repeated for additional credit so long as the topic remains different. Three class hours each week. No prerequisites.

FRE 305. FRENCH LITERATURE OF THE 16TH CENTURY. Three class hours each week. Prerequisite: French 321 or French 322. (3 crs.)

FRE 306. FRENCH LITERATURE OF THE 17TH CENTURY. Three class hours each week. Prerequisite: French 321 or French 322. (3 crs.)

FRE 307. FRENCH LITERATURE OF THE 18TH CENTURY. Three class hours each week. Prerequisite: French 321 or French 322. (3 crs.)

FRE 308. FRENCH LITERATURE OF THE 19TH CENTURY. Emphasis on the romantic and realist periods. Three class hours each week. Prerequisite: French 321 or French 322. (3 crs.)

FRE 315. FRENCH LITERATURE OF THE 20TH CENTURY. Emphasis on recent and contemporary schools of thought. (3 crs.)

FRE 321. SURVEY OF FRENCH LITERATURE I. A general survey of French literature from the Middle Ages to 1800. Three class hours each week. Prerequisite: Twelve hours of French beyond French 102. (3 crs.)

FRE 322. SURVEY OF FRENCH LITERATURE II. A general survey of French literature of the 19th and 20th centuries; the principal novelists, poets, and dramatists of the romantic, realist and modern periods. Three class hours each week. Prerequisite: 12 hours of French beyond French 102. (3 crs.)

FRE 469. STUDIES IN FRENCH LITERATURE. Subject matter to be arranged. Designed for French majors who wish to take additional credits. Prerequisite: 18 hours of French. (VC)

FRE 479. FIELD WORK IN FRENCH STUDIES. Study outside the United States, usually in Canada or France. Subjects chosen from courses offered in the French language at an established and accredited educational institution. Three class hours each week or according to the program of the institution. (VC)

FRE 490. READINGS IN FRENCH LITERATURE. A particular period, problem, or literary genre. Intended for students who have already had the survey of French literature and have a general grasp of the fundamentals of French. Subject matter varies from term to term, and the materials are selected according to the professor and student needs. Three class hours each week. Prerequisites: French 321 or French 322. (3 crs.)

GEOGRAPHY

GEO 100. INTRODUCTION TO GEOGRAPHY. The physical factors of the environment and man's adjustment to them. World patterns of landforms, climate, soils, vegetation, etc., emphasized in relation to economic and cultural activities. (3 crs.)

GEO 105. HUMAN GEOGRAPHY. The existing group patterns and the spatial distribution of the occupants of the earth. Broad lines of human evolution and recent economic and demographic changes. (3 crs.)

GEO 170. GEOGRAPHIC CONCEPTS AND TECHNIQUES. Introduction of core topics fundamental to geographic philosophy and exposure to basic procedures important to geographic research. (3 crs.)

GEO 200. ECONOMIC GEOGRAPHY. The geographical bases for the production, manufacture, and distribution of the earth's resources, and the relationship arising as man engages in making a living. (3 crs.)

GEO 215. POPULATION GEOGRAPHY. A consideration of demographic processes and the determinants and consequences of population trends. Special emphasis on distributional patterns and environmental problems. (3 crs.)

GEO 216. URBAN POPULATION. An investigation and examination of population numbers, distribution, and characteristics as they apply to urban places. The United States serves as a microstudy area. (3 crs.)

GEO 220. GEOGRAPHY OF THE AMERICAN ENVIRONMENT. A regional study of the United States in which Pennsylvania is used as an example of microgeography. The physical environment as the setting for the multifaceted life of Americans. Problems resulting from the interaction between people and that environment. (3 crs.)

GEO 240. HUMAN ECOLOGY. Man's interaction with the elements of the natural environment. Emphasis on problems created by man's adjustments to the natural environment. The principles of conservation are stressed. (3 crs.)

GEO 245. URBAN ECOLOGY. Major urban problems of the American city in an ecological perspective. Emphasis on the generation and developmental processes from rural to urban landscape. Special concentration on suburban entry into the urban system. (3 crs.)

GEO 250. GEOGRAPHIC ASPECTS OF URBAN ANALYSIS. The role of geography in the development and problems of urban areas. Specifically, it familiarizes students with the forces influencing the spatial character of urban economic, political, and social systems. Data collection, analysis, and mapping. (3 crs.)

GEO 270. CONTEMPORARY GEOGRAPHIC PROBLEMS. Various physically and human-oriented courses based on the application of geographic techniques and concepts to selected problems of spatial interaction. Specific course topics and course numbers are available at each registration. (3 crs.)

GEO 300. MARKETING GEOGRAPHY. A geographic analysis of the factors involved in the production and distribution of economic goods. Local and world patterns of commerce and industry and their effect on national and international affairs. Recommended: Economic Geography. (3 crs.)

GEO 305. TRADE AND TRANSPORTATION. The principles of transportation, characteristics of common transport modes, and the evolution of transport services in the U.S.A. as they relate to national land space. The basics of international maritime commerce and some selected foreign transport case studies. Recommended: Economic Geography, Principles of Economics, or Geography of the American Environment. (3 crs.)

GEO 310. URBAN GEOGRAPHY. An analysis of cities in selected regions. Classification, location, distribution, function, and growth, as well as types and patterns of land use. (3 crs.)

GEO 315. URBAN TRANSPORTATION. The characteristics of urban functions, structure, location, and internal patterns associated with spatial variation in transportation systems. Urban problems related to transportation. (3 crs.)

GEO 316. METHOD OF URBAN ANALYSIS. Provides training in the quantitative methods of urban research. Consideration given to statistical techniques for analyzing cities and urban regions. Attention given to analysis of the urbanization process and the development of urban systems. (3 crs.)

GEO 317. URBAN LAND USE ANALYSIS AND PLANNING. An analysis of the structure of urbanized areas, with particular emphasis on the description, patterns, and trends in urban land use. Methods for defining, representing, and evaluating land use. Explanations of land use patterns through factor models. (3 crs.)

GEO 318. GEOGRAPHY OF CHINA. A geographic study of the historical, cultural, political, and economic factors as they combine to make twentieth-century China an important factor in world affairs. Traditional Chinese society, the impact of the West, modern China, and the physical environment. (3 crs.)

GEO 320. GEOGRAPHY OF THE UNITED STATES AND CANADA. A regional study of the United States and Canada, considering man's adjustment to the physical factors of relief, climate, soil, vegetation, and mineral resources. Political structure and the relationships between the two countries and the rest of the world. (3 crs.)

GEO 325. GEOGRAPHY OF EUROPE. Europe's natural and political regions, the complexity of the continent's natural and cultural features, and the effect they have had on the occupants, past and present. (3 crs.)

GEO 326. GEOGRAPHY OF PENNSYLVANIA. A regional analysis of Pennsylvania, emphasizing man's cultural and economic response to environmental factors. Field trips are an integral part of the course. (3 crs.)

GEO 327. GEOGRAPHY OF EAST CENTRAL EUROPE. A systematic and regional geography of the Communist states of East Central Europe, including Poland, Czechoslovakia, Hungary, Rumania, Albania, Yugoslavia, and Bulgaria. The geographic trends and problems in these countries in the postwar period. (3 crs.)

GEO 328. GEOGRAPHY OF LATIN AMERICA. The effects of the physical environment of Latin America upon human activities. Effects of the historical background, types of governments, and ethnic backgrounds of the peoples upon the development of the natural resources of Latin America. The study is regional by nations. (3 crs.)

GEO 330. GEOGRAPHY OF THE SOVIET UNION. A regional study of the physical and cultural features of the Soviet Union. Emphasis is placed upon the factors responsible for the current position of the Soviet Union as a major world power, and upon potential future development. (3 crs.)

GEO 335. GEOGRAPHY OF ASIA. The geography of South and Southwest Asia including the Middle East and India. Emphasis on the relationships between the Moslem and Hindu worlds, and the relationships between the Moslem world and the state of Israel. Problems of economic development. (3 crs.)

GEO 336. GEOGRAPHY OF THE FAR EAST. The geography of Japan, Korea, and Southeast Asia. A comparison is made between industrialized Japan and the agricultural nations of Southeast Asia. The impact of the Far East on the modern international scene. (3 crs.)

GEO 337. GEOGRAPHY OF AFRICA. The physical background and the human set-up of Africa are first surveyed to achieve a general understanding of that continent. Modern problems of African nations are further examined within the framework of several broad regions. Recommended: Introduction to Geography and/or Human Geography. (3 crs.)

GEO 338. GEOGRAPHY OF THE PACIFIC BASIN. Lands and people of the great ocean. Particular attention given to Australia, Indonesia, New Zealand, and the Philippines. (3 crs.)

GEO 340. HISTORICAL GEOGRAPHY. A study of the interrelationships between the natural environment and the historical development of the United States. The attraction of North America for colonization, the expansion from sea to sea, the absorption of millions of immigrants, the schism and refusion of the nation, and the development of resources to a position of world power. (3 crs.)

GEO 345. POLITICAL GEOGRAPHY. A political geography, giving attention to internal and external problems of state, as influenced by human and natural resources. (3 crs.)

GEO 370. MAP INTERPRETATION. A non-technical laboratory course designed to develop competence in map use and evaluation. The history of maps; use and interpretation of globes, cartograms, diagrams, and topographic maps; theory of map construction and the application of maps and mapping techniques to teaching. Recommended for all education majors — no prerequisites. (3 crs.)

GEO 371. CARTOGRAPHY. Designed to acquaint the student with the history of maps and mapping; the interpretation of globes, cartograms, and geographic diagrams; the nature and functions of maps, including concepts of scales and cartographic symbols; and the use of cartographic tools and equipment in map construction. (3 crs.)

GEO 372. MAP AND AERIAL PHOTOGRAPH INTERPRETATION. An intensification and application of cartographic methods to include statistical representation, map reproduction, and familiarization with technical equipment. The use of maps and aerial photographs as sources of quantitative and qualitative information. The principles of image identification, simple photo-grammetric measurements, mapping from aerial photographs, and interpretation of natural and cultural landscape. (3 crs.)

GEO 373. STATISTICAL CARTOGRAPHY. The statistical approach to cartographic representation. Methods of data manipulation, problems of symbolization, and techniques of presentation. (3 crs.)

GEO 409. SPECIAL PROBLEMS IN GEOGRAPHY. Development of individual research problems. Does not replace any course regularly given. Permission of staff required. Hours to be arranged. (VC)

GEO 419. HONORS COURSE IN GEOGRAPHY. Directed reading and research in field of interest chosen by student in consultation with the instructor. Prerequisite: Provisions of the Honors Program of the college. Approval by staff of the department. (VC)

GEO 445. FIELD METHODS IN GEOGRAPHY. An intensive micro-geographic study through actual field work. An advanced course. Permission of staff required for registration. One hour lecture and four to eight hours field work each week. (3 crs.)

GEO 449. RESEARCH PROJECT. Individual geographic research in the field or library; however, upon request of the student and support of the faculty, the course may be tutorial. Students are required to prepare written and oral presentations. Culminating course for the Arts and Sciences major in geography. (3 crs.)

GEO 491. SUMMER FIELD COURSE GEOGRAPHY. Trips are made to various places of geographic interest, where lectures and discussions are conducted. (VC)

GEO 492. GEOGRAPHY WORKSHOP. Designed to provide students with a combination of experiences. Lectures, field work, and laboratory situations. It is hoped that through these experiences the student will gain insights relevant to present-day situations. Permission of staff required. Hours to be arranged. (VC)

GEO 493. SEMINAR IN GEOGRAPHY. Consideration of evolving geographic thought, evaluation of selected geographic literature, and the development of individual or group research projects. Recommended as a culminating course for majors in geography. (VC)

GEO 498. INTERNSHIP IN GEOGRAPHY. The geography intern (during his sophomore, junior or senior year) spends a semester of practical experience with a planning, governmental, business, industrial, or social agency. Credit for the course varies, depending upon the nature of the internship assignment and the number of hours of on-the-job training. The internship culminates with a report submitted by the intern, a report that serves along with the sponsor's evaluation of the intern as a basis for determining the credit and grade given. (VC)

GERMAN

GER 100. BASIC CONVERSATIONAL GERMAN. Introductory German conversation for those who wish to learn spoken German, or for those intending to stay or travel in a German-speaking area. Emphasis on the practical application of spoken German to everyday situations. Prerequisite: none. Two credits, elective only, no credit toward a major in German. (2 crs.)

GER 101. ELEMENTARY GERMAN I. For those who have had no previous instruction in German or who reveal insufficient training for a more advanced level. Develops the fundamentals of correct idiomatic German through basic sound patterns and sentence structure. Language laboratory is used in conjunction with this and the following courses. Three class hours and one hour language laboratory per week. (3 crs.)

GER 102. ELEMENTARY GERMAN II. Continuation of German 101. Three class hours and one hour language laboratory per week. Prerequisite: German 101 or one year of high-school German. (3 crs.)

GER 203. INTERMEDIATE GERMAN I. The goals are understanding, speaking, reading, and writing on a more advanced level. A review of the structural principles covered in German 101 and German 102 and additional structural material, idioms, etc. More emphasis on both speaking and reading. Three class hours and one language laboratory per week. Prerequisite: German 102 or two years of high school German. (3 crs.)

GER 204. INTERMEDIATE GERMAN II. Continuation of German 203, with speaking, reading, writing on a more advanced level. Three class hours and one hour language laboratory per week. Prerequisite: German 203. (3 crs.)

GER 211. GERMAN CONVERSATION, COMPOSITION, AND PHONETICS I. Concentrates on the further development of knowledge and skill in speaking and writing, based upon a relatively small amount of reading particularly well adapted to this purpose. Three class hours and one hour language laboratory per week. Prerequisite: German 204. (3 crs.)

GER 212. GERMAN CONVERSATION, COMPOSITION, AND PHONETICS II. Continuation of German 211, conducted on a more advanced level. Three class hours and one hour language laboratory per week. Prerequisite: German 211 or the completion of German 204 with the grade A or B. (3 crs.)

GER 290. GERMAN CULTURE AND CIVILIZATION. Covers in outline the entire field of German literature, with particular reference to the German people and their historical, political, economic, and geographic background and their art and folklore. Three class hours and one hour language laboratory per week. Prerequisite: German 204. (3 crs.)

GER 295. STUDIES IN GERMAN CULTURE. Designed as an Arts and Science elective in the Modern Language Department; no knowledge of German required.

The individual topic for Studies in German Culture changes from semester to semester. The subject may be an outstanding person (e.g. Goethe), an era (e.g. The Wilhelminian Era), or an entire culture (e.g. Switzerland). As long as the topic remains different, the course may be taken for credit repeatedly. Three class hours each week. No prerequisite. (3 crs.)

GER 305. ROMANTICISM: 1790-1830. Foundation course in understanding the German

Romantic *Weltanschauung* as seen in major writers of the period (Novalis, E. T. A. Hoffman, Kleist, etc.). Three class hours each week. Prerequisite: German 321 or 322. (3 crs.)

GER 306. REALISM TO NATURALISM: 1830-1870. Ideas in transition; prose forms, drama, and poetry in the era immediately preceding German unification, as reflected in works by writers of various nationalities (Grillparzer, Heine, Keller, etc.) (3 crs.)

GER 307. NATURALISM – IMPRESSIONISM: 1870-1920. Concentrated study of literary developments during the half century which witnessed the rise and fall of the German monarchies. Writers represented (among others): Gerhart Hauptmann, Hugo van Hofmannsthal, Franz Kafka, Rainer Maria Rilke, and Thomas Mann. Three class hours each week. Prerequisite: German 321 or German 322. (3 crs.)

GER 308. GERMAN LITERATURE: 1919-1946. Representative writings which reflect various literary trends during the Weimar Republic and the Nazi era, with special emphasis on exile literature. Thomas Mann, Brecht, Hesse, Werfel, Kolbenheyer, and Bonn are among the authors considered. (3 crs.)

GER 315. POST-WAR GERMAN LITERATURE: 1947 TO THE PRESENT. A study of recent developments in German literature, with special emphasis on understanding the impact of conflicting ideologies and aesthetics on post-war German thought. Grass, Johnson, Durrenmatt, Frisch, Doderer, and Weiss are the focal points. (3 crs.)

GER 321. SURVEY OF GERMAN LITERATURE I. Background for study of the history of German literature, presenting a foundation in literary definition (style, form, period) with examination of appropriate examples from the works of leading German-speaking authors. Three class hours each week. Prerequisite: 12 hours of German beyond German 102. (3 crs.)

GER 322. SURVEY OF GERMAN LITERATURE II. Continuation of German 321. Three class hours each week. Prerequisite: 12 hours of German beyond German 102. (3 crs.)

GER 469. STUDIES IN GERMAN LITERATURE. Designed to meet special problems or deficiencies. Prerequisite: 18 hours of German. (VC)

GER 479. FIELD WORK IN GERMAN STUDIES. Study outside the United States, usually in Germany. Subjects are chosen from courses offered in the German language at an established and accredited educational institution. Three class hours each week or according to the program of the institution. (VC)

GREEK

GRE 101. ELEMENTARY GREEK I. Introduces the student to basic Greek grammar and vocabulary, with the aim of developing reading skill in ancient Greek as rapidly as possible. Selections from such authors as Plato, Euripides, and Lysias. In explaining the structure of the Greek language, the instructor will make use of comparative linguistics. (3 crs.)

GRE 102. ELEMENTARY GREEK II. A continuation of Greek 101. Prerequisite: Greek 101. (3 crs.)

HISTORY

HIS 101. HISTORY U.S. TO 1877. The social, political, economic, and intellectual development of the United States to 1877. (3 crs.)

HIS 102. HISTORY U.S. SINCE 1877. The social, political, economic, and intellectual development of the United States since 1877. (3 crs.)

HIS 105. SURVEY OF U.S. HISTORY. Covers as thoroughly as possible the most important ideas and events in American history, and emphasizes the vital role which Pennsylvania played in the historical development of the U.S. (3 crs.)

HIS 111. THE DEVELOPMENT OF MAJOR WORLD CIVILIZATIONS. Focus on the process and interplay of the major world cultures in their evolution. Included are the following contemporary cultures: Indian, Moslem, East Asian (China, Korea, Japan), Slavic, Western European, Latin American, and African. (3 crs.)

HIS 112. MAJOR WORLD CIVILIZATIONS IN TRANSITION. Focuses on the development of the factors which continue to influence the direction of change among the world's cultural areas. (3 crs.)

HIS 121. EUROPEAN LIFE AND SOCIETY TO 1815. The development of the social, economic, political, religious, and cultural experiences of the European people. The decline of monarchial Europe and the major democratic movements in Europe. (3 crs.)

HIS 122. EUROPEAN LIFE AND SOCIETY SINCE 1815. The development of Europe from the Congress of Vienna to the 1970's, with specific examination of the social, political and economic stimulations that led to the emergence of nationalism, dictatorship, and war. (3 crs.)

HIS 145. HISTORY OF LATIN AMERICA. The development of the Latin American countries from the period of discovery to the present. The colonial, revolutionary, and national periods. European and American relations are emphasized. (3 crs.)

HIS 146. HISTORY OF THE FAR EAST. The interaction of East and West, with emphasis on developments since 1800. The impact of modern technology, imperialism, nationalism, and communism on Oriental cultures is given special attention. (3 crs.)

HIS 147. HISTORY OF THE MIDDLE EAST. A review of the history of the peoples of the region, in addition to a consideration of major political, economic, and cultural factors which color international affairs in the Middle East. (3 crs.)

HIS 150. HISTORY OF THE ANCIENT WORLD. A study of the origins of Western civilization from prehistoric man to the disintegration of the Roman Empire, embracing a thorough study of the cultural aspects of the fertile crescent and Greco-Roman civilizations. (3 crs.)

HIS 155. 100 YEARS OF CSC. (3 crs.)

HIS 200. HISTORY OF PENNSYLVANIA. A study of the historical development of Pennsylvania from colonial times to the present; the changes involved in social, political, and economic life are treated from internal and external points of view. (3 crs.)

HIS 205. HISTORY OF POWER. A history of the use of various forms of power in America, with stress on coal and A-power. Covers such early uses of power as human, animal, and water; and past, present, and future uses of alternative forms of power such as the wind, tides, fuel cells, etc. (3 crs.)

HIS 206. RESEARCH METHODS. To introduce students to research and report writings. Theory and practice by examples will illustrate how methods of work and investigation are relevant in all of scholarship. New ideas and methods in history, e.g., quantification. Will not follow the usual classroom lecture format, but will be modified toward workshop/independent problem-solving. (3 crs.)

HIS 210. PROBLEMS IN URBAN HISTORY. Major urban issues of American cities in historical perspective. Historic urban experiences in the United States, and the impact of industrialism, the relationship of urban transportation facilities to urban spatial-social development, urban housing, crime in the city, and the dilemma of urban renewal. (3 crs.)

HIS 215. THE EXPANSION OF AMERICAN FOREIGN POLICY. To develop an understanding of the salient historical patterns that have characterized the foreign policy of the United States. (3 crs.)

HIS 216. HISTORY OF ENGLAND. The rise of England as a world power from the reign of Henry VII to the modern era, with particular attention to the social and economic aspects of British life. The rise and fall of the British colonial empire and its consequences on world affairs. (3 crs.)

HIS 217. THE AFRO-AMERICAN IN U.S. HISTORY. A survey of the role of Afro-Americans in the course of American history, from the beginnings to the present. (3 crs.)

HIS 225. HISTORY OF CONTEMPORARY EUROPE. A topical outline of the major developments in Europe within the last 35 years — developments which have significance in challenging and transforming many of the traditional values of this society. The decline in the pre-eminent position of Europe in world affairs and the rise of a global civilization. (3 crs.)

HIS 226. HISTORY OF MEDIEVAL EUROPE. A study of the political, social, economic, and cultural forces of the Middle Ages, with emphasis on the institutional and cultural life from the fall of Rome to the Renaissance. (3 crs.)

HIS 227. RENAISSANCE AND REFORMATION. A study of Renaissance culture in Europe from the 14th to the 16th century, with emphasis on Italy. Late medieval civilization, humanism, artistic Renaissance, and the growth of the middle class. The universal church, appearance and character of the principle branches of Protestantism, and reform within the Roman Catholic Church. (3 crs.)

HIS 230. HISTORY OF EASTERN EUROPE. The medieval origins of Poland, Czechoslovakia, Hungary, Yugoslavia, and Bulgaria; Romania through the period of national revival of the 19th century, independence after World War I, sovietization after World War II, and re-emerging nationalism. (3 crs.)

HIS 235. 20TH CENTURY WORLD HISTORY. Background and analysis of 20th-century events and emerging issues: the growth of capitalism, imperialism, and totalitarianism, World Wars I and II, and recent efforts toward collective security and international understanding. (3 crs.)

HIS 236. HISTORY OF URBAN AMERICA. The urban experience in America from the 17th century to the present. Urban America in the context of world urbanization, demographic trends, technology, and the implications of these forces on the socio-economic scene of urban development. (3 crs.)

HIS 237. SOCIAL HISTORY OF THE UNITED STATES. A study of the major groupings and ways of thought of the people of the United States from Colonial days to the present. Designed for upper-level students with a background in American history. (3 crs.)

HIS 238. HISTORY OF AMERICAN LABOR. A survey history of American labor from early Colonial times to the present, covering various periods, problems of these periods, solutions proposed to these problems by the American worker, and the vital role American labor has played in the history of our nation from earliest times to the present. (3 crs.)

HIS 240. HISTORY OF THE COLD WAR. The nature of the conflict between the United States and the Soviet Union from 1945 to the mid-1960's. The historical and contemporary global context shaping the evolution of the policies of both countries during that period. (3 crs.)

HIS 245. HISTORY OF RUSSIA. A survey of Russian history, culture, and institutions from the inception of the Kievan state to the present. Emphasis on the pre-Soviet periods and on those aspects of development of the Russian state and people that have played a dominant role in the shaping of Russian character, temperament, and history. (3 crs.)

HIS 247. HISTORY OF ETHNIC AMERICA. Concerns the role of the immigrant in U.S. history from the 18th century through the contemporary period. (3 crs.)

HIS 250. AMERICAN CONSTITUTIONAL HISTORY. A general study of the growth of the American constitutional system, with special emphasis on those aspects of constitutional growth which relate closely to the fundamental structure of the American government and social order. (3 crs.)

HIS 255. FIELD STUDIES IN LOCAL HISTORY. The local aspects of communications, transportation, economic, cultural, and ethnic developments, with the project approach in the field. (3 crs.)

HIS 260. WOMEN IN U.S. HISTORY. An introduction to the study of women from the Colonial era until the present, arranged around topics such as reform, abolition, political activism, working conditions, and contemporary issues. (3 crs.)

HIS 280. SCIENCE, TECHNOLOGY, AND POLICY. Examines the organization and administration of scientific research and development, both private and public, in the U.S. (3 crs.)

HIS 296. THE AMERICAN REVOLUTION, 1763-1789. To introduce students to the period of transition of America from an English colony to nationhood. (3 crs.)

HIS 300. CIVIL WAR AND RECONSTRUCTION. The causes of the Civil War; the military, political, economic, and social developments during the war; the consequences of the post-war period from the standpoint of contemporary developments and their applications today. (3 crs.)

HIS 304. THE GREAT DEPRESSION AND WORLD WAR II. A study of the stresses and strains of the 1930-1945 period of U.S. history, using recent trends in teaching and scholarship. (3 crs.)

HIS 305. CONTEMPORARY HISTORY OF THE UNITED STATES. The unprecedented changes that have occurred in the United States since the beginning of the New Deal. (3 crs.)

HIS 315. HISTORY OF U.S. SECTIONALISM, 1820-1860. The interaction of sectionalistic processes compared with continuing nationalistic trends, as well as the dynamics of political parties from 1848-1860.

HIS 320. THE ANATOMY OF DICTATORSHIP. The basic, social, economic, psychological, and political elements which make up the modern dictatorship. The elements of strength and weaknesses which either destroyed or changed the structure of the original philosophy of dictatorships of our current century in terms of their objectives, aims, and potential. (3 crs.)

HIS 336. AMERICAN URBAN ELITES. The historical evolution of American urban elites. An examination of the changing urban decision-making structure within the context of the contemporary urban crisis. (3 crs.)

HIS 337. ANTEBELLUM REFORM. The study of the various reform movements during the 1800-1860 period of U.S. history. (3 crs.)

HIS 350. ADOLF HITLER. An analysis of the philosophical and psychological elements that led to the rise of National Socialism, and its impact upon the western world. (3 crs.)

HIS 379. SPECIAL PROBLEMS IN HISTORY. Development of individual programs by students. Does not replace any course regularly given. (VC)

HIS 479. SPECIAL PROBLEMS IN HISTORY. (3 crs.)

HIS 495. SEMINAR IN HISTORY. Historical survey of writings in U.S. history as well as trends, developments, and theories in current historiography. (3 crs.)

HUNGARIAN

HUN 469. SELF-INSTRUCTIONAL HUNGARIAN. Students teach themselves, chiefly with tapes. Students must provide their own cassette or tape player and blank tapes. A weekly meeting with a native speaker is held, and grading is based on an examination at the end of the semester. (3 crs.)

ITALIAN

ITA 101. ELEMENTARY ITALIAN I. For the student without previous knowledge of Italian. Develops the fundamentals of correct idiomatic Italian through basic sound patterns and sentence structure. Three class hours and one hour language laboratory per week. (3 crs.)

ITA 102. ELEMENTARY ITALIAN II. Continuation of Italian 101. More reading, and more advanced speaking. Three class hours and one hour language laboratory per week. Prerequisite: Italian 101 or one year of high-school Italian. (3 crs.)

ITA 203. INTERMEDIATE ITALIAN I. A review of essential Italian grammar, and further development of audio-lingual skills and comprehension, as well as reading and writing facility. Three class hours and one hour language laboratory per week. Prerequisites: Italian 101 and 102 or equivalent. (3 crs.)

ITA 204. INTERMEDIATE ITALIAN II. A continuation of Italian 203, with speaking, reading and writing on a more advanced level. Three class hours and one hour language laboratory per week. Prerequisite: Italian 203 or equivalent. (3 crs.)

ITA 295. STUDIES IN ITALIAN CULTURE. Designed as an Arts and Science elective in the Modern Language Department; no knowledge of Italian required.

The topics for Studies in Italian Culture change from semester to semester. The subjects may be significant personalities or movements in literature, painting, sculpture, architecture, music, philosophy or science. As long as the topic remains different, the course may be taken for credit more than once. Three class hours per week. No prerequisites. (3 crs.)

LATIN

LAT 101. ELEMENTARY LATIN I. For the student without previous knowledge of Latin. An introduction to basic Latin grammar and vocabulary with the aim of developing a reading knowledge in Classical Latin. Three class hours each week. (3 crs.)

LAT 102. ELEMENTARY LATIN II. A continuation of Latin 101. (3 crs.)

MATHEMATICS

MAT 100. FUNDAMENTALS OF MATHEMATICS. Sets and their language, numeration systems, properties of natural numbers, whole numbers, integers, rational and real numbers, elementary number theory, modular arithmetic, mathematical systems, elementary algebra, logic, probability, and intuitive geometry. No prerequisites. (3 crs.)

MAT 101. COLLEGE ALGEBRA. Fundamental operations, factoring and fractions, exponents and radicals, functions and their graphs, linear and quadratic equations, systems of linear equations, systems of equations involving quadratics, ratio, proportion, and variation, progressions, the binomial theorem, inequalities and their solutions, complex numbers, theory of equations, matrices and determinants. Prerequisite: three years of high school mathematics or honor grade in Fundamentals of Mathematics. (3 crs.)

MAT 102. COLLEGE TRIGONOMETRY. Logic, set theory, real numbers, functions and relations, circular functions and trigonometric functions, tables and graphs, identities, equations, inequalities, inverse trigonometric functions, solutions of triangles, complex numbers, exponential and logarithmic functions. Adequate background in algebra and some plane geometry desirable. (3 crs.)

MAT 103. ANALYTIC GEOMETRY. Fundamental notions (lines, segments, slopes, angle between lines, graph and equations), conics, simplification by translation and rotation, algebraic and transcendental curves, Polar coordinates, parametric equations, three-dimensional analytic geometry. Prerequisites: high school algebra, trigonometry, and plane geometry desirable. (3 crs.)

MAT 105. BASIC PROGRAMMING LANGUAGE. Elementary computer concepts in such areas as the nature and structure of computers, the history and development of computers, flow charting and elements of the basic language involved in reading and printing, transfer statements, looping, subroutines, conversational programming, etc. The computer language taught is basic. No prerequisites. (3 crs.)

MAT 106. TECHNICAL MATHEMATICS I. Designed to prepare the student for further study in technological fields. Review of basic arithmetic operations, introduction to exponents and radicals, algebra, and linear equations, functions, and graphs. (3 crs.)

MAT 107. TECHNICAL MATHEMATICS II. A continuation of Technical Mathematics I with added emphasis on practical mathematics and the applications of mathematics in business and industry rather than an abstract concept of mathematics. Logarithms, introduction to geometry, a further study of algebra, and introduction to trigonometry and analytic geometry. Prerequisites: Technical Mathematics I or consent of the instructor. (3 crs.)

MAT 108. INTRODUCTION TO COBOL. No prior programming knowledge is required. Designed for the student who seeks a programming language for business applications. Students will be taught the basics of COBOL. (3 crs.)

MAT 111. CALCULUS I. A review of numbers, symbols, and sets; inequalities; introduction to analytic geometry; limits; continuity; differentiation of algebraic functions and some applications of the derivative; and introduction to integration-areas; fundamental theorem of integral calculus. Prerequisite: 550 or better math college board, Analytic Geometry or equivalent. (3 crs.)

MAT 112. CALCULUS II. More analytic geometry; applications of integration — area, volume, fluid pressure work, length of plane curve and area of a surface revolution; transcendental functions; methods of integration. Prerequisite: Calculus I. (3 crs.)

MAT 121. COMPUTER SCIENCE I. The student is taught the Fortran IV language and submits programs to the computer center for execution. Taught on a lecture and laboratory basis. In the laboratory, students are instructed in the use of keypunch and time sharing terminals. Prerequisites: high school algebra or consent of the instructor. (3 crs.)

MAT 135. GEOMETRY. Analysis of axiomatic systems, axiomatic development of elementary Euclidean geometry and non-Euclidean geometry. No prerequisites. (3 crs.)

MAT 151. DIAGNOSTIC AND REMEDIAL TECHNIQUES IN MATHEMATICS. For elementary education majors with an area emphasis in mathematics. Various approaches and methods designed to engage the student in a critical analysis of strengths and weaknesses in approaches to teaching mathematics. Materials and games to remedy deficiencies of the child. Teaching techniques such as flexible grouping patterns and individual instruction. Prerequisites: College Algebra and College Trigonometry. (3 crs.)

MAT 152. INTUITIVE GEOMETRY. The presentation of spherical, projective, and Euclidean geometries by the intuitive method. The introduction of a set of postulates for a finite geometry. The role of geometry in the elementary school curriculum. Not open to math majors or others who have taken MAT 135, Geometry. (3 crs.)

MAT 155. METRIC WORKSHOP. For anyone who wishes to improve his use of the

metric system in all aspects of his daily life. Activities applicable to teachers, parents, and persons in business and industry. Teaching strategies, games, and sources of materials for teachers. (1 cr.)

MAT 171. MATHEMATICS OF FINANCE I. Formulas used in working finance problems and how they are formulated and applied. The use of tables to shorten the arithmetic. Economics students should take this course. A working knowledge of algebra is required. (3 crs.)

MAT 172. MATHEMATICS OF FINANCE II. A continuation of Mathematics of Finance I, encompassing some of the everyday financial problems of an average family (including merchandise shopping with discounts and mark-up problems), shopping for the cost of money (renting money), insurance, taxes, investments as a hedge against inflation, public and private financing, higher education as an investment, etc. Emphasis on underlying principles and mathematical computations. Prerequisites: Math of Finance I or equivalent knowledge of Math of Finance. (3 crs.)

MAT 205. FIELD WORK IN MATHEMATICS. Approximate data and significant digits, the slide rule and desk calculator, linear measurement and scale drawings, angle mirror, hypsometer and clinometer, plane table and alidade, sextant, transit and leveling. A laboratory course, except for lectures presenting the theory. Students are encouraged to make some of the simple instruments. Prerequisite: Trigonometry. (3 crs.)

MAT 213. CALCULUS III. Vectors in the plane, indeterminate forms and improper integrals, polar coordinates, infinite series, and the theory of infinite series. Prerequisite: Calculus II. (3 crs.)

MAT 214. CALCULUS IV. Expands the concepts of vectors in the plane to vectors in three space. The differential calculus and the integral calculus of functions of several variables. The student is shown how the calculus can be applied to systems of particles, e.g., moments and centroids. Prerequisite: Calculus III. (3 crs.)

MAT 215. STATISTICS. For non-math majors, not counted toward a math major. Frequency distribution, percentiles, measures of central tendency, variability, normal distribution, curve, populations, samples and error-sampling distribution of means, sampling distribution of proportion null and alternative hypotheses, type I and type II errors, tests of means confidence and intervals and decision procedures, correlation, chi-square, simple analysis of variance, statistics, and design of experiments. (3 crs.)

MAT 216. LOGIC AND SWITCHING THEORY OF THE COMPUTER. Taught on a lecture-laboratory basis. An in-depth study of digital computers, including the circuits and logic involved in the computer. Prerequisites: MAT 121 and 222. (3 crs.)

MAT 222. COMPUTER SCIENCE II. Solidifies the concepts and methods acquired in MAT 121 and gives the student an opportunity to become more familiar with third-generation computer systems. Three class hours each week with outside assignments requiring programming a digital computer to assist in the solution of problems assigned. Prerequisites: MAT 121 or consent of the instructor. (3 crs.)

MAT 231. ABSTRACT ALGEBRA I. Fundamental concepts of logic, sets, relations, and functions. Groups, fields, rings, and integral domain and the properties associated with these structures. The number systems from the natural numbers to the complex numbers system (its structure and properties). Elementary concepts of number theory. Designed to introduce students to Abstract Algebra in a way that emphasizes the nature of the subject and the techniques of rigorous proof. Prerequisites: Calculus I, Geometry. (3 crs.)

MAT 253. BASIC CALCULUS. The basic ideas of calculus presented primarily through a study of the algebraic functions. Transcendental functions considered. Emphasis on intuitive concepts rather than rigorous proofs. Prerequisites: College Algebra and College Trigonometry. (3 crs.)

MAT 254. MATHEMATICAL INSIGHTS. A gradual introduction to the basic concepts of logic, set theory, and abstract algebra. The axiomatic structuring of these topics is especially emphasized to provide the student with an adequate introduction to problem solving, relations, functions, and probability. A basic lecture course designed for the elementary mathematics major. Prerequisite: MAT 111 or MAT 253. (3 crs.)

MAT 256. COMPUTER AIDED INSTRUCTION (CAI). The concepts of and uses of the computer-aided and computer-managed instruction. Instructional situations to which CAI is applicable, and situations to which the benefits of CAI or CMI would be marginal. Lecture-laboratory. Students are expected to be able to use time sharing terminals and be familiar with at least one conversational computer language, preferable BASIC. In the laboratory session, students will be exposed to various types of CAI programming materials and be instructed in the development of their own CAI "package." (3 crs.)

MAT 275. COMPUTER OPERATIONS. The hardware of the computer and the use and operation of the Central Processing Unit and its peripheral equipment. Lecture and laboratory basis, with greater emphasis on the laboratory. The student will be expected to become familiar with most computer hardware devices and their use in a computer operation. Prerequisites: Computer Science I and II. (3 crs.)

MAT 305. THEORY OF EQUATIONS. Complex numbers, polynomials in one variable, algebraic equations and their roots, limits of roots, rational roots, cubic and biquadratic equations, separation of roots, and approximate evaluation of roots. Prerequisite: MAT 111. (3 crs.)

MAT 306. DIFFERENTIAL EQUATIONS. Ordinary differential equation and its solution. The existence and uniqueness of solutions. Various types of differential equations and the techniques for obtaining their solution. Some basic applications, including some numerical techniques. Prerequisite: Calculus III. (3 crs.)

MAT 307. LOGIC CIRCUITS OF THE COMPUTER. (3 crs.)

MAT 323. ASSEMBLER LANGUAGE PROGRAMMING. The full instruction set of a computer, including supervisor, loader, library, and assembler. Computer organization, representation of numbers and characters, instruction codes, machine language, macros, and subroutines. Prerequisites: Computer Science I and II. (3 crs.)

MAT 332. ABSTRACT ALGEBRA II. A continuation of the study of abstract algebra. The theory of groups, group isomorphism and homomorphism, theory of rings, integral domains and fields, polynomial rings. To prepare students for advanced work in mathematics by a very careful and rigorous study of algebra. Prerequisite: Abstract Algebra I. (3 crs.)

MAT 341. LINEAR ALGEBRA I. An elementary treatment of linear algebra suitable for students in the first sophomore term, offering fundamentals of linear algebra with applications and numerical computations. Emphasis on vocabulary, operational procedures, and computational skills. (3 crs.)

MAT 342. LINEAR ALGEBRA II. Extends the concepts learned in Linear Algebra I. Linear transformations are revisited. Eigenvalues and eigenvectors are investigated. Euclidean spaces are explored. Real quadratic forms are studied, along with the related geometry. The use of linear algebra in solving linear systems of differential equations is introduced. May be elected at any time during the student's fifth, sixth, or seventh semester. (3 crs.)

MAT 361. STATISTICAL ANALYSIS I. Basic concepts of both discrete and continuous probability theory. The concept of a random variable is stressed, and a number of standard distributions are studied in detail. The student is assumed to have taken at least two courses in calculus. A required course for math majors normally taken the second semester of the sophomore or the first semester of the junior year. (3 crs.)

MAT 362. STATISTICAL ANALYSIS II. Fundamental concepts of statistical inference. Covers classical statistical inference, but certain decision theoretic notions also developed. The student is expected to understand the theory underlying certain statistical procedures and be able to solve problems using these procedures. Prerequisite: Statistical Analysis I. (3 crs.)

MAT 375. SYSTEMS ANALYSIS. Some basic concepts and tools of systems analysis within the context of real-life problem situations. Prepares to handle the increasingly complex tasks assigned to people working the computer field. Prerequisites: Computer Science I and II. (3 crs.)

MAT 377. INFORMATION STRUCTURES. The theory and methods of file organization and manipulation of structure data. Data structures, concepts and algorithms used in solution of non-numerical problems. Applications to data management systems, information retrieval, and list processing. Prerequisites: Computer Science I and II. (3 crs.)

MAT 401. ADVANCED CALCULUS I. Students taking this course should have a background in algebra, analytic geometry, and elementary calculus. Presented by lectures along with outside reading and problem assignments. Required by all Arts & Sciences math majors. (3 crs.)

MAT 402. ADVANCED CALCULUS II. Continues where Advanced Calculus I left off in presenting an introductory course in analysis. Students taking this course must have received a passing grade in Advanced Calculus I or its equivalent. Required of all Arts & Sciences math majors. (3 crs.)

MAT 405. TOPOLOGY. Preliminaries (sets, ordering, relations, cardinality, etc.), metric spaces, topologies, separation axioms, convergence, coverings, compactness, etc. Prerequisites: Analytic Geometry and the Calculus sequence. (3 crs.)

MAT 424. NUMERICAL ANALYSIS. Modern methods of numerical analysis, especially as these methods have been influenced by widespread usage of the digital computer. Prerequisites: MAT 121. MAT 214, or consent of the instructor. (3 crs.)

MAT 455. STRUCTURE OF PROGRAMMING LANGUAGES. An introduction to computer syntax, semantics, compiler structure, and technique. The power and limitations of algebraic languages, string manipulation languages, and interactive languages will be studied together with compiler structure and techniques. Prerequisites: Computer Science I and II. (3 crs.)

MAT 469. HONORS COURSE IN MATHEMATICS. Math majors must, as a prerequisite for this course, have completed 64 credits with a QPA of 3.25 in all work. Recommendation of the mathematics faculty and the approval of the department head and Dean of Instruction. No one special textbook for the course. Meets by arrangement. (VC)

MAT 485. SPECIAL TOPICS IN COMPUTER SCIENCE. Provides Mathematics or Mathematics and Computer Science majors with an opportunity to do individual study or research on topics and materials not ordinarily covered by other courses. Subject matter depends on the needs of the students taking it and the faculty member offering it. (3 crs.)

MAT 495. SEMINAR IN MATHEMATICS. Designed for the student wishing to develop more fully certain concepts in Mathematics. A student taking this course must have the approval of the department head. Prerequisite: 18 hours of mathematics. (VC)

MODERN FOREIGN LANGUAGE

MFL 101. ENGLISH AS A SECOND LANGUAGE I. For the foreigner on campus taking courses taught in English. Intended to help him master the language of instruction. Varying degrees of competence will be encountered, and the course will be adapted to the needs of the individual student. (3 crs.)

MFL 102. ENGLISH AS A SECOND LANGUAGE II. A continuation of MFL 101. (3 crs.)

MUSIC

MUS 100. INTRODUCTION MUSIC. Historical, analytical, and aesthetic elements of music. Through the use of recordings, radio, concerts, and other media, every possible contact is made with music. (3 crs.)

MUS 105. SURVEY OF JAZZ. The historical background of jazz from 1900 to the present, the noted figures in jazz and their contributions to the American musical form, and analysis of jazz styles through recordings and live performances. (3 crs.)

MUS 106. TWENTIETH-CENTURY MUSIC SURVEY. A study of the development of contemporary music (including electronic music). Begins with Debussy and considers such prominent figures as Schoenberg, Berg, Webern, Stravinsky, Boulez, Stockhausen, Cage, et al. (3 crs.)

MUS 107. AMERICAN MUSIC. A study of American folk, popular, and art music native and European. Primitive music, psalmody, early opera and concert life, African and European folk music's influences on America, the music of European immigrants, and the roots of Jazz. A chronological study of American composers and their music, including Black composers and their contributions to American music. Recordings of musical examples will be played throughout the semester. (3 crs.)

MUS 108. THE MUSIC OF RUSSIA AND EASTERN EUROPE. The music of Bulgaria, Yugoslavia, Romania, Hungary, Czechoslovakia, the Ukraine, Poland, and Russia. Folk music, nationalistic music, and art music, and their relationship with and contributions to international music. Recorded examples of the music used throughout the course. No prerequisites. (3 crs.)

MUS 115. FUNDAMENTALS OF MUSIC. Designed to provide students with a knowledge of the fundamentals of music and an ability to execute basic skills. Includes the study of note values, meter signatures, scales, key signatures, and the use of syllables in reading music. A basic introduction to the piano keyboard. Strongly recommended for Elementary Education students and any others interested in strengthening their knowledge of music fundaments. (3 crs.)

MUS 196. STAGE BAND. Entrance by interview with Stage Band Director. Required attendance at rehearsals and all public performances. Meets regularly 5th period, Tuesday and Thursday. Other rehearsals as required. (1 cr.)

MUS 197. CALIFORNIA CHORALE. A group of approximately 20 mixed voices. Members are chosen from the student body, faculty, and members of surrounding communities. **Membership is granted only by audition.** The group sings good choral literature, most of which is sung a cappella. (1 cr.)

MUS 201. HARMONY I. Begins with a study of all diatonic chords, along with rules for four-part writing. Introduction to modulation. Extensive ear training. Also included are at least two short original compositions in four parts, with or without words, involving materials studied. Prerequisite: Music 115 or thorough knowledge of music fundamentals (2 crs.)

MUS 205. SIGHT SINGING AND EAR TRAINING. Concentration on sight reading of material traditionally taught in public schools. Includes melody and rhythm, as well as two, three, and four-part singing; ear training in use of intervals, chords, cadences, melodic dictation of easy to moderate difficulty. (2 crs.)

MUS 206. RHYTHMIC EXPERIENCES. Structured for those students in Elementary Education with music as their area of interest. May be an elective for anyone else who has a basic understanding of music fundamentals. The class has two basic aims: (1) to review and fortify previous knowledge and understanding of basic rhythms, meters, note values, sight reading, and related problems associated with rhythm; (2) to present the students with skills and methods of presenting rhythmic activities in the elementary music curriculum. Students participate in actual performances on tuned and non-tuned percussion instruments. (2 crs.)

MUS 207. CHILDREN'S SONG LITERATURE. Study and memorization of songs for all occasions. Songs about animals, seasons, transportation, other countries, etc., are representative of material included. Provides a memory repertoire for the teacher. Students also participate in classroom teaching. (2 crs.)

MUS 208. THE SYMPHONY. A general survey of the development of the symphonic form from earliest practice to the beginning of the 20th century, with emphasis on composers whose primary significance rests on symphonic achievement. (3 crs.)

MUS 211. KEYBOARD I. For the student interested in learning some facility at the piano. Major and minor scales, patterns and fingerings. Chords (I, IV, V_7) in both major and keys followed by their inversions. The common tone chord sequence pattern. A student completing the course should be able to play simple songs — melody with chord accompaniment. (2 crs.)

MUS 302. HARMONY II. A continuation of Harmony I, including more detailed modulation, altered chords, and analysis. At least one short four-part composition, written according to specification, is required. Prerequisite: Music 201. (2 crs.)

MUS 305. OPERA SURVEY. The origin and history of opera, national contributions to the arts, the analysis of numerous representative operas, the relationship of operatic plots to history and events. (3 crs.)

MUS 312. KEYBOARD II. A continuation of Keyboard I for the more advanced student. Review of scales, chords, inversions, and sight reading, followed by the improvisation of simple accompaniments from chord symbols. Modulation study is begun with the study of the circle of fifths; further methods of modulation are introduced as time permits. Transposition at both the second and third are introduced. A thorough study of dominant seventh chords relating to simple improvisation within any given key. (2 crs.)

PRIVATE INSTRUMENTAL AND VOICE INSTRUCTION is offered per semester. Limited to instructor's availability. (1 cr.)

MUS 469. INDEPENDENT STUDIES IN MUSIC. Limited to instructor's availability. (VC)

CCU CO-CURRICULAR ACTIVITIES:

Students may earn up to four semester hours of credit toward graduation in co-curricular activities. They may continue participation and have more than four co-curricular credits recorded on their transcript. However, only four such credits may be counted in the 128 hours required for graduation. These four credits may be counted as Free Electives only.

CCU 190. WOMEN'S CHORAL ENSEMBLE. (1cr.)

CCU 191. COLLEGE BAND. (1 cr.)

CCU 192. COLLEGE CHOIR. (1 cr.)

CCU 193. MEN'S GLEE CLUB. (1cr.)

CCU 195. COLLEGE COMMUNITY SYMPHONY ORCHESTRA. (1 cr.)

CCU 291. MUSIC FOR TOUR ABROAD. (1 cr.)

PHILOSOPHY

Refer to page 244 for the course descriptions for the Philosophy Department.

PHYSICAL SCIENCE

PHS 111. MAN AND HIS PHYSICAL WORLD I. (Physical Science Study Committee) An introduction to the nature of scientific inquiry and experimentation, designed to develop an interest in science. The topics discussed all contribute to the development of a single theme — solid matter and the techniques for its investigation. The depth and pace of the course are such that students without strong backgrounds in science and mathematics can be successful. (5 crs.)

PHS 112. MAN AND HIS PHYSICAL WORLD II. (Physical Science Study Committee) A continuation of Man and His Physical World I (PSNS). The nature and structure of solid matter is studied further. Prerequisite: Man and His Physical World I. (5 crs.)

PHS 116. BASIC PHYSICAL SCIENCE A. Designed to provide the non-science major with the opportunity to acquire a basic understanding and appreciation of contemporary physical science. An alternative to those who do not wish or are unable to schedule our five-credit course. Classroom activities and discussions will center on the topics chosen by the professor with or without the solicited aid of the students in the class. (2 crs.)

PHS 117. BASIC PHYSICAL SCIENCE B. An elementary, non-laboratory approach to the physical world. Topics selected jointly by students and instructor. (3 crs.)

PHS 118. MAN, METHODS, MATERIALS. An activity-oriented class which cuts across the lines of social science, science, and mathematics. The major objectives are to improve the technological literacy of the student — to give him that understanding of modern technology (its capabilities, characteristics, and limitations) which is so important if he is to cope with the problems of the interaction of technology and society. Emphasizes systematic approaches for analyzing complex problems (3 crs.)

PHS 125. OBSERVATIONAL ASTRONOMY. Designed for science and non-science majors interested in understanding and observing the night sky. The basic concepts of astronomy, and the use of star finders, tables, charts, and graphs as they relate to night-time observation. Contemporary films in astronomy will be shown and current developments in astronomy discussed. Direct night-time sky orientation and observation will be included, and appropriate projects undertaken as time and weather permit. Two class hours each week. (2 crs.)

PHS 126. MODERN PHYSICS AND ANTI-PHYSICS. The objective is to create in liberal arts students an awareness of the principal concepts of 20th century, or modern, physics. Since it is assumed that many of the students have not had high school physics, some time will be spent on the classical physics. Emphasis on concepts, not mathematical details, and a high school course in Algebra will suffice as mathematical preparation. The climax of the course will come during discussions of special relativity, and quantum, or wave, mechanics. Many of the original arguments, such as Einstein's famous "Gedanken" experiments, will be presented. The use of the modern ideas in astrophysics will terminate the course. (3 crs.)

PHS 127. THE PHYSICS OF MUSIC. A zero-math level course intended for a general audience interested in understanding the physical basis of music and musical instruments. Approximately the first third of the course is devoted to the physical principles necessary for an understanding of the physics of music. The latter two thirds of the course consider the application of physics to music. (3 crs.)

PHS 128. PRACTICAL ELECTRONICS. A practical non-mathematical view of some fields of elementary electronics. The student is given the opportunity through laboratory work to examine some of the theory presented in lecture. In addition, he is required to build a project of his choosing. Solid theory and application is emphasized, although vacuum tubes are mentioned. (3 crs.)

PHS 135. CHEMISTRY OF MATERIALS. Study of some of the raw materials employed in the construction and fabrication of a technological society. Particular emphasis on those chemical characteristics of material which render it useful in fabrication. (3 crs.)

PHS 136. ENVIRONMENTAL CHEMISTRY. A number of the most significant factors in the relevance of science and the chemical environment in which people live. The air, water, and earth provide raw materials to be used in the practice of science and technology for the sustenance and comfort of mankind. (3 crs.)

PHS 145. ASTRONOMY. Non-mathematical presentation of methods and results of astronomical discovery. Survey of facts and important astronomical theories. Solar systems and the stellar system, including binary and variable stars, clusters, and nebulae. Discussion of observations, techniques, and interpretations. Three class hours each week. (3 crs.)

PHS 205. CONTEMPORARY ISSUES OF SCIENCE AND SOCIETY. Major science-related societal problems. The class will identify some of these problems: air pollution, water pollution, sound pollution, population control and distribution, and drug abuse. (3 crs.)

PHS 409. PRACTICUM FOR TEACHERS OF SCIENCE IN THE SECONDARY SCHOOL. Emphasizes design and use of apparatus, demonstrations, and experiments for general science, chemistry, physics, and biology. Special emphasis is placed on secondary school scientific instructional materials. (3 crs.)

PHYSICS

PHY 101. COLLEGE PHYSICS I. Introductory Physics. Vectors, mechanics, hydrostatics, heat and thermodynamics. Three class hours and three lab hours each week. Corequisite: Trigonometry. (4 crs.)

PHY 102. COLLEGE PHYSICS II. A continuation of Physics 101. Waves and acoustics, electricity, magnetism, AC circuits, and electromagnetic waves. Three class hours and three lab hours each week. Corequisite: Calculus I. (4 crs.)

PHY 105. GENERAL PHYSICS – MED TECH. An introductory course for students of Medical Technology. Mechanics, electricity and magnetism, light and radio-activity. Three class hours and three lab hours each week. Prerequisite: College Algebra. (4 crs.)

PHY 106. GENERAL PHYSICS – INDUSTRIAL ARTS. Emphasis on mechanics: vectors, forces, work, power, and energy. Considerable attention given to the application of the principles of physics to machines. Three class hours each week and three laboratory hours each week. Prerequisite: College Algebra. (4 crs.)

PHY 111. INTRODUCTORY PHYSICS I – BIOLOGY. An introductory course in physics for biology majors. Topics include mechanics, properties of matter, and heat. Examples from biology are given as application of physical laws. Three class hours and three lab hours each week. Recommended: A functional knowledge of algebra and elementary trigonometry. (4 crs.)

PHY 112. INTRODUCTORY PHYSICS II – BIOLOGY. A continuation of Physics III. Topics include waves, electricity and magnetism, and modern physics. Three class hours and three lab hours each week. Prerequisite: Physics III. (4 crs.)

PHY 203. COLLEGE PHYSICS III. A continuation of Physics 102. Light atomic and nuclear physics, and special relativity. Some time is also spent reviewing material from Physics 101 and 102. Three class hours and three lab hours each week. Prerequisite: Physics 102. Corequisite: Calculus II. (4 crs.)

PHY 221. INTERMEDIATE MECHANICS. Vector calculus, Newtonian kinematics, and dynamics of many particle systems with emphasis on first integral relations, motion in a central potential, scattering theory, systems with constraints, variational principles in mechanics, small oscillations, wave equation, and special relativity. Three class hours each week and three laboratory hours each week. Prerequisite: Physics 102. Corequisite: Calculus III. (4 crs.)

PHY 256. ASTRONOMY. Astronomy of the solar system and the universe beyond, the evolution of stars and stellar systems, recently discovered quasars and pulsars, and the current cosmological models of the universe. (3 crs.)

PHY 261. INTERMEDIATE ELECTRICITY AND MAGNETISM. Ordinary differential equations, fundamentals of electromagnets, multipole fields, Laplace and Poisson equations, electromagnetic field equations, electromagnetic waves, reflection, and refraction. Three class hours each week. Prerequisite: Physics 221. (3 crs.)

PHY 305. ELECTRONICS. A thorough grounding in the concepts of digital electronics. Diode, transistor, and other switching circuits, switching logic and logic gates, transistor amplifiers and oscillators, flip-flops, multivibrators, counters, registers, readout devices, and analog-digital instruments. Three class hours each week and three laboratory hours each week. Prerequisite: Physics 261. (4 crs.)

PHY 322. ADVANCED MECHANICS. A continuation of Physics 221. Variational principles, relativistic dynamics, Hamilton's equations, canonical transformations, Hamilton-Jacobi theory, continuous systems, and classical field theory. Applications to quantum mechanical, electromagnetic, and relativistic systems. Three class hours each week. Prerequisites: Physics 221, Physics 261. (3 crs.)

PHY 331. MODERN PHYSICS I. Relativistic kinematics and dynamics, particle and wave aspects of radiation and particles, the structure of the hydrogen atom, and the many electron atoms. Quantum mechanics introduced for the first time here. Three class hours each week. Prerequisites: Physics 261 and Calculus III. (3 crs.)

PHY 332. MODERN PHYSICS II. An introduction to solid state physics, nuclear physics, and elementary particle physics. Three class hours each week. Prerequisite: Physics 331. (3 crs.)

PHY 341. MATHEMATICAL METHODS OF PHYSICS I. The application of the following techniques to problems in physics: ordinary differential equations, infinite series, evaluation of integrals, eigenfunction theory, calculus of variations, vectors and matrices, special functions, and partial differential equations. Three class hours each week. Prerequisites: Physics 261, Calculus III. (3 crs.)

PHY 342. MATHEMATICAL METHODS OF PHYSICS II. A continuation of Physics 341. Perturbation theory, integral transforms, integral equations of complex variables, tensor analysis, and an introduction to groups and group representations. Three class hours each week. Prerequisite: Physics 341 or equivalent math courses. (3 crs.)

PHY 362. ADVANCED ELECTROMAGNETIC THEORY. A continuation of Physics 261. The microscopic theory of dielectrics, magnetic properties of matter, slowly varying currents, introduction to plasma physics, applications of Maxwell's equations, special relativity electrodynamics, and superconductivity. Three class hours each week. Prerequisite: Physics 261. (3 crs.)

PHY 375. RADIATION AND OPTICS. This course begins with a review of Maxwell's equations and wave analysis, and then goes into Fraunhofer diffraction, radiation from atoms, polychromatic waves, scattering, reflection and transmission of waves, magneto- and electro-optic effects, and an introduction to laser and maser theory. Three class hours each week. Prerequisite: Physics 261. (3 crs.)

PHY 376. STATISTICAL AND THERMAL PHYSICS. Statistical methods, statistical thermodynamics, macroscopic thermodynamics and its relation to statistical mechanics,

application of statistical mechanics to gases and solids, phase equilibrium, and quantum statistics. Three class hours each week. Prerequisite: Physics 261. (3 crs.)

PHY 405. QUANTUM MECHANICS. This course, after an introduction to the necessity of quantum mechanics, includes a discussion of Schroedinger's equation in one dimension, systems of particles in one dimension, motion in three dimensions, angular momentum and spin, approximation methods, and various applications to atomic and nuclear physics. Three class hours each week. Prerequisite: Physics 332. (3 crs.)

PHY 409. SENIOR THESIS. An opportunity for each physics major to do individual research on a topic of his choosing, either experimental or theoretical. Prerequisites: Senior standing and Physics 332. (VC)

PHY 435. PLASMA PHYSICS. An introduction to tensor analysis, electrodynamic equations, elastic collisions, the Boltzmann equation, charged particle interactions, wave phenomena in plasmas, plasma oscillations, and plasma generation. Three class hours each week. Prerequisites: Physics 261 and Physics 376. (3 crs.)

PHY 445. NUCLEAR PHYSICS. The deuteron, nucleon, nucleon scattering, nuclear models, gamma transitions, alpha decay, beta decay, nuclear reactions, and an introduction to elementary particle physics. Three class hours each week. Prerequisites: Physics 332, Physics 405. (3 crs.)

PHY 451. ADVANCED LABORATORY I. Experiments selected from topics discussed in Modern Physics I. The lecture time will be used to discuss error analysis, curve fitting, and points of interest to the laboratory reports. One class hour each week and six laboratory hours each week. (3 crs.)

PHY 452. ADVANCED LABORATORY II. An extension of Physics 451. The experiments are selected from Modern Physics II as well as from some of the advanced courses (such as Nuclear Physics, Solid State Physics, Plasma Physics, and Optics). Computer analysis of data. One class hour each week and six laboratory hours each week. Prerequisites: Physics 451 and Physics 332. (3 crs.)

PHY 455. SOLID STATE PHYSICS. Crystal structure, crystal binding, elastic constants, lattice vibrations, thermal properties of insulators, the free electron model of metals, the energy band theory of insulators and semiconductors, and the properties of semiconductor crystals. Three class hours each week. (3 crs.)

PHY 465. SPECIAL AND GENERAL RELATIVITY. Relativistic mechanics and electrodynamics of mass points, mechanics of continuous matter, applications of the special theory the principle of equivalence, the field equations and the general theory, experimental tests of the general theory, and equations of motion in the general theory. Three class hours each week. Prerequisite: Physics 332. (3 crs.)

PHY 475. ASTROPHYSICS. Topics chosen from the following concerning stellar evolution: observations, physical state of the stellar interior, evolutionary phases and initial and final stellar structure, and some vital statistics of the stars. Three class hours each week. Prerequisites: Physics 332 and Physics 376. (3 crs.)

PHY 495. SEMINAR. An introduction to literature, history, teaching, and research methods in the physical sciences. Prerequisites: Junior standing and at least 19 hours of physics (including College Physics I and College Physics II). (1 cr.)

POLISH

POL 101. SPOKEN POLISH. Classroom use of audio-lingual methods. Students must provide cassette or tape players and blank tapes. Students with a grade of B or better may continue their study through Polish 469. (3 crs.)

POL 102. SPOKEN POLISH. A continuation of Spoken Polish 101. (3 crs.)

POL 469. STUDIES IN POLISH LITERATURE. Independent readings in Polish literature. The instructor and the student arrange a program of study according to the student's needs and desires. (VC)

POLITICAL SCIENCE

POS 100. INTRODUCTION TO POLITICAL SCIENCE. The characteristics, concepts, and trends of political science. (3 crs.)

POS 105. AMERICAN GOVERNMENT. The general principles of the American system of constitutional government. Special emphasis on the organization and functions of the national government — legislative, executive and judicial. Careful treatment of the rights and duties of citizenship, the electorate, political parties, civil rights, and the growing regulatory function of government. (3 crs.)

POS 205. MUNICIPAL GOVERNMENT. The history, organization, structure, and functions of the major types of municipal government in the United States. The student should have some knowledge of the American federal system. (3 crs.)

POS 207. AMERICAN FOREIGN POLICY. (3 crs.)

POS 208. SOVIET FOREIGN POLICY. (3 crs.)

POS 215. COMPARATIVE POLITICS. Different political systems illuminated by comparison. System, structure, and function are basic concepts employed in devising categories for comparative analysis. An intensive examination of individual countries, ranging from Western, industrial politics to non-Western, pre-industrial, and authoritarian states. (3 crs.)

POS 216. NATIONALISM. A systematic study of the origin and development of nationalism in modern times and its role in world politics. Prerequisites: Political Science 100 and 105. (3 crs.)

POS 218. POLITICAL PARTIES. (3 crs.)

POS 220. INTRODUCTION TO PUBLIC ADMINISTRATION. An analysis of the history and scope of public administration in the United States. Organizational theory and practice and problems of centralization, decentralization, management, and political and legal controls. Prerequisites: Political Science 100, 105. (3 crs.)

POS 222. THE ADMINISTRATION OF CRIMINAL JUSTICE IN THE UNITED STATES. (3 crs.)

POS 225. DEVELOPMENT OF POLITICAL THOUGHT. A study of the principal writings and theories of the major political philosophers and thinkers from the time of the Greek city-state to the 19th century. Prerequisite: Political Science 100. (3 crs.)

POS 226. COMPARATIVE COMMUNISM. Eastern Europe exclusive of the Soviet Union: The Balkans, Hungary, Romania, Czechoslovakia, and Poland. Post-World War II developments in politics and government, with considerable stress on the roles of the Party in each political system (3 crs.)

POS 227. NATIONALITY PROBLEMS IN EAST EUROPE. (3 crs.)

POS 235. STATE AND LOCAL GOVERNMENT. (3 crs.)

POS 236. INTERNATIONAL RELATIONS. (3 crs.)

POS 237. INTERNATIONAL ORGANIZATION. An analysis and evaluation of the United Nations and other international organizations, and consideration of some of the theoretical concepts and practical problems involved. Prerequisite: Political Science 100. (3 crs.)

POS 250. CONSTITUTIONAL LAW. (3 crs.)

POS 260. INTEREST GROUPS AND PUBLIC OPINION. Studies of the influence of individuals and groups on governmental policy decisions through formal and informal processes. Emphasis on the formation, expression, measurement, and role of public opinion and the organization techniques, policies, and membership of political interest groups. Prerequisites: Political Science 100 and 105. (3 crs.)

POS 270. POLITICS OF DEVELOPING AREAS. (3 crs.)

POS 280. POLITICS AND GOVERNMENT OF THE SOVIET UNION. (3 crs.)

POS 379. SPECIAL PROBLEMS IN POLITICAL SCIENCE. Development of individual programs by students. Does not replace any course regularly given. (VC)

POS 479. HONORS COURSE IN POLITICAL SCIENCE. Directed reading and research in an area of interest chosen by the student in consultation with an instructor. Prerequisites: Provisions of the Honors Program of the college. (VC)

POS 495. SEMINAR IN POLITICAL SCIENCE. Selected studies in the literature, philosophy, techniques, and research of political science. Prerequisite: Permission of the instructor. (3 crs.)

PSYCHOLOGY

PSY 100. GENERAL PSYCHOLOGY. A general introduction to the scientific study of the principles of behavior with emphasis on such topics as methods of research, development of the individual, learning, motivation, emotions, cognitive processes, sensation, perception, testing, personality, behavior disorders, and individual differences. Experimental research as well as practical application is stressed. (3 crs.)

PSY 110. EDUCATIONAL PSYCHOLOGY. A study of the nature of the learning process, with emphasis on the application of principles of learning to the problems of teaching. The study of actual classroom problems and procedures by observation of regular work and by special illustrative demonstrations in the laboratory school. The psychological climate of the classroom, the importance of evaluating the child's total learning, the group process, and guidance as an essential part of creative teaching. Should furnish the prospective teacher with a foundation in the theories, principles, and master ideas of the educative process. Prerequisite: General Psychology. (3 crs.)

PSY 205. CHILD PSYCHOLOGY. A study of the patterns of physical, mental, social and emotional development in the period of early childhood through the prepubescent period. The role of maturation and of experience in determining normal development of the individual. Prerequisite: General Psychology. (3 crs.)

PSY 206. ADOLESCENT PSYCHOLOGY. An introduction to the study of those factors that influence the growth and development of adolescents. Emphasis on the relationship among physiological, psychological and sociological factors. Theoretical systems used to describe, explain, predict, and work with adolescents. Prerequisite: General Psychology. (3 crs.)

PSY 207. DEVELOPMENT PSYCHOLOGY. A study of the patterns of physical, mental, social and emotional development from early childhood through maturity. Particularly oriented to students who will work with children and wish to understand their developmental patterns. Prerequisite: General Psychology. (3 crs.)

PSY 215. PSYCHOLOGY OF EXCEPTIONAL CHILD. A survey of the psychological problems of hearing, speech, mental, and personality defects, and of children who are culturally disadvantaged, as well as problems of children of superior ability. A major purpose is to gain a functional understanding of their problems and of the procedures for helping them to cope with them. Prerequisite: General Psychology. (3 crs.)

PSY 310. MENTAL HYGIENE. Problems of personality and mechanisms of adjustment, including a study of the origin and resolution of conflicts, and the role of emotion in the patterns of behavior. (Should not be taken if Psychology of Adjustment has been taken.) Prerequisite: General Psychology. (3 crs.)

PSY 315. PSYCHOLOGY OF ADJUSTMENT. A study of the individual's adjustive processes in personal and social relationships. A review of defensive reactions, abnormal behavioral reactions, problem solving, and superior adjustment. Prerequisite: General Psychology. (3 crs.)

PSY 320. SOCIAL PSYCHOLOGY. A study of the interaction between the individual and his social groups within a cultural context; the individual in his social role, social groups, and social institutions. Prerequisite: General Psychology. (3 crs.)

PSY 325. PSYCHOLOGICAL STATISTICS. The need for statistics in psychology is demonstrated by examining the variable nature of psychological measurements. The statistics of chance variability and its relation to the normal probability curve are studied in detail. A number of correlational methods are presented, along with the type of psychological problems for which each is suited. Prediction of one variable from another using these correlations and regression coefficients is learned, but with considerable attention to data typical of problems in the area of psychology. Prerequisite: General Psychology. (3 crs.)

PSY 326. INDUSTRIAL PSYCHOLOGY. A study of the application of psychological principles of behavior to people-work conditions. An examination of business and industrial activities and the role the psychologist plays in such activities. A strong emphasis on the practical and everyday problems that confront people in the world of work. Prerequisite: General Psychology. (3 crs.)

PSY 330. PHYSIOLOGICAL PSYCHOLOGY. A study of the relationships between bodily processes and behavior. The relationship between psychological phenomena and

the physiological functioning of the organism. Sensation and perception, reflexive behavior, motivation, emotional behavior and critical functioning. Some laboratory experience will be included in this course. Prerequisite: General Psychology. (3 crs.)

PSY 335. PSYCHOLOGY OF LEARNING. A study of the nature and conditions of learning; types of learning and the experimental procedures used in the study of learning problems. The various interpretations of the process will be examined and evaluated. Prerequisite: General Psychology and Junior rank. (3 crs.)

PSY 340. PSYCHOLOGICAL TESTING. A study of the nature and function of measurement in psychology, with concentration on test construction problems and procedures and an examination of some typical tests in the fields of intelligence, personality, special aptitudes, abilities and interests. Prerequisite: General Psychology. (3 crs.)

PSY 345. HISTORY AND SYSTEMS OF PSYCHOLOGY. A detailed look at the evolution of psychological thought from its ancestral background through its development into a separate scientific discipline. The early problems and methods of psychology are examined in some detail, as are the various schools of psychological thought. Emphasis directed toward the effect of the discoveries and thinking of the times on the course of the development of psychology as a science. Prerequisite: General Psychology. (3 crs.)

PSY 350. PRINCIPLES OF BEHAVIOR MODIFICATION. A consideration of the application of the principles of contemporary behaviorism to the problem of behavior modification in educational and clinical settings. Major emphasis on the remediation of problems of academic, emotional, and social adjustment in the classroom. Prerequisites: Educational and Developmental Psychology or permission of the instructor. (3 crs.)

PSY 360. EXPERIMENTAL PSYCHOLOGY. Research methodology, experimental design, and the appropriate statistical treatment of psychological data. Although demonstrations are used, students are encouraged to design their own procedures for testing scientific propositions. A combination of laboratory time and discussion periods permits a critical consideration of principles and theories amenable to experimental investigation. Students are required to do an individual experiment as part of the course requirements. Prerequisite: General Psychology. (4 crs.)

PSY 400. ABNORMAL PSYCHOLOGY. A survey of behavior pathology — including the psychoses, neuroses, character disorders including drug addiction and psychophysiological disorders — together with a general consideration of etiology, treatment, and prognosis. Prerequisite: General Psychology. (3 crs.)

PSY 405. PSYCHOLOGY OF PERSONALITY. An introduction to the study of the essential factors that result in creating individual differences of human behavior. Current theories used to explain the development and structure of personality. The characteristics of the normal and the maladjusted personality, with special concern for developmental patterns. Prerequisite: General Psychology. (3 crs.)

PSY 411. CLINICAL PSYCHOLOGY I. The kinds of information and data to be obtained in studying individuals. The problems and procedures which constitute clinical procedure. Not designed to train the student to become a clinical psychologist, but is an introduction to the applied areas of clinical psychology. Prerequisites: General Psychology, Abnormal Psychology, Psychological Testing, Psychology of Personality, and Senior Standing. (3 crs.)

PSY 412. CLINICAL PSYCHOLOGY II. The projective techniques used to assess individual personality. The construction and methods of interpretation of these techniques. An introduction to some of the tools of the clinical psychologist and counselor. Prerequisites: General Psychology, Abnormal Psychology, Psychological Testing, and Senior Standing. (3 crs.)

PSY 419. CLINICAL PRACTICUM IN PSYCHOLOGY I. Special study in case study methods, psychological testing, and psychopathology. Prerequisites: Psychological Testing, Psychological Statistics, Clinical Psychology, and permission of the head of the Department. (3 crs.)

PSY 429. CLINICAL PRACTICUM IN PSYCHOLOGY II. A continuation of Clinical Practicum I, but with greater emphasis on psychotherapy, use of clinical instruments, diagnostic cases, and visits to hospitals and clinics. Prerequisites: Psychological Testing, Psychological Statistics, Clinical Psychology, Clinical Practicum I, and permission of the head of the Department. (3 crs.)

PSY 450. APPLIED BEHAVIOR MODIFICATION. An opportunity for students to apply techniques enumerated in PSY 350 to the modification of behavior of fellow students and children in a number of settings. For example, those enrolled might function as tutors in courses with which their peers are having difficulty or as a general study skills trainers, or emrollees might apply behavioral techniques while working as nursery school or day care center aides. Prerequisite: Psycholody 350 or permission of the instructor. (4 crs.)

PSY 479. SPECIAL STUDIES IN PSYCHOLOGY. An opportunity to engage in individual study and research in an area of interest to the student. Admission to this course subject to the approval of the department head. Prerequisites: General Psychology and consent of the instructor. (VC)

PSY 490. SEMINAR IN PSYCHOLOGY. A discussion seminar covering selected areas of psychology not covered in the departmental course offerings. The selected areas will be announced each semester. An opportunity to cover the pertinent literature in depth and to engage in critical discussions of the area. Prerequisite: General Psychology; Approval by Department Chairman; consent of instructor. (VC)

PSY 495. HONORS COURSE IN PSYCHOLOGY. An opportunity to engage in independent study in psychology under the direction of a member of the faculty. Prerequisites: high academic performance; approval of Department Chairman; consent of the instructor. (3 crs.)

RUSSIAN

RUS 101. ELEMENTARY RUSSIAN I. For students without previous knowledge of Russian. The fundamentals of correct idiomatic Russian. The student is made aware of basic sound patterns and sentence structures, with emphasis first on hearing and speaking, then reading and writing. Classroom instruction supplemented by laboratory study and practice. Three class hours each week and one hour language laboratory per week. (3 crs.)

RUS 102. ELEMENTARY RUSSIAN II. A continuation of Russian 101. Prerequisite: Russian 101 or one year of high-school Russian. Three class hours each week and one hour language laboratory per week. (3 crs.)

RUS 203. INTERMEDIATE RUSSIAN I. Understanding, speaking, reading, and writing on a more advanced level. A review of essential Russian grammar and further development of audiolingual comprehension, as well as reading and writing facility. Prerequisite: Russian 101 or 102. Three class hours each week and one hour language laboratory per week. (3 crs.)

RUS 204. INTERMEDIATE RUSSIAN II. To develop a reasonable control of the principal structural patterns of Russian through dialogue and oral, reading, and writing practice from reading of modern authors. Three class hours and one hour language laboratory per week. Prerequisite: Russian 203. (3 crs.)

RUS 469. STUDIES IN RUSSIAN LITERATURE. Independent readings in Russian literature. The instructor and the student arrange a program of study according to the student's needs and desires. (VC)

SERBO-CROATIAN

SCR 101. SPOKEN SERBO-CROATIAN. Classroom use of audio-lingual methods. Students must provide cassette or tape players and blank tapes. Students with a grade of B or better may continue their study through Serbo-Croatian 469. (3 crs.)

SCR 102. SPOKEN SERBO-CROATIAN. A continuation of Spoken Serbo Croatian 101. (3 crs.)

SCR 469. STUDIES IN SERBO-CROATIAN LITERATURE. Independent readings in Serbo-Croatian literature. The instructor and the student arrange a program of study according to the student's needs and desires. (VC)

SLAVIC STUDIES

XSS 105. INTRODUCTION TO SLAVIC STUDIES. A consideration of the history, social and political institutions, customs, literature and arts of the various Slavic peoples in an effort to discover their diversity and unity. (3 crs.)

XSS 106. MASTERPIECES OF RUSSIAN LITERATURE. A study of selected works of major Russian authors. Particular stress on the major prose writers of the 19th century: Tolstoy, Dostoyevski, Turgenev, and Chekhov. (3 crs.)

XSS 110. THE LITERATURE AND CULTURE OF SOUTHEASTERN EUROPE. The life of the peoples of Yugoslavia, Hungary, Bulgaria, and Romania; their literature, art, and intellectual achievements. (3 crs.)

XSS 111. THE LITERATURE AND CULTURE OF THE WESTERN SLAVS. The life of the peoples of Poland, Czechoslovakia, and the Baltic lands; their literature, art, and intellectual achievements. (3 crs.)

XSS 112. THE LITERATURE AND CULTURE OF THE EASTERN SLAVS. The life of the peoples of Russia, White Russia and the Ukraine; their literature, art, and intellectual achievements. (3 crs.)

XSS 499. SEMINAR IN SLAVIC STUDIES. Advanced study on selected topics in the Slavic and Eastern European area. (3 crs.)

SOCIAL SCIENCE

SOS 100. INTRODUCTION TO SOCIAL SCIENCE. A functional systems approach to the treatment of the subject matter of Social Science. (3 crs.)

SOS 101. WORLD CULTURE. An introduction to the concept, content, and diversity of human culture. (3 crs.)

SOS 105. SLAVIC WORLD: HISTORY. A general survey of the historical and cultural background and development of the western, southern, and eastern Slavs, from the origins of the Slavic tribes to the present. (3 crs.)

SOS 106. SLAVIC WORLD: POLITICS. An analysis of the governments and political systems of Bulgaria, Yugoslavia, Czechoslovakia, Poland, and the Soviet Union, with special emphasis placed upon ideology, the politics of Communist parties, present and past, governmental structures and processes, and theories concerning the evolution of Communist systems in these countries. (3 crs.)

SOS 107. UNIVERSAL CULTURE PROBLEMS. A comparative approach to problems common to many societies. (3 crs.)

SOS 145. CHARISMATIC LEADERS. An analysis of five leaders and their charismatic qualities. (3 crs.)

SOS 150. MODERN LIBERATION MOVEMENTS. An investigation of five groups who have worked since the 1700's to free themselves from exploitation. (3 crs.)

SOS 155. CULTURAL VIEWS OF WOMEN. An examination of the attitudes toward women in five different cultures. (3 crs.)

SOS 160. CONTEMPORARY WOMEN'S MOVEMENT. An investigation of themes, philosophies, and activists in the current women's revolution. (3 crs.)

SOS 200. QUANTITATIVE METHODS IN SOCIAL SCIENCE. An introduction to basic research design, measurement, sampling, and survey techniques. In addition to elementary statistics, the course offers a survey of computer applications to social science research, particularly in sociology, social work, history and political science. (3 crs.)

SOS 220. CULTURAL REVOLUTION IN CHINA. A study of the cultural traditions and the dynamics of change in modern Chinese society. (3 crs.)

SOS 230. LATIN AMERICAN SOCIETIES. A study of the origin and evolutionary development of various Indian and Latin cultures of Latin America. (3 crs.)

SOS 240. THE ARAB WORLD. An examination of continuity, change, and cultural variation in Arab society. (3 crs.)

SOS 379. SPECIAL PROBLEMS IN SOCIAL SCIENCE. (VC)

SOS 479. HONORS COURSE IN SOCIAL SCIENCE. (VC)

SOS 495. SEMINAR IN SOCIAL SCIENCE. (3 crs.)

SOCIAL WORK

SOW 150. INTRODUCTION TO SOCIAL WORK. Introduces the beginning student to the social, political and economic dimensions of poverty and welfare services of the United States. Complements other beginning courses in the social sciences by integrating this knowledge in a fashion which aids in the comprehension of welfare services while establishing a basis for movement toward higher level courses. (3 crs.)

SOW 208. MINORITY GROUP RELATIONS. Analysis of the historical, economic and political relations of American religious, ethnic and racial minorities in terms of social change and social structure. Special attention given to Puerto Rican, Chicano and Indian subcultures. Sources of prejudice and discrimination, social processes including conflict, segregation, assimilation, accommodation, and cooperation. Prerequisite: Principles of Sociology. (3 crs.)

SOW 255. SOCIAL CASEWORK I. An introductory course in dyadic relationships designed to enable the student to synthesize knowledge gained from the social sciences, and learn how such knowledge can be used in understanding and working effectively with people. Values are stressed. Fundamentals of interviewing with emphasis upon understanding the interviewee as a person and as a member of any given group, and understanding oneself as an individual who will be dealing with persons who may differ from him in many significant ways. (3 crs.)

SOW 265. JUVENILE DELINQUENCY. The causes, prevention, and treatment of deviancy among the youth. Emphasis on the concept of the non-adversary role of the juvenile court system and the urgent need for change. An exploration of the sociological theories for deviancy and the changing attitude toward treatment and treatment facilities. (3 crs.)

SOW 270. CHILD WELFARE. Child welfare as a specialized field of social work concerned with social role enactment. Child welfare services: supportive services, supplementary services, protective services, day care, adoption, and foster family care. (3 crs.)

SOW 309. WELFARE PRACTICUM I. An opportunity to learn and apply theoretical knowledge to practice through involvement in a social welfare agency setting or institution. The student is required to spend 6 clock hours per week in the field. (6 crs.)

SOW 319. WELFARE PRACTICUM II. Continuation of Welfare Practicum I. The student continues to work under a trained social worker, preferably in the same setting as his previous placement. The student is expected to demonstrate a considerable amount of classroom knowledge. He should show conviction about the value of social work in improving the client's psycho-social functioning. The student is required to spend 6 clock hours per week in the field. (6 crs.)

SOW 352. SOCIAL CASEWORK II. Builds upon those elements of casework practices introduced in Social Casework I. The process of psychosocial study, diagnosis, and treatment more adequately developed. Abundant use of assigned texts and case material, particularly those concerned with social welfare. Pedagogic use of role playing is also systematically developed. Generic concepts stressed, but specific settings topically considered. (3 crs.)

SOW 365. DELIVERY OF SERVICES. The new delivery systems developed in the fields of health and welfare services. The value of comprehensive planning and the growing

interest on the part of the government at all levels. An examination of the vast complexities of community structure that make the initiation of such systems a difficult task. The advantages to the individual consumer of effective delivery systems. (3 crs.)

SOW 370. SOCIAL CHANGE. Develops the thesis that the social worker must possess the ability to analyze a community and its needs and to contribute to planning and action that take into account the human dimension. Models for analyzing a community's power structure and methods for intervening in system maintenance patterns, methods for developing citizen participation in social reform movements. (3 crs.)

SOW 379. SPECIAL PROBLEMS IN SOCIAL WORK. (VC)

SOW 479. HONORS COURSE IN SOCIAL WORK. (VC)

SOW 495. SEMINAR IN SOCIAL WORK. (VC)

SOCIOLOGY

SOC 100. PRINCIPLES OF SOCIOLOGY. This basic course examines interaction among human beings. Emphasis on natural and social heritage, the meaning and functions of culture, the origin, functions, and characteristics of social institution with inquiry into the nature and genesis of social pathology. (3 crs.)

SOC 110. AFRO-AMERICAN CULTURE. The contemporary Black experience in the United States; different currents of black social, economic and political thought and their relationship to those of other groups in this society. Intended for all students who have some interest in the Afro-American and his relationship to the total American society. (3 crs.)

SOC 200. RESEARCH METHODS. Specifically designed for Arts and Sciences sociology or social welfare majors. It is assumed that these students have not studied, nor have they been involved in systematic, empirical social-scientific research. Consequently, the objective is to fundamental concepts of research in the social sciences. The logic and procedural rules for scientific problem solving are studied, and the methods and techniques for implementing these rules in actual research are emphasized. (3 crs.)

SOC 205. CONTEMPORARY SOCIAL PROBLEMS. Provides an objective view of some of the social problems which many in the college community consider only subjectively; provides a theoretical frame of reference for analyzing social problems. (3 crs.)

SOC 210. SOCIAL STRATIFICATION. Provides the student with an objective appraisal of our society and an awareness of the extent of our class structure. The student will be made more aware of our truly stratified society. Prerequisite: SOC 100. (3 crs.)

SOC 220. THE FAMILY. An opportunity for the student to gain some knowledge of the purpose of this universal model as the primary unity of most known societies. Considers the needs of the college student who anticipates marriage or who has married. In both instances, the concept of adjustment and accommodation prior to and during marriage is stressed. (3 crs.)

SOC 230. COMMUNITY AND ECOLOGY. Various criteria thought to characterize communities are theoretically and empirically considered: a specific population and living with a specific geographic area, amongst whom are present shared institutions and values, and significant social interaction. (3 crs.)

SOC 235. URBAN SOCIOLOGY. Much of the current material that describes the problems of urban life is part of this exploration of the dimensions of the urban mass and the problems of the people who live there: the effects of a technological age and a rapidly changing urban civilization, and their challenge to the viability of the urban habitat. Accommodates primarily social work and sociology majors after they have had an introductory level sociology course. (3 crs.)

SOC 240. SOCIAL INSTITUTIONS. Analysis of the collectivity form a behavioral perspective. The family and political, economic, religious, and educational institutions are examined. Consideration of the systematic provisions in society which provide for the maintenance of group patterns of behavior. (3 crs.)

SOC 260. CRIME. Particular emphasis on those violations that are socially palatable but costly to our society. The adult offender and society's efforts to deal with him; existing attitudes and shifts in attitudes; the effectiveness of sentencing and punishment and the results of long-term imprisonment. (3 crs.)s,

SOC 375. HISTORY OF SOCIAL THOUGHT. Significant social theorists, particularly as they have influenced the development of contemporary social theory; ways of approaching social reality by way of social theory; historical development in the 19th and 20th centuries. Intended primarily for sociology and social work majors in the sixth semester or higher level. (3 crs.)

SOC 379. SPECIAL PROBLEMS IN SOCIOLOGY. Development of individual programs by students. Does not replace any course regularly given. (VC)

SOC 479. HONORS COURSE IN SOCIOLOGY. Directed reading and research in an area of interest chosen by the student in consultation with an instructor. Prerequisite: provisions of the Honors Program of the college. (VC)

SOC 495. SEMINAR IN SOCIOLOGY. (3 crs.)

SPANISH

SPN 100. BASIC CONVERSATIONAL SPANISH. Introductory Spanish conversation designed for those who wish to learn spoken Spanish, or for those intending to stay or travel in a Spanish-speaking area. Emphasis on the practical application of spoken Spanish to everyday situations. Prerequisite: none. Two credits, elective only, no credit toward a major in Spanish. (2 crs.)

SPN 101. ELEMENTARY SPANISH I. For the student without previous knowledge of Spanish who wishes to achieve a sound basis for an active command of the language. The development of the fundamental speech skills, reinforced in the language laboratory. Progressively greater emphasis is placed on reading and writing. Three class hours and one hour language laboratory per week. (3 crs.)

SPN 102. ELEMENTARY SPANISH II. A continuation of Spanish 101. Three class hours and one hour language laboratory per week. Prerequisite: Spanish 101 or one year of high school Spanish. (3 crs.)

SPN 203. INTERMEDIATE SPANISH I. An adequate review of the essentials of Spanish grammar through intensive oral structures and written practice to facilitate the use of

Spanish grammar, and to develop the use of words and expressions accepted throughout the Spanish-speaking world. Three class hours and one hour language laboratory per week. Prerequisites: Spanish 101 and Spanish 102 or their equivalents. (3 crs.)

SPN 204. INTERMEDIATE SPANISH II. To develop a reasonable control of the principal structural patterns through dialogue and oral, reading, and writing practice from reading of modern authors. Three class hours and one hour language laboratory per week. Prerequisite: Spanish 203. (3 crs.)

SPN 211. SPANISH CONVERSATION, COMPOSITION, AND PHONETICS I. Intensive practice based on modern prose to provide models of natural, spontaneous speech which includes cultural themes and colloquialisms and up-to-date dialogues on which to base class discussions. Written compositions using orthographic rules and an introduction to written Spanish. Three class hours and one hour language laboratory per week. Prerequisite: Spanish 204. (3 crs.)

SPN 212. SPANISH CONVERSATION, COMPOSITION, AND PHONETICS II. A study of the essential Spanish morphology, syntax, semantics, and linguistics, as reflected in some representative authors that confronts the student with new ways of writing and thinking that prepare him for the Spanish Culture and Civilization courses. Three class hours and one hour language laboratory per week. Prerequisite: Spanish 204. (3 crs.)

SPN 215. CULTURE AND CIVILIZATION OF SPAIN. A study of the most significant aspects of Spanish history, with a broad discussion of its essential characteristics and contribution to western civilization. Designed to stimulate thought on the social, political, economic, and cultural problems of Spanish history. Three class hours each week. Prerequisite: Spanish 211 or Spanish 212. (3 crs.)

SPN 216. CULTURE AND CIVILIZATION OF HISPANIC-AMERICA. A study of the pre-Colombian cultures of the Spanish-American countries and the impact of the Spanish conquest upon the peoples of these countries. Wider appreciation of the psychological elements that have made their imprint upon the people who live in these lands and an examination of the contemporary political, economic, literary, artistic, and scientific movements in the most important republics of Hispanic-America, and their relationship to the United States. Three class hours each week. Prerequisite: Spanish 211 or Spanish 212. (3 crs.)

SPN 295. STUDIES IN HISPANIC CULTURE. Taught in English; no knowledge of Spanish required. An Arts and Sciences elective in the Modern Language Department. Offers insight into Spanish culture and civilization, providing material that is interesting and intellectually challenging, from primitive culture, Roman domination through the Arab conquest, and the impact of the discovery of America on Spanish life. The individual topic for studies in Hispanic Culture changes from semester to semester.

Specific topics selected through guest lecturers; films, slides, moveis, music and other educational media illustrate the Spanish way of life, past and present. As long as the topics remain different, the course may be repeated. Three class hours each week. No prerequisite. (3 crs.)

SPN 296. SPANISH FOR SOCIAL WORKERS I. The fundamental vocabulary used for interviews. The development of basic Spanish language meaning structure. (3 crs.)

SPN 297. SPANISH FOR SOCIAL WORKERS II. Continuation of SPN 296 I, with special emphasis on the development of conversational vocabulary and sentence structure. (3 crs.)

SPN 298. SPANISH FOR MEDICAL TECHNOLOGY I. The fundamental vocabulary used at hospitals, with emphasis on the practical use of the Spanish language in specific situations. (3 crs.)

SPN 299. SPANISH FOR MEDICAL TECHNOLOGY II. Continuation of SPN 298 I, with special emphasis on the development of conversational vocabulary and sentence structure as it relates to hospital situations.

These courses are designed to be taken in sequence. Instructional media and textbooks especially written for these courses are used to develop communication skills in the Spanish language.

Students without any knowledge of Spanish should take Elementary Spanish I and II in order to have a better foundation. Students with two years of high-school Spanish need not take Elementary Spanish I and II, but may receive credit for these two courses by examination at the discretion of the instructor. (3 crs.)

SPN 305. CERVANTES: DON QUIXOTE. Prerequisite: Spanish 321 or Spanish 322. (3 crs.)

SPN 307. THE GENERATION OF 1898. A study of novels, short stories, essays, poetry, and dramas of the most representative authors of this period and their influence on modern Spanish literature. Prerequisite: Spanish 321 or Spanish 322. (3 crs.)

SPN 308. GOLDEN AGE DRAMA. A study of the verse dramas which illustrate the dramatic techniques and themes prevalent in Spain between 1600 and 1700. Prerequisite: Spanish 321 or Spanish 322. (3 crs.)

SPN 316. GOLDEN AGE NOVEL. The major prose works of the Renaissance and Baroque styles: the Pastoral, Chivalric, and Picaresque novels. Prerequisite: Spanish 321 or Spanish 322. (3 crs.)

SPN 321. SURVEY OF SPANISH LITERATURE. An introduction to the masterpieces of Spanish literature, ranging from *Poema de Mio Cid* to current authors. Represented will be all of the important Spanish literary genres: narrative poetry (epic and ballad), lyric verse, the short story, and selections from novels and dramas. Prerequisite: Twelve hours of Spanish beyond Spanish 102. (3 crs.)

SPN 322. SURVEY OF SPANISH-AMERICAN LITERATURE. A study of representative selections from the colonial period to the present, with emphasis on the salient characteristics and the distinctive contributions of each literary form in the period or movement under study. Prerequisite: Twelve hours of Spanish beyond Spanish 102. (3 crs.)

SPN 469. STUDIES IN SPANISH LITERATURE. For the benefit of teachers in service or to meet special problems or deficiencies. Prerequisite: Eighteen hours of Spanish. (VC)

SPN 479. FIELD WORK IN SPANISH STUDIES. Study outside the United States, usually in a Spanish-speaking country. Subjects are chosen from courses to be offered in Spanish at an established and accredited educational institution. Three class hours each week or according to the program of the institution. Prerequisite: consent of the instructor. (VC)

SPN 490. READINGS IN THE LITERATURE OF SPAIN AND HISPANIC-AMERICA. For Spanish majors wishing to study in depth authors of Spain and Hispanic-America. Works to be selected. Prerequisite: Spanish 321 or Spanish 322. (3 crs.)

THE 098. HIGH SCHOOL THEATRE WORKSHOP. For in-service high school students and teachers. Practical and intensive experience in production, rehearsal, and performance techniques useful for high school theatre programs. (3 crs.)

THE 100. INTRODUCTION TO THE THEATRE. An overview of the composite art of theatre — from idea to reality — with representative readings from dramatic literature. (3 crs.)

THE 101. VOICE AND SPEECH. Vocal techniques for performance; use of the Lessac system, a method of involving the body, the senses, and the imagination. (3 crs.)

THE 102. VOICE AND INTERPRETATION. Methods of analysis and presentation for effective oral reading of dramatic literature, prose, and poetry. (3 crs.)

THE 110. GAMES AND IMPROVISATIONS. A non-acting approach to solving dramatic problems. Theatre games, sensitivity exercises, and spontaneous non-verbal improvisations stimulate the student to discover that recall of past physical and emotional experiences is useful in most dramatic situations. (3 crs.)

THE 115. MOVEMENT. Designed to improve the individual's suppleness and control, and to increase awareness of spatial relationships. Includes specific techniques for performers. (3 crs.)

THE 117. STAGE COMBAT TECHNIQUES. Hand-to-hand and sword-fighting techniques for performers and directors. (1 cr.)

THE 125. MAKE-UP. Theory and practice of make-up for performance. (2 crs.)

THE 130. FUNDAMENTALS OF ACTING. Basic theories and techniques of acting, with application in rehearsal and performance of selected scenes. (3 crs.)

THE 140. FUNDAMENTALS OF MIME. Basic theories and techniques of mime. Emphasis on body control and gesture with application in scenes, both improvised and planned, to communicate ideas and feelings non-verbally. (3 crs.)

THE 151. TECHNICAL PRODUCTION I. Introduction to the principles and practice of planning and constructing scenery. (3 crs.)

THE 152. TECHNICAL PRODUCTION II. Advanced principles and practice in planning and constructing scenery. Prerequisite: THE 151 or consent. (3 crs.)

THE 191. THEATRE WORKSHOP. Specific assignments in cast or crew for campus play productions. (May be repeated for credit. See guidelines.) (1 cr.)

THE 200. FUNDAMENTALS OF DIRECTING. The directorial analysis of plays, plus fundamentals of composition, picturization, movement, rhythm, and pantomimic dramatization. (3 crs.)

THE 211. LIGHTING I. Basic theory and practice in lighting. (3 crs.)

THE 212. LIGHTING II. Advanced practice in lighting. Prerequisite: THE 211 or consent. (3 crs.)

THE 215. PERIOD MOVEMENT AND DANCE. Studies in classical through early 20th-century movement and dance as applied in performance. (3 crs.)

THE 225. COSTUME CONSTRUCTION. Basic sewing techniques applied to the construction of costumes; the use and care of sewing machines. (3 crs.)

THE 240. CREATIVE DRAMATICS. (Sections for students in Early Childhood and Early Elementary.) The stimulation and development of creativity through playmaking exercises, story-telling, spontaneous improvisations, and sensitivity techniques useful for potential teachers and parents. (3 crs.)

(Sections for students in Upper Elementary.) The stimulation and development of creativity and communication skills through creating spontaneous plays selected from children's literature.

THE 245. CHILDREN'S THEATRE. The selection, direction, and production of plays for children. (May be repeated for credit.) (3 crs.)

THE 250. PLAYWRITING. (3 crs.)

THE 255. PUPPETRY. The planning and production of puppet plays. (3 crs.)

THE 257. HISTORY OF COSTUME. A survey of the history of costume in the western world. (3 crs.)

THE 261. HISTORY OF THE THEATRE I. The development of the theatre from the Classic through the Baroque, including representative plays. (3 crs.)

THE 262. HISTORY OF THE THEATRE II. The development of the theatre from the Baroque to the present, including representative plays. (3 crs.)

THE 263. AMERICAN THEATRE HISTORY. A survey of the American theatre from Colonial times to the present, including representative plays. (3 crs.)

THE 265. FILM THEORY AND CRITICISM. Film as medium and message, method of escape, and ethical movement, films of historical and contemporary interest are shown. (3 crs.)

THE 270. READER'S THEATRE. The principles and practice of organizing and presenting Reader's Theatre presentations. Prerequisite: THE 102 or consent. (3 crs.)

THE 305. SHAKESPEARE IN THE THEATRE. Representative Shakespeare plays studied as theatrical presentations. (3 crs.)

THE 307. LYRIC THEATRE. Opera considered as a theatrical art combining music, drama, acting, dance, and design. Extensive use of recordings and visual material to illustrate and supplement discussion. (3 crs.)

THE 315. WORLD DRAMA ON STAGE. Classical to 19th-century plays — excluding Shakespeare — studied as theatrical presentations. (3 crs.)

THE 317. MODERN DRAMA ON STAGE. 19th and 20th-century plays studied as theatrical presentations. (3 crs.)

THE 321. SCENERY AND LIGHTING DESIGN I. Introduction to the theories and practice of designing scenery and lighting. Prerequisite: THE 151 or consent. (3 crs.)

THE 322. SCENERY AND LIGHTING DESIGN II. Advanced theory and practice of designing scenery and lighting, with emphasis on designing for various environments. Prerequisite: THE 321 or consent. (3 crs.)

THE 325. COSTUME DESIGN. Basic principles of costume design. Students will be expected to complete various design projects for specific plays selected from a variety of historical periods. (3 crs.)

THE 330. ADVANCED ACTING. Designed to extend basic acting skills and to develop the students actor's ability to handle a variety of acting problems within specific periods of dramatic literature. Prerequisite: THE 130 or consent. (3 crs.)

THE 391. PERFORMING FOR CHILDREN. An opportunity for students to perform before young audiences. Prerequisite: audition or consent. (May be repeated for credit.) (6 crs.)

THE 392. PRODUCTION, REHEARSAL AND PERFORMANCE. Special acting, directing, management, and design or technical involvement in a play production. Prerequisite: junior-senior level only. (May be repeated for credit. See guidelines.) (3 crs.)

THE 400. DRAMATIC THEORY AND CRITICISM. Theories and methods of dramatic structure and their application to theatrical presentations. (3 crs.)

THE 409. SPECIAL PROBLEMS IN ACTING. (3 crs.)

THE 419. SPECIAL PROBLEMS IN DIRECTING. (3 crs.)

THE 429. SPECIAL PROBLEMS IN DESIGN. (3 crs.)

THE 439. SPECIAL PROBLEMS IN TECHNICAL PRODUCTION. (3 crs.)

THE 449. SPECIAL PROBLEMS IN PLAYWRITING. (3 crs.)

THE 459. SPECIAL PROBLEMS IN HISTORY AND LITERATURE. (3 crs.)

THE 469. SPECIAL PROBLEMS IN THEORY AND CRITICISM. (3 crs.)

THE 479. SPECIAL PROBLEMS IN FILM. (3 crs.)

All the above are advanced projects involving independent study and research. Prerequisite: junior-senior level only. (May be repeated for credit. See guidelines.)

GUIDELINES

The guidelines for the following courses are published here as a reference for advisers and as a guide for students:

THEATRE WORKSHOP: Open to all students; may be repeated for credit provided the assignment varies; grade based on a quality determination, plus a minimum number of hours worked and completion of the project to the complete satisfaction of the instructor, **or** quality determination and completion of the project to the complete satisfaction of the instructor. Assignments: (1) crew head for a major production; (2) directing a departmentally-sponsored one-act play; (3) leading role in a departmentally-sponsored one-act play; (4) minor role in a major production; (5) stage managing a departmentally-sponsored one-act play; (6) special cast, crew or production assignments. A grade may be assigned retroactively within the student's next regularly enrolled semester provided an agreement is made between the student and the instructor **before** the assignment in undertaken.

PRODUCTION, REHEARSAL AND PERFORMANCE: A junior-senior level course implying distinctive work in cast, crew, or production; project selection based on departmental policy, as an outgrowth of class work or as the result of competition or audition; may be repeated for credit provided the assignment varies. Additional credits may not be substituted for required or elective courses within the department's curriculum. Grade evaluation determined by the instructor upon satisfactory completion of criteria predetermined by the instructor and the student, e.g., a prompt script, elevations, working drawings, an in-depth character analysis, etc. A grade may be assigned for special and distinctive **off-campus** assignments or projects performed under faculty supervision and subject to the above regulations but exclusive of student teaching projects undertaken as part of student teaching. Assignments: (1) design and supervision of execution for either scenery, costumes, or lighting for a major production; (2) technical direction for a major production; (3) directing a major production; (4) leading or feature role in a major production; (5) stage managing a major production; (6) choreographer or musical director for a major production; (7) special projects in cast, crew, or production, which projects must receive departmental approval. A grade may be assigned retroactively within the student's next regularly enrolled semester provided an agreement is made between the student and the instructor **before** the assignment is undertaken.

SPECIAL PROBLEMS: A junior-senior level course conceived as a seminar or independent study under faculty supervision or as a practical or scholarly research project; may be repeated for credit provided the assignment varies. Additional credits may not be substituted for required or elective courses within the department's curriculum.

URBAN AFFAIRS

XUA 326. PROGRAM PLANNING. An understanding and general knowledge of the program fields in relation to programming principles, planning objectives and goal-setting, structural organization, purposes and values of types of activities, selection of program content, program planning, and evaluation. Principles of planning, organizing, and conducting workshops, institutes, conferences, clinics, and special projects in recreational settings. (3 crs.)

XUA 328. LEISURE LEARNING. Instruction and participation to develop beginning skill competency in the program areas included in the main cultural dimensions of leisure: physical, artistic, intellectual, and social interests. The student in provided with the essential skills and methodology for instructing the various experiences. Prerequisite: XUA 326. (3 crs.)

XUA 330. COMMUNITY ORGANIZATION AND LEADERSHIP. Bases and methods of community organization for recreation; functions and organizational patterns of public, private, voluntary, political, and pressure groups. Theory and study of community agencies. An understanding of the dynamics of leadership: theories, principles, practices, dynamics, and methods of working with individuals and groups. Professional and voluntary leader recruitment, selection, training, development, and evaluation, resident participation, organizations, politics, election data, bureaucracy, analyzing election data, power systems, decision making. (3 crs.)

XUA 335. RECREATION LEADERSHIP. Offered to provide students with actual experiences and leadership in various recreational opportunities. The course will place the student in a responsible leadership position requiring him to exercise all theories, principles, and practices of effective leadership dynamics. Offered only during the summer semester; students will use the recreation program sponsored by the Elementary Education Department as the major placement center. Other approved areas also used, especially where the college can render service to a municipal department or agency. (3 crs.)

XUA 350. RECREATION AND THE SCHOOLS. A thorough and critical analysis of the history and rationale for the Community-School movement. The study of organizational patterns and degrees of cooperation, legal aspects of school involvement; socio-economic benefits of school recreation, resources, nationwide trends and practices, and principles and practices for the development of school recreation. The role of the Community-School, its impact on the solution of community and social problems. The staff, financing, facilities, organization, and administration of the Community-School. (3 crs.)

XUA 355. SCHOOL INTRAMURAL AND RECREATION PROGRAMS. Organization and administration of school recreation programs, with emphasis on principles, procedures, and practices for effective programming. Curriculum content, adult education, extracurricular activities, after-school and vacation programs, and cooperative programs with other agencies. (3 crs.)

XUA 368. ADMINISTRATION OF PRIVATE AND COMMERCIAL RECREATION. Survey of the scope and development of private and commercial recreation agencies, facilities, and services. An examination of effective administrative guidelines and procedures including: personnel management, legal status, accounting, records and data, public relations, advertising and promotion, programming, areas and facilities, and other pertinent administrative aspects. (3 crs.)

XUA 400. RECREATION AND PARK ADMINISTRATION. An analysis of managerial and administrative practices and processes in recreation, park and agency departments, including: legislation, legal liability, planning, organizing, staffing, directing, coordinating, evaluating, budgeting, finance, records, reports, research, office management, public relations, areas, facilities, and programming. Prerequisite: Junior standing. (3 crs.)

XUA 416. PLANNING AND DEVELOPING AREAS AND FACILITIES. Principles, practices, guidelines, and problems in the planning, organization, acquisition, development, and maintenance of public, private, and school-related park, recreation, and outdoor education areas and facilities. A study of standards, trends, surveys, land-use patterns, layouts, designs, landscapings, and functional usage of areas. The planning and realization process. Community analysis and funding, urban renewal, zoning, and other applicable areas. Must have Junior standing. (3 crs.)

XUA 449. PRACTICUM IN URBAN AFFAIRS. The student interns in one of numerous planning, development or social agencies or organizations serving the Washington, Greene, Westmoreland, Fayette, and Allegheny County regions. Can be taken for 3-17 credits, and will include cooperating agency supervision as well as performance review and evaluation by the Urban Affairs Coordinator. (VC)

XUA 469. PROFESSIONAL PRACTICUM. Professional field experience with an approved cooperating agency or department appropriate to the student's career choice. Practical on-the-job experience in an established organization or agency. Appropriate time commensurate to credit hours. Consent of the instructor. Limited to majors with a field of specialization in Urban Recreation and Park Administration. (VC)

XUA 479. INDIVIDUAL STUDY. An opportunity to engage in individual study, field observations, or research whereby the student can gain either expertise in a subject area not currently offered and/or further specialized competence in a specific allied discipline. (VC)

XUA 480. SEMINAR IN URBAN AFFAIRS. Discussion and research on the decisions and problems facing the contemporary city. Stress on familiarizing the student with the modern city, and on the resources available for a better understanding of Urban Affairs. (3 crs.)

XUA 495. SEMINAR IN URBAN RECREATION AND PARK ADMINISTRATION. Designed for Seniors. Problems, professional preparation, trends in the field, relevant issues, guest lecturers, discussions, and student papers. Time involvement dependent upon credit subscription. (VC)

ARTS AND HUMANITIES

XAH 101. ARTS AND HUMANITIES. (3 crs.)

XAH 201. ARTS AND HUMANITIES. (3 crs.)

These courses aim to sensitize students to experience completely and fully the aesthetic qualities in man-made and natural objects. In 101 the general emphasis is on perception, reaction, analysis, interpretation, and evaluation of art objects. In 201 the general emphasis is on the process of producing art objects.

School of Education

For more than 100 years California State College has prepared teachers for the public schools of the Commonwealth. It enjoys a reputation of excellence and its graduates are able to obtain teaching certificates in every state in the Union.

The School of Education consistently meets all standards of accrediting agencies. California State College is accredited by the Middle States Association of Colleges and Universities and the School of Education has national accreditation from the National Association of Colleges of Teacher Education.

Programs offered lead to the degree of Bachelor of Science in Education. Major programs available include: Comprehensive Special Education, Speech Pathology and Audiology, Elementary Education (Kindergarten to Grade Six); Early Childhood Education (Nursery School to Grade Three), Industrial Arts and Secondary Education. The Secondary Education Curriculum further provides opportunity to major in Science, (Biology Chemistry, Physics. Earth Science), English, Communication (English, Speech and Theater), Mathematics, Modern Foreign Language (Spanish, French or German), and Comprehensive Social Science (History, Geography, Political Science, Economics, Psychology, Sociology and Anthropology). The School of Education also offers special programs for graduate nurses in either the Public School Nursing Program or the Nurse Anesthetist Curriculum. Dental Hygientists are also eligible for enrollment in a program leading to a Bachelor of Science Degree in Education and certification as a Public School Dental Hygientist.

Students enrolled in the School of Education, regardless of major, may also enroll in one or more endorsement programs. Endorsement programs enable a person to teach in an additional area. California State College presently has four such programs. They are General Science, Driver's Education and Safety, Environmental Education and Athletic Coaching.

CERTIFICATION OF TEACHERS

Students completing a program in the School of Education receive a Bachelor of Science Degree and an Instructional I certificate. The certificate is the license to teach in the Commonwealth and is valid for three years of teaching in Pennsylvania. In order to teach for more than three years in Pennsylvania, the Instructional I certificate must be converted to an Instructional II certificate. This is done by completing three years of satisfactory service in the Commonwealth and earning twenty-four post baccalaurate credits. These credits may be undergraduate, graduate or in-service credits or any combination thereof.

ADMISSION TO TEACHER EDUCATION

Admission to California State College is not a guarantee that a student majoring in education will be permitted to complete the program (which includes student teaching) and receive a teaching certificate. The School of Education has established standards that all education majors must meet in order to complete the Teacher Education Program. Some of these standards

are embodied in the Admission to Teacher Education Program which is usually initiated by the candidate in his sixth or seventh semester of study. In summary, a candidate must meet the following requirements:

1. A quality point average of 2.30 in the major field. For students in the Early Childhood and Elementary curriculums, this average will be computed using both elementary and professional education courses.
2. An overall or cumulative average of 2.00, and must be in satisfactory academic standing at time of application.
3. Completed at least 64 credits (including transfer credits) with a minimum of 12 credits completed in the major field.
4. The recommendation of his adviser or major department head.
5. A personal interview with and recommendation of a member of the Committee for Admission to Teacher Education.
6. Approval by the Committee for Admission to Teacher Education. Application forms for the admission process should be secured from the candidate's departmental office.

All of the above requirements are prerequisites to a student teaching assignment.

Candidates who do not meet the standards for Admission to Teacher Education on initial application have two semesters in which to correct deficiencies and reapply for admission. If still not approved, they may elect to transfer to another curriculum or, with special permission of the Committee, take 14 credits in lieu of student teaching and graduate without teacher certification.

The latter option (waiver of student teaching and teaching certification) is also available to students who, for exceptional reasons, change their plans about career teaching but wish to complete their baccalaureate programs. The student must initiate, in writing and in person, a reasoned request to do so to the Committee on Admission to Teacher Education. Such requests must be reviewed and approved by the Committee. If the waiver request and course credits in lieu of student teaching credits are approved, the student may earn his degree without teaching certification. (A notation to this effect is carried on the student's transcript.)

It should be emphasized that the Admission to Teacher Education Program, in total, is also designed for the student's growth in **educative, experiential,** and **self-evaluative** ways.

STUDENT TEACHING

Student teaching, a major professional laboratory experience, is conducted under the supervision of the Director of Student Teaching. California State College has five student teaching programs: elementary, secondary, industrial arts, speech pathology and audiology, and special education. Students who are candidates for certification are required to earn twelve semester hours of credit in student teaching. However, student teaching is a competency based program and may continue beyond one semester. Candidates will be certified

to teach only if they demonstrate ability to teach effectively. Teaching competency will be determined by the Director of Student Teaching, the College Supervisor, and the Co-operating Teacher or Teachers. The student teacher also carries a two credit hour Practicum while fulfilling his student teaching requirements. Student teaching is conducted in selected public schools located in the service area of the college.

The institutional philosophy regarding student teaching is to prepare students adequately to assume their professional responsibilities in the teaching profession in a democratic society, and to develop their appreciation of their need for a mastery of the professional knowledge and skill essential to all teaching and special proficiency in their area of specialization. Student teaching is to provide a climate wherein the student may exhibit his creativity and ability to make critical judgements based upon knowledge and reason.

Applications for student teaching may be secured at the Student Teaching Office. They are filed in the office of the Director of Student Teaching. Interviews for student teaching assignments are held each October and February.

Before students may be assigned to this vital part of the Teacher Education Curriculum, they must:

a. be admitted to Teacher Education

b. maintain an overall quality point average of 2.0

c. obtain departmental approval as having satisfactorily completed the required preparatory work.

Students will not be assigned to student teaching until they have completed at least one semester's work in this college. Graduates of other colleges must meet the requirements of admission to Teacher Education before being assigned to student teaching.

STUDENT TEACHING FOR EXPERIENCED TEACHERS

Teachers who have had three or more years of teaching experience, may be permitted to complete the student teaching requirement by special arrangement in consultation with the Dean of the School of Education. The Dean of the School of Education may allow the student to fulfill the student teaching requirement for the Bachelor of Science Degree in Education by making a substitute requirement in keeping with the needs of the individual student.

PROFESSIONAL LABORATORY EXPERIENCES

Educators have observed that those who enter the teaching profession with a wide variety of contacts with young children, adolescents, and adults usually become superior teachers. Many of those who fail as teachers or remain mediocre throughout their careers lack such experiences. Obviously everyone cannot acquire a sufficient number of these experiences in the classroom. A program of **Professional Laboratory Experiences** has been devised by each curriculum department to include not only school activities but also activities in communities and in connection with employment. Professional Laboratory Experiences include all those contacts with children, youth, and adults (through observation, participation, and teaching) which make a direct con-

tribution to the understanding of individuals and their guidance in the teaching-learning process.

It is hoped that this program will help students, as prospective teachers, to get an overall picture of the nature of work in a public school. It is essential that students learn to recognize their strong points as well as their deficiencies, whether they be academic, social, or physical. This program is intended to give students an opportunity to learn to exploit their outstanding abilities and to take intelligent action towards elimination of their weaknesses.

Worthwhile experiences are not confined to those which foster intellectual growth alone. Participation in activities which add to physical and social development is vital. These may include such activities as sports in both intra- and intercollegiate competition, student organizations including professional and special interest clubs, (dramatics, debate and other forensics), and music activities.

Professional Laboratory Experiences present an opportunity to add to the knowledge and skills gained in college classes. The program offers a yardstick which will assist to measure the practical value of theory, and to check students' understanding of theory in action. It will help students to see their own needs, both personal and professional, and to outline experiences which should be included in their future study. It will assist students to study intelligently their ability to guide others in actual learning situations. This program is an opportunity for self-improvement; it is an excellent means by which students can become more realistically aware of their own capabilities.

THE THOMAS E. MORGAN LEARNING AND RESEARCH CENTER

The concept of regional learning and research centers in Pennsylvania was born in the mid-1960's. There are some seven of these regional facilities, most of them located on state college campuses. Each of the seven centers has its own "mission." The mission at California State College's Learning and Research Center is education of the disadvantaged. The Thomas E. Morgan Learning and Research Center was dedicated in 1973.

The components which comprise the Learning and Research Center include the educational media center (A. V.), the educational development center, the psychology department, and the office of research. Initially, the campus school was included. Fiscal problems caused the closing of the campus school as a college-operated entity in May, 1976. The physical facility of the campus school is now operated as a part of the California Area School District. Another recent change is the opening of the combined campus school library and the curriculum materials library. This is located on the second floor, adjacent to the psychology department.

The Morgan Learning and Research Center houses nearly all psychology classes and laboratories. All educational media classes also are taught here. Selected courses in elementary health and physical education are scheduled in the Learning and Research Center. Thousands of learners make good use of the acoustically superior auditorium every year.

Programs at the L. & R. C. which are aimed at improving education of disadvantaged citizens include the Mon Valley Health Center Day Care

Program, the Washington-Greene County Operation Headstart Program, the Intermediate Unit I – C. S. C. Adult Basic Education Program, and the Reading Academy for Disadvantaged Readers.

THE ELEMENTARY EDUCATION AND EARLY CHILDHOOD CURRICULUM

The Department of Elementary Education offers the prospective teacher two complete programs leading to the Pennsylvania Instruction I Certificate issued by the State Department of Education.

The Elementary Education program is designed to incorporate students working with children in directed experiences and leads to Kindergarten through sixth grade certification.

The Early Childhood program is designed to incorporate students working with children in directed experiences and leads to Nursery through third grade certification.

Both programs offered by the Department of Elementary Education utilize modern techniques and practices in classroom and practical working experiences.

The Professional Semester is a program designed by the staff of the Department of Elementary Education to enhance the Elementary Education program. Included in this block of courses are:

Teaching of Language Arts	3 credits
Arithmetic Content and Method	3 credits
Teaching of Social Studies	3 credits
Science in the Elementary School	3 credits

The Professional Semester is scheduled prior to the student teaching program. Goals of this program are:

1. To group methods courses into more meaningful units.
2. To help identify the prospective teacher as an elementary educator.
3. To provide opportunities for the faculty to teach cooperatively.
4. To provide pre-student teaching experience for students.

Community service plays an important part in the education of an Elementary Education major. The Elementary Department and the Reading Center sponsor a summer reading camp called Camp California. Many of the Elementary Education majors work at Camp California for six weeks during the summer. Students for the Camp are supplied by the local communities.

Additionally an undergraduate diagnostic tutoring program has been designed to acquaint students with diagnostic and remedial reading techniques. It provides the undergraduate student an opportunity to provide diagnosis and remediation of reading problems on an individual basis for children.

A summary of the requirements for the Bachelor of Science Degree in Elementary Education and Early Childhood Education is given below:

ELEMENTARY EDUCATION

A. General Education		60 credit hours
Humanities	10	
Social Sciences	10	
Natural Sciences	10	
Free Electives	30	
B. Professional Education		25 credit hours
Foundations of Education	3	
Ed. Psychology	3	
Child Psychology I	3	
Intro to Ed Media	2	
Student Teaching	12	
Professional Pract.	2	
C. Elementary Education		26 credit hours
Math Content & Method	3	
Teaching of Social Studies	3	
Teaching of Language Arts	3	
Science for Elem. Teachers	3	
Health & Phy. Ed. Elem. Grs.	2	
Art for Elem. Teachers	3	
Children's Literature I	3	
Tch. Music in Elem. Grades	3	
Teaching of Reading	3	
D. Area of Interest		17 credit hours

The area of interest is optional. For Elementary Education majors who choose not to have an area of interest these 17 credit hours become free electives in Elementary Education.

TOTAL CREDIT HOURS 128

EARLY CHILDHOOD

A. General Education		60 credit hours
Humanities	10	
Social Sciences	10	
Natural Sciences	10	
Free Electives	30	
B. Professional Education		25 credit hours
Foundations of Education	3	
Ed. Psychology	3	
Child Psychology I	3	
Intro to Ed. Media	2	
Student Teaching	12	
Professional Pract.	2	

C. Early Childhood Education		37 credit hours
Lab. Exp. Nursery—Kndg.	3	
Field Exp. Early Child.	3	
Movt. Ed. in Early Child.	2	
Art for Early Childhood	3	
Music for Early Childhood	3	
Health & Phy. Ed. in E.C.	2	
Rdg. Exp. in Early Child.	3	
Children's Literature I	3	
Math Concept in E.C.	3	
The Child in Social & Phy. Environment	3	
Science for Early Child.	3	
Comm. Arts for Early Ch.	3	
Early Child. Seminar	3	
D. Free Electives in Education		6 credit hours

TOTAL CREDIT HOURS 128

CAREER POSSIBILITIES IN ELEMENTARY EDUCATION

CAREER OPPORTUNITIES:

1. Elementary Teacher
2. Middle School Teacher
3. Department Store Buyer Trainee
4. Airline Trainee
5. Insurance Sales Trainee
6. Management Trainee
7. Personnel Service Trainee

CAREER POSSIBILITIES IN EARLY CHILDHOOD EDUCATION

CAREER OPPORTUNITIES:

1. Teacher – Nursery through 3rd grade
2. Department Store Buyer Trainee
3. Airline Trainees
4. Insurance Sales Trainee
5. Management Trainee
6. Personnel Service Trainee

ATHLETIC COACHING ENDORSEMENT PROGRAM

The Health, Physical Education and Safety Department offers an Athletic Coaching Endorsement Program approved by the Pennsylvania Department of Education. In order to complete the program, the student must obtain a minimum of 18 credits. Twelve (12) of these hours are required as a basic core of the curriculum. The remaining six (6) are to be selected from the elective Theory and Technique courses of specific sports.

Since the core, or required, courses serve as basic foundations courses for coaching, at least half, or six (6) hours of these basic foundations courses must be completed prior to enrolling in any of the Theory & Technique courses. However, this prerequisite is waived for all individuals presently coaching in some capacity. These individuals have the opportunity to select any of the course offerings, and in any order, depending upon their needs and convenience. The prerequisite applies only to undergraduate students seeking to complete the entire Athletic Coaching Endorsement Program.

Required Courses		Credits
CPE 205	Foundations of Athletics	2
	or	
CPE 225	Foundations of Pre-Adolescent Athletics	2
CPE 305	Kinesiological Foundations of Coaching	3
CPE 315	Physiological Foundations of Coaching	3
CPE 325	Medical Aspects of Coaching	2
CPE 339	Practical Coaching Experience, or Directed Study	2*
		12

Elective Theory & Technique Courses (Select 3 courses)

CPE 306	Theory & Techniques of Baseball Coaching	2
CPE 307	Theory & Technique of Track & Field and Cross Country	2
CPE 316	Theory & Technique of Basketball Coaching	2
CPE 317	Theory & Technique of Soccer Coaching	2
CPE 326	Theory & Technique of Football Coaching	2
CPE 336	Theory & Technique of Golf Coaching	2
CPE 346	Theory & Technique of Gymnastic Coaching	2
CPE 356	Theory & Technique of Swimming & Diving Coaching	2
CPE 366	Theory & Technique of Tennis Coaching	2
CPE 376	Theory & Technique of Volleyball Coaching	2
CPE 386	Theory & Technique of Soccer Coaching	2

*Those individuals who are presently coaching will receive credit for this requirement, subject to approval by the Health, Physical Education & Safety Department.

CAREER POSSIBILITIES IN ATHLETIC COACHING

CAREER OPPORTUNITIES:

1. Athletic Coach in the Public Schools
2. Athletic Coach for non-school related programs (such as the YMCA, Little League, Midget Football, etc.)
3. Athletic Coach in the public schools for an individual not certified as a teacher, but still wanting to coach.

DRIVER EDUCATION ENDORSEMENT PROGRAM

The Health, Physical Education and Safety Department offers an endorsement program for a student seeking to become qualified as a Driver Education teacher in the secondary schools. In order to fulfill the requirements of this

program, the student must complete a minimum of twelve semester hours. Six of the twelve hours are required in the program. (HSD 300, Introduction to Safety and HSD 305, Driver Education and Traffic Safety.)

It can be pointed out that the same twelve hours required in the Driver Education Endorsement Program can be used as "free electives" in the thirty hour free elective block. For further information concerning the program, contact the Chairman of the Health, Physical Education and Safety Department in Hamer Hall.

*HSD 300 INTRODUCTION TO SAFETY ED. (3 credits)
*HSD 305 DRIVER ED. AND TRAFFIC SAFETY (3 credits) (Prerequisite: A Driver's License)
HSD 306 MATERIALS AND METHODS IN SAFETY IN THE SECONDARY AND ELEMENTARY SCHOOLS (3 credits)
HSD 307 MOTORCYCLE SAFETY (3 credits)
HSD 405 ORGANIZATION AND ADMINISTRATION OF SAFETY ED. (3 credits) (Prerequisite: HSD 300)
HSD 406 VISUAL AND OTHER AIDS IN SAFETY (3 credits)

*Required courses.

CAREER POSSIBILITIES IN DRIVER EDUCATION

CAREER OPPORTUNITIES:

1. Driver Education instructor in the public schools
2. Driving instructor for a private organization
3. Motorcycle safety instructor in the public schools or for a private organization

INDUSTRIAL ARTS CURRICULUM

The Industrial Arts Curriculum is structured to provide students with a general knowledge of the three areas of that discipline: industrial materials, power, and visual communications. Ample opportunity is afforded so a student may specialize in a particular area of interest. The culmination of four years of study in this curriculum will provide a Bachelor of Science in Education degree, thereby making the student eligible for the Pennsylvania College "Instructional I" certificate. A summary of the industrial arts requirements is given below:

A. General Education	57 credits
Humanities	10 credits
Social Sciences	10 credits
Natural Sciences	10 credits
Free Electives	27 credits

B. Professional Education		28 credits
Foundations of Education	3 credits	
Educational Psychology	3 credits	
Intro. to Educational Media	2 credits	
Intro. to Industrial Arts Education (professional laboratory field experience)	3 credits	
Organizing & Developing Course Materials for Industrial Arts Education	3 credits	
Student Teaching and Practicum	14 credits	
C. Major Field		45 credits
Industrial Materials:		
Fund. of Woodworking	3 credits	
Fund. of Metalworking	3 credits	
Fund. of Machine	3 credits	
Advanced Woodworking	3 credits	
Power:		
Electricity-Electronics I	3 credits	
Electricity-Electronics II	3 credits	
Power Technology	3 credits	
Visual Communications:		
Intro. Technical Drawing	2 credits	
Industrial Arts Design	2 credits	
Graphic Communication I	3 credits	
Graphic Communication II	3 credits	
Surface Development and Design	2 credits	
Machine Drawing	2 credits	
Elective – Industrial Arts:		
Laboratory	3 credits	
Drawing	2 credits	
Choise of elective labs or drawings	5 credits	

This program totals 130 credits with an opportunity for the graduate to become certificated for teaching or develop the skills and knowledge necessary for gainful employment in industry.

CAREER POSSIBILITIES IN INDUSTRIAL ARTS

CAREER OPPORTUNITIES:

1. Teacher (certified)
2. Preparation for Various Graduate Degrees:
   MS Ed – Industrial Arts
   MA – Administration
   MA – Guidance
3. Supervisor

4. Salesman
5. Maintenance Foreman
6. Technician
7. Estimator
8. Draftsman-Designer
9. Graphics Layout & Design
10. House Construction

THE SECONDARY EDUCATION CURRICULUM

California State College offers nine programs leading to certification for teaching in the secondary school. These certification programs include: Biology, Chemistry, Communications (Speech, Theatre, English, and Non-Print Media), Earth Science, English, Mathematics, Modern Foreign Language (French, German, Spanish), Physics, Comprehensive Social Studies, (History, Economics, Political Science, Sociology, Psychology, Anthropology and Geography).

The number of credit hours required varies with each academic major. A summary of these requirements is given below:

A. General Education		60 credit hours
Humanities	10	
Social Sciences	10	
Natural Sciences/Mathematics	10	
Free Electives	30	
B. Professional Education		33 credit hours
Required*	Cr.	
Foundations of Education	3	
Educational Psychology	3	
Problems of Secondary Education	3	
Adolescent Psychology	3	
Intro to Educational Media	2	
Developmental Reading in Secondary Schools	2	
Teaching of _____	3	or 4 varies
Student Teaching	12	
Professional Practicum	2	

*There are minor variations in certain curricula.

C. Academic Major

1. Biology – Area of Concentration (35)

Required (20)	Cr.
Principles of Biology	4
Botany I	4
Botany II	4
Zoology I	4
Zoology II	4
Restricted Electives (8)	
General Chemistry I	4
General Chemistry II	4
Biology Electives (7)	

2. Chemistry – Area of Concentration (35)

Required (35)	
General Chemistry I	4
General Chemistry II	4
Analytical Chemistry I	4
Organic Chemistry I	4
Physical Chemistry I	4
Ind. Work I	1
Calculus I	3
Calculus II	3
Biology	4
Physics I	4

3. Communications – Area of Concentration (50)

Communication Core (26)	
Composition Competency	
American Literature 361, 362, 363 (for Linguistics, Literature, & writing Concentration)	6
Any 6 cr. in Literature for Theater, Speech Comm. & Media	6
Advanced Writing	3
English Grammar and Usage	3
Public Speaking or Approved Alt.	3
Oral Decision Processes	3
Mass Communications	2
Six credits in Theatre taken from:	
151 Technical Production 130 Fundamentals of Acting 200 Fundamentals of Directing 191–193 Theatre Workshop	6

Communication Concentration

24 credits from the specialized areas:

Linguistics (24)	Cr.
Adolescent Literature	3
Linguistics, three additional courses	9
Writing, one additional course	3
Chaucer	3
310 Survey of Old & Middle Eng. Lit., or 481 Studies in Old & Middle Eng. Lit.	3
Electives	3

Literature (24)	
Adolescent Literature	3
English Literature, three courses, at least one before and one after 1800	9
Literary criticism, one course	3
Linguistics, one additional course	3
Electives	6

Media (24)	
Arts and Humanities 102	3
Introduction to Radio and Television Production	3
Workshops and/or Special Problems (in non-print media) from at least two areas: art, film, music, photography, radio, television, theatre	6
Electives (in non-print media) approved by adviser	12

Speech (24)	
Voice and Articulation or Introduction to Oral Interpretation	3
Group Discussion or Argumentation and Debate or Parliamentary Procedure	3
Evaluation Listening or Speech Criticism	3
Introduction to Communication Theory or Introduction to General Semantics or Language and Behavior	3
Workshops 192, 193, 194, and 195	3
Introduction to Radio and Television Production	3
Advanced Public Speaking or Persuasion	3
Freedom of Speech or History of American Public Address in Speech Communication or Contemporary World Address	3

Theatre (24)	
Production, Rehearsal, and Performance	3
Theatre History or Theatre Literature Sequence	6
Electives	15

Writing (24)

Adolescent Literature	3
Creative Writing, two 300 level courses	6
The Teaching of Writing	3
Journalism 307	3
Linguistics, one additional course	3
Electives	6

4. Earth Science – Area of Concentration (35)

Required (23) or (24)

General or Physical Geology	3-4
Meteorology	3
Oceanography	3
Astronomy	3
General Chemistry I	4
General Physics	4
Statistics or Algebra or Trigonometry	3

Restricted Electives (12)

Any Geology Course	
Physical Geography	3
Climatology	3
Cartography	3
Map Appreciation	3
Earth Science Workshop	
Special Prob. in Earth Science	
Field Methods	
Honors Courses	
Seminar	
Human Ecology	
Introduction to Biology	
Space Science	
Zoology	
Marine Science Consortium Crs.	
Other courses only with approval of adviser	

5. English – Area of Concentration (48)

Required (24)

Composition Competency	
Adv. Writing or Teaching of Writing	3
History of English Language	3
Grammar and Usage	3
Literature for Adolescents 305	3
Public Speaking or Approved Advance Speech Performance Course	3
Group Disc. or Oral Disc.	3
Practical Criticism	3
Independent Study	3

Restricted Electives (24)

Two of the following courses:

American Literature to 1865	3
American Literature 1865 to WWI	3
American Literature from WWI	3
Three English Literature Courses 300–500 level one prior to and one after 1800	9
Three English Literature courses 300 level of which two must be 400 or above.	9

6. Mathematics – Area of Concentration (33)

Required (24)

Math – Calculus I	3
Math – Calculus II	3
Math – Calculus III	3
Math – Calculus IV	3
Math – Geometry	3
Math – Abstract Algebra	3
Math – Linear Algebra I	3
Math – Statistical Analysis	3

Restricted Electives (9)

Two electives from group I and one from group II

Group I

Math – Differential Equations	3
Math – Topology	3
Math – Advanced Calculus I	3
Math – Advanced Calculus II	3
Math – Abstract Algebra II	3
Math – Statistical Analysis	3
Math – Linear Algebra II	3
Math – Data Processing II	3
Math – Assembler Language	3
Math – Honors	3

Group II

Math – Data Processing I	3
Math – Field of Math	3
Math – Field of Finance I	3
Math – Theory of Equations	3
Math – Seminar	3

7. Modern Foreign Language Teaching K–12 – Area of Concentration (30)

Required

Elementary I or Elementary II equivalent		6
Intermediate I	203	3
Intermediate II	204	3
Conv. and Comp. I	211	3

Conv. and Comp. II	212	3
Cult. and Civil. I	215	3
Cult. and Civil. II	216	3
Survey of Lit. I	321	3
Survey of Lit. II	322	3

Electives in major field (10)

8. Physics — Area of Concentration (35)

Required (18)

College Physics I	4
College Physics II	4
College Physics III	4
Calculus I	3
Calculus II	3

Restricted Electives (17)

Five credits in a natural science other than Physics.

Twelve credits from the following list:

Modern Physics I	3
Modern Physics II	3
Intermediate E & M Theory	3
Advanced Laboratory I	3
Advanced Laboratory II	3
Electronics	4
Advanced Mechanics	3
Advanced E & M Theory	3
Math. Meth. in Phy I	3
Math. Meth. in Phy II	3
Statistical & Thermal Phy	3
Radiation & Optics	3
Quantum Mechanics	3
Solid State Physics	3
Nuclear Physics	3
Plasma Physics	3
Special & Gen Relativity	3
Astrophysics	3
Astronomy	3
Seminar	1
Senior Thesis	1
Intermediate Mechanics	4

9. Social Studies — Area of Concentration (48)

Required (48)

Econ. 100, Elements of Econ 107 or 111 or 205, 207, or 305	3
Econ 115, 130, & all other Econ courses	3
History 101 or 102 or 105	3

History 111 or 112 or 121 or 122 3
Political Science 100 3
American Government 3
Geography 100, Intro. 3
Any other Geog. course 3
Sociology 100, Principles 3
Sociology course 3
Anthropology 100, Principles 3
Any other Anthro. course 3
Educational Psychology 110 3
Adolescent Psychology 206 3

The student must take 12 hours in one of 7 fields.

a. History (12)

History 495 3
Any 9 crs. in History

b. Anthropology (12)

Six credits from: 210, Prim. Inst; 230, Cult. & Person; 240, Folk & Peasant; 250, Acculturation; 280, New World Ethnology; 281, Sub-Saharan Africa. 6

Six credits from: 101, 102, Field School; 200, Old World Prehist; 350, Woodland Arch; 286, Man's Imprint; 365, Hist. Arch; 450, Prehist. Arch; 365, Sch.; 460, Hist Arch. Field School. 6

c. Sociology (12)

Sociology Cont. Soc. Prob 205 3
Sociology Min. Grp. Relations 218 3
Sociology 220, The Family 3
Sociology 235, Urban Sociology 3
Sociology 240, Social Institutions 3

d. Political Science (12)

Three credits in American Political Affairs (Pol. Sci. 205, 218, 220, 235, 250, 260) 3
Internat. Affairs (Pol. Sci. 207, 208, 216, 236, 237) 3
Three credits in Area Studies (Pol. Sci. 270, 280) 3
Three credits in Pol. Theory (Pol. Sci. 215, 217, 225) 3

e. Economics (12)

Economics Inter Micro 215 3
Economics Inter Macro 230 3

Any six hours from:
Econ. Labor Econ 235 3
Econ. Money & Banking 207 3
Econ. Public Fin. 208 3

Econ. Elem. Econometrics	3
Econ. Regional Econ. 260	3
Econ. Hist. Econ. Theory	3
Econ. Dev. of Am. Econ.	3
Econ. 305, Collect. Barg.	3

f. Geography (12)

Geo. 160 Physical Geog.	3
Geo. 105 Human Geography	3
Geo. 491–3 Seminar in Geography	3
Geo. 370 or 372 Cartography or Map Apprec. & Interp. 370	3

g. Psychology (12)

Child Psychology 205	3
Mental Hygiene 310	3
Social Psychology 320	3
Abnormal Psychology 400	3

CAREER POSSIBILITIES IN BIOLOGICAL SCIENCE

CAREER OPPORTUNITIES:

1. Teacher (certified)
2. Botanical Curator
3. Zoological Curator
4. Medical Sales
5. Biological Sales
6. General Science Teaching

CAREER POSSIBILITIES IN ENGLISH

CAREER OPPORTUNITIES:

1. Public School Teacher
2. Preparation for Graduate Degree in English or Communications
3. Public Relations Specialist
4. Personnel Adviser
5. Journalist
6. Copy Writer/Reader
7. Library Technician
8. Preprofessional Training in Law and Medicine

CAREER POSSIBILITIES IN GEOGRAPHY AND EARTH SCIENCE

CAREER OPPORTUNITIES:

1. Teaching
2. State Government
3. Industry

4. Highway Departments
5. Federal Agencies
6. Environmental Agencies

CAREER POSSIBILITIES IN PHYSICAL SCIENCE

CAREER OPPORTUNITIES:

1. Public School Teacher
2. Preparation for Graduate Programs in Education, Chemistry, or Physics

CAREER POSSIBILITIES IN SOCIAL STUDIES

CAREER OPPORTUNITIES:

1. Public School Teacher
2. Preparation for Graduate Degree
3. Education Consultant
4. Educational Salesperson

CAREER POSSIBILITIES IN SPEECH COMMUNICATIONS

CAREER OPPORTUNITIES:

1. Secondary Communication Teacher
2. Preparation for Graduate Degree in Communication
3. T. V. Work
4. Radio Work
5. Public Relations

CAREER POSSIBILITIES IN THEATRE

CAREER OPPORTUNITIES:

1. Public School Teacher
2. Administrator
3. Theatre/drama specialist for school districts, social groups and agencies: (neighborhood, youth, and senior citizens centers, libraries, summer camps, and recreation areas.)
4. Preparation for graduate degrees in theatre, drama, or communication in order to enhance or advance ones career in education.

SPECIAL EDUCATION – MENTALLY AND/OR PHYSICALLY HANDICAPPED CURRICULUM

Upon satisfactory completion of the Special Education Mentally and/or Physically Handicapped Curriculum as outlined below and upon the recommendation of the Dean of the School of Education, the student is awarded

the degree of Bachelor of Science in Education and is eligible for Pennsylvania "Instructional I" Comprehensive Special Education Certification. This certification enables the teacher to work with the following groups of handicapped children: mentally retarded, emotionally disturbed, learning disabled, brain damaged, and physically handicapped. The certification also covers degrees of severity mild through profound and grade levels K—12.

The summary of graduation requirements is given below:

A. General Education		60 credit hours
Humanities	10	
Social Science	10	
Natural Science/Mathematics	10	
Free Electives	30	
B. Professional Education		31 credit hours
Educational Foundations	3	
Educational Psychology	3	
Developmental Psychology	3	
Intro to Ed. Media	2	
Science in Elem Grades	3	
Elective	3	
Student Teaching	12	
Practicum	2	
C. Major Field		39 credit hours
Exceptional Child I	4	
Exceptional Child II	4	
Behavior Principles I	4	
Behavior Principles II	4	
Ed. Severely/Profoundly Handicapped	4	
Diag. Test. & Presc. Teaching	4	
Phys. Ed. Act. Excep. Children	3	
Curriculum & Methods I	4	
Curriculum & Methods II	4	
Habilitation Training	4	

CAREER POSSIBILITIES IN SPECIAL EDUCATION

CAREER OPPORTUNITIES:

1. Classroom Teacher — Mentally Retarded
2. Classroom Teacher — Emotionally Disturbed
3. Classroom Teacher — Brain Damaged
4. Classroom Teacher — Learning Disabled
5. Classroom Teacher — Physically Handicapped
6. Resource Room Teacher
7. Itinerant Teacher — Home Bound
8. Community MH/MR Program
9. Physical Education & Recreation

SPEECH PATHOLOGY AND AUDIOLOGY CURRICULUM

The experiences in the Speech Pathology and Audiology Department are integrated with the overall College program in order to provide students with a broad understanding of the needs of individuals with communication disorders.

The program emphasizes classroom studies integrated with clinic experiences. The student is gradually included in the clinic program as a freshman. Responsibility for clinical experiences increases proportionately with advancement in the program. The advanced undergraduate student participates as an assistant clinician in the Campus Clinic or one of the four participating off-campus clinics.

The department provides clinical services for individuals who have communication disorders. Students observe and/or assist in the diagnostic evaluations and therapy programs. The work includes experiences with individuals of all ages ranging from the pre school child to the adult.

Career opportunities include placement in environments such as the public and non-public schools, selected clinics and/or hospitals.

Upon satisfactory completion of the requirements of the Speech Pathology and Audiology curriculum, and upon the recommendation of the Dean of the School of Education, the student is awarded the degree of Bachelor of Science in Education and is eligible for a Pennsylvania College "Instructional I" Certificate in Speech Correction issued by the State Department of Education. Course requirements for completion of the academic program follow:

FOUR YEAR CURRICULUM IN SPEECH PATHOLOGY AND AUDIOLOGY

I. GENERAL EDUCATION REQUIREMENTS – 60 cr. hr.

Humanities	10 cr.
Natural Sciences	10 cr.
Social Sciences	10 cr.
Electives	30 cr.
TOTAL	60 cr.

II. PROFESSIONAL EDUCATION – 23 cr. hr.

Foundations of Education	3 cr.
Educational Psychology	3 cr.
Developmental Psychology	3 cr.
SPA 459 Student Teaching	12 cr.
SPA 490 Practicum	2 cr.
TOTAL	23 cr.

III. AREA OF SPECIALIZATION – 45 cr. hr.

REQUIRED

SPA 101	Phonetics	3 cr.
SPA 102	Hearing Problems	3 cr.
SPA 105	Language and Speech Development	3 cr.
SPA 106	Anatomy and Physiology of Ear & Vocal Mech.	3 cr.
SPA 200	Survey of Speech Pathology	3 cr.

SPA 211	Practice in Measurement of Hearing (Prereq. SPA 102)	3 cr.
SPA 212	Auditory Training & Speech Reading	3 cr.
SPA 215	Psychology of Speech and Hearing	3 cr.
SPA 321	Intro to Clinical Procedures	3 cr.
SPA 322	Clinical Methods and Techniques (Prereq. SPA 321)	3 cr.
SPA 323	Advanced Clinical Practicum	3 cr.
SPA 325	Administration of Public School Programs	3 cr.
SPA 409	Honors	1-6 cr.*

ELECTIVES:

(9 cr. to be chosen from the following)

Mental Hygiene	3 cr.
Psychology of Exceptional Child	3 cr.
Child Psychology	3 cr.
Adolescent Psychology	3 cr.
Abnormal Psychology	3 cr.
Psychology of Personality	3 cr.
Teaching of Reading	3 cr.
Exceptional Child I	3 cr.
Exceptional Child II (Prereq. E.C. I.)	3 cr.
Behavior Principles I	3 cr.
Behavior Principles II (Prereq. B.P. I.)	3 cr.
Education of Severely Handicapped (Prereq. E.C. I & B.P. I)	3 cr.
TOTAL	45 cr.
TOTAL HOURS	128 cr.

*Individually arranged with instructor; must be approved by department chairman. To be taken by upper classmen (Jr.—Sr.) only.

CAREER POSSIBILITIES IN SPEECH PATHOLOGY & AUDIOLOGY

CAREER OPPORTUNITIES:

1. Public Schools
2. Non-public schools
3. State Schools & Hospitals
4. Headstart Programs
5. Community Action Agencies
6. United Health Agencies
7. Easter Seal Societies
8. United Cerebral Palsy Assoc.
9. Nursing Homes

COMMUNITY SERVICES

The Department of Speech Pathology and Audiology, through the California State College Speech and Hearing Clinic, offers a full range of Speech, Language and Hearing diagnostic and therapeutic services.

The Speech and Hearing Clinic is conducted on a daily basis, six days per week. Services are offered to all persons depicting a Speech, Language or Hearing problem. Diagnostic evaluations are conducted by the Professional staff, which represents broad and varied areas of training and expertise.

A fee is charged according to the diagnostic services rendered (a fee schedule is available from the Department of Speech Pathology and Audiology). A fifty percent reduction in fees is available to patients 65 years of age and over. No fees are charged for any therapy which may be required for the individual clients evaluated at the clinic.

In addition to patients seen on a private basis, the Department of Speech Pathology and Audiology evaluates patients on a contractual basis, involving special fee schedules, through contract agreements with the Pennsylvania Department of Health, Bureau of Vocational Rehabilitation, and United Mine Workers' Health and Retirement Fund. Additional information may be obtained by contacting:

Chairman
Department of Speech Pathology and Audiology
California State College
California, Pennsylvania 15419
or
Phone: 938-4175; 938-4176

DENTAL HYGIENE PROGRAM

This program is designed for persons who have completed an approved program and have a valid license to practice Dental Hygiene. Students who have completed a two-year program of full time work would require an additional two years at California. Those students with three years of full time course work would be required to complete an additional year of work at California. Each student is required to earn a minimum of thirty (30) credits in residency at California State College. The student earns a Bachelor of Science degree in Education with certification as a Dental Hygienist. This meets the certification requirements for working within the public schools of Pennsylvania. A summary of the requirements is given below:

I. Dental Hygiene License

Must be earned at an approved institution of higher education

II. Professional Education (All Required)

EDF 100	Foundations of Education	3 credits
PSY 110	Educational Psychology	3 credits
PSY 207	Developmental Psychology	3 credits
EDF 305	Intro to Ed. Media	2 credits

III. General Education (A minimum of 18 credits)

Humanities	9 credits
Social Sciences	9 credits

Free Electives (As needed to complete the required 128 credits for graduation and the 30 credit residency requirement.)

PUBLIC SCHOOL NURSING PROGRAM

This program is designed for persons who have completed an approved nursing program and are registered nurses. California State College grants a total of 68 credits for completion of the R.N. Sixty additional credits are required in order to earn a Bachelor of Science degree in Education and certification as a Public School Nurse. A summary of the requirements is given below:

I. Public School Nursing		13 credits
*PSN 306	Public School Nursing	4 credits
**PSN 301	Public Health Nursing I	3 credits
**PSN 302	Public Health Nursing II	3 credits
**PSN 305	Nutrition & Community Health	3 credits
**PSN 405	Pre & Control of Com Disease	3 credits
Course in Sociology		3 credits
II. Professional Education (All Required)		12 credits
EDF 100	Foundations of Education	3 credits
PSY 110	Educational Psychology	3 credits
PSY 207	Developmental Psychology	3 credits
EDS 420	Introduction to Guidance	3 credits
III. General Education (A minimum of 35 credits)		35 credits
Humanities		9 credits
Social Sciences		9 credits
Free Electives (Minimum)		17 credits

*Required
**Must take two

REGISTERED NURSE ANESTHETIST PROGRAM

The B.S. in Education for Certified Registered Nurse Anesthetist is designed for persons who have completed an approved anesthetist program and are currently licensed CRNA's. California State College will grant up to a total of 68 credits for completion of the R.N. and an additional 26 credits for completion of the anesthetist program. To complete the requirements for a Bachelor of Science Degree in Education, students must complete 34 additional credits of approved college work. The residency requirement for the program states that 30 credits must be taken on the California State College campus. The complete program is as follows:

I. Professional Education (All Required)	25 credits
Foundations of Education	3 credits
Psychological Foundations of Nursing	3 credits
Developmental Psychology	3 credits
Introduction to Guidance	3 credits
Curriculum	3 credits
Instruction	3 credits
Test & Evaluation	3 credits
Adm. & Field Experience	4 credits

II. General Education 9 credits

(A minimum of 9 credits in humanities and social science electives).

EDUCATIONAL FOUNDATIONS

EDF 100. FOUNDATIONS OF EDUCATION. A survey course designed to contribute directly to the professional growth and development of the prospective teacher and to serve as an introductory course for the Arts and Science student. It stresses the history, philosophy, legal, and social foundations of the American educational enterprise. Emphasis is also given to teaching as a profession, as well as to the structure, administration, and support of the system of public education at the local, state, and federal levels. The student is encouraged to think constructively and creatively about education and self. (3 crs.)

EDF 206. INSIDE MYSELF AND WITH OTHERS. This course in values designed to give teacher trainees an opportunity to define themselves, what they believe, and how they relate to others. Methods used to achieve class objectives are small group dynamics, encounter techniques, and writing to one's self. (3 crs.)

EDF 305. INTRODUCTION TO EDUCATIONAL MEDIA. Emphasizes the learning of effective media utilization practices, the acquisition of skills in selecting materials and equipment, the operation of equipment and competence in simple local production techniques. For juniors, seniors and special students. Three class hours each week. (2 crs.)

EDF 306. MASS COMMUNICATION IN EDUCATION. This course seeks to prepare teachers to use newer media (film, TV, comics, etc.), to develop skills in selecting materials, to provide practice in operation of equipment, and to foster local production of media materials. For English and Communication majors of junior, senior and special status. Two class hours and one laboratory hour each week. (2 crs.)

EDF 316. TEACHING IN THE URBAN SCHOOL. Teaching in the Urban School is an elective course designed to prepare teachers for urban teaching. The content of the course will center upon the following units: Linguistics for Urban Teaching; The Psychological Development of the Black Child in America; The Relationship between Teacher Attitudes and Minority Achievement; A survey of Curriculum Materials and Teaching Methods Currently being Recommended for Use in Inner-City Schools; Observations of Inner-City Schools; Implications of Black Thought for Inner-City Teaching; and Simulated Classroom Experiences. (3 crs.)

EDF 317. GUIDANCE FOR ELEMENTARY TEACHERS. The purpose of this course is to provide the prospective teacher in the elementary school with an understanding of the philosophy of Elementary Guidance and with an awareness of the role of the Elementary School Counselor. The teacher's role in the total elementary guidance program is emphasized. (3 crs.)

EDF 380. VALUES CLARIFICATION IN TEACHING. This course for undergraduates will examine the process of values clarification and will explore ways that the process may be used in various subject matter areas. Procedures to be used in the course include: paper and pencil exercises, verbal or discussion exercises, self-analysis exercises, and role-practicing exercises. Ample opportunity will be provided for active participation by all class members. The instructor will frequently function as a class member and little course work will be required outside of the class period. (3 crs.)

EDF 493. FOUNDATIONS OF OPEN TEACHING. This course is designed to supplement the "method" courses presently required for certification. The methods used for instruction of the course are those which characterize open teaching — small seminar discussion groups, contracts, and creative activity centers. (3 crs.)

EDUCATIONAL FOUNDATIONS DEPARTMENT — MINI COURSES

EDF 205. SIMULATED CLASSROOM EXPERIENCES FOR THE INNER-CITY. This six-weeks course is designed to have students in teacher education participate in simulated inner-city classroom experiences. The entire course is based upon the S.R.A. Inner-City Simulation Laboratory which consists of two introductory film strips and records, fourteen color and sound films and a number of role-playing experiences. Each experience presents a problem in a fictitious but real inner-city classroom but ends abruptly without offering solutions. Class members will determine the method of evaluation. (1 cr.)

EDF 207. THE LEGAL RIGHTS AND RESPONSIBILITIES OF PUBLIC SCHOOL STUDENTS. This course is designed to acquaint teacher trainees with recent trends in student rights. Most of the responsibility for learning rests with the student who researches his interests concerning student rights. The class project entails writing and editing a pamphlet to keep students, teachers and administrators abreast of legal trends. (1 cr.)

EDF 208. IMPLICATIONS OF BLACK THOUGHT FOR INNER-CITY TEACHING. This six weeks course is designed to give students in teacher education insight into the thoughts of Black writers on current social and educational issues. It may be described as a reading/discussion class emphasizing in the reading material such topics as: the fairness of intelligence testing, Black language as a psychosociolinguistic system, the development of the Black child's self-concept in American society, and the influence of militant thinking on public education for Black children. The major course project will involve writing and editing for E.D.C., mimeographed booklets dealing with the implications of Black thought for teaching Black children. Students in the class will evaluate (grade) each person's contribution to the course. (1 cr.)

EDF 215. OBSERVATIONS IN THE INNER-CITY. Centers upon a three-day field trip in which teacher trainees and others observe classroom teaching situations in Pittsburgh city schools. Two days are spent in schools. One day is spent visiting service and social agencies in the city. (1 cr.)

PUBLIC SCHOOL NURSING

PSN 301. PUBLIC HEALTH NURSING I. The course comprises a study of the fundamental principles of public health nursing. Topics are related to changes in concepts of public housing, sanitation and other contemporary public health problems. (3 crs.)

PSN 302. PUBLIC HEALTH NURSING II. The course applies the principles of public health nursing and defines the functions of the nurse in various services of public health nursing such as child hygiene, communicable disease, industrial nursing, tuberculosis, venereal disease, cancer and polio. (3 crs.)

PSN 305. NUTRITION AND COMMUNITY HEALTH. This is a study of the role of nutrition in attaining and maintaining good health and planning food budgets for various income groups. Defines the role of the nurse as a nutritional resource person. (3 crs.)

PSN 306. PUBLIC SCHOOL NURSING. Consists of a study of the development, planning and procedures for carrying out a school health program in relation to public school nursing. (4 crs.)

PSN 405. PREVENTION AND CONTROL OF COMMUNICABLE DISEASE. The course covers communicable disease problems of our society. Emphasis is placed on prevention and control as they relate to public school nursing. (3 crs.)

REGISTERED NURSE ANESTHETIST

RNA 401. PSYCHOLOGICAL FOUNDATIONS OF NURSING. Psychological Foundations of Nursing is a functional course which will relate to the problems of promoting better social, emotional and mental health care. The course includes aspects of psychological foundations of life, human (pathos) emotions, psychology of human personality, psychology of good mental health as well as a system of values. (3 crs.)

RNA 411. ADMINISTRATION AND FIELD EXPERIENCE FOR NURSE ANESTHETIST. The purpose of this course is to provide students in training or on the job with an understanding of the principles and practices of administration as they apply to work of the nurse anesthetist. This course will focus on such factors as policies concerning planning, human relations, and personnel as well as the administration of business affairs, legal liability and organizational problems. In addition to the regular classroom work a 15 hour field experience will afford students opportunities for practical experiences in administrative functions through observation and participation in the on going programs of nearby hospitals. (4 crs.)

ELEMENTARY EDUCATION DEPARTMENT

EDE 100. READING AND STUDY SKILLS. The purpose of this course is to develop reading and study skills at the college level. Special objectives are the development and reinforcement of abilities to select judiciously, to read critically, to interpret cogently, to appreciate fully, and to adapt flexibility of reading rate and method to various kinds of materials and to different purposes in reading. Prerequisite: None (All students with college board Verbal scores of 240 or less must take this course.) Two class hours per week. (2 crs.)

EDE 205. ART FOR ELEMENTARY GRADES. A survey of the philosophy, psychology and trends in Art Education as they relate to the elementary grades. Three class hours per week. (3 crs.)

EDE 206. TEACHING OF ART IN ELEMENTARY GRADES. The course consists of the development of art activities suitable for the elementary grades. Emphasis is placed upon the integration of art education with other school subjects. Three class hours per week. (3 crs.)

EDE 207. TEACHING MUSIC IN THE ELEMENTARY GRADES. This course is designed to demonstrate proper techniques of teaching music to children. Includes the study of much source material and its proper application in the classroom. Covers procedures in all grades, kindergarten through sixth, in such activities as the use of rhythm instruments, records, part singing, singing games, dances and creative work. College students develop proven techniques and procedures through actual teaching experiences in a typical classroom situation. Prerequisite: None (Students without a music background are encouraged to take MUS 115, Fundamentals of Music first.) Three class hours per week. (3 crs.)

EDE 208. TEACHING HEALTH AND PHYSICAL EDUCATION FOR ELEMENTARY GRADES. Elementary school teachers are constantly called upon to supervise and plan programs for recreation or curriculum purposes. This course is designed to give the necessary background and experience in health and physical education practices on the elementary school level. Two class hours per week. (2 crs.)

EDE 209. LABORATORY EXPERIENCE IN ELEMENTARY EDUCATION. The purpose of this course is to give the student opportunities to develop teaching files, learning stations, or classroom experiences at the Day Care Center at California State College, Campus School, or a cooperating public school in the area. The student will be expected to devote two clock hours per week for this course. (1 cr.)

EDE 301. TEACHING OF READING. The theory and practice of the teaching of reading in the elementary school is discussed. Students are acquainted with a variety of current reading materials and with approved techniques in their use. Students are given the opportunity to participate through observations, demonstrations, and actual lesson planning in teaching situations. Three class hours per week. (3 crs.)

EDE 302. DIAGNOSTIC AND REMEDIAL READING. This course is designed to acquaint students with the methods of prevention, techniques in diagnosing reading difficulties and of determining appropriate remedial treatment. Opportunities to develop informal diagnostic tools and to assist in developing instructional plans for disabled readers are provided through the college reading clinic. Prerequisite: EDE 301. Three class hours per week. (3 crs.)

EDE 303. PRACTICUM IN READING INSTRUCTION. The purpose of this course is to provide opportunities for students to identify and remediate reading difficulties of children. Formal and informal diagnostic testing procedures are used Prerequisite: EDE 301 and EDE 302. Three class hours per week. (3 crs.)

EDE 304. READING AND LANGUAGE ARTS SEMINAR. Techniques in research writing will be emphasized. The student will do research in a current topic in reading and language arts and present a written paper using the Turabian style manual. The student will deliver an oral presentation of his research for the faculty in reading and language arts. Prerequisite: EDE 301. Three class hours per week. (3 crs.)

EDE 305. MATH CONTENT AND METHOD IN THE ELEMENTARY SCHOOL. The various processes and operations of mathematics in the elementary school are carefully analyzed in order to determine which should be taught at each grade or developmental level and how they may be taught most effectively. Opportunities for observation and participation in actual planning-teaching situations are provided. Stress is placed on understanding the concepts of modern mathematics such as sets, inequalities, number line, numeral systems, modular arithmetic, filed postulates, and geometry. The results of research in elementary school mathematics are also considered. Prerequisite: MATH 100. Three class hours each week. (3 crs.)

EDE 306. TEACHING SOCIAL STUDIES IN THE ELEMENTARY SCHOOL. The various social studies curriculum approaches will be examined both as to content and rationale. Teaching strategies will be evaluated. Special emphasis will be given to the status of the social studies and to recent trends and developments. Students will be given an opportunity to observe social studies classes and to develop lesson plans, teaching units and projects. Three class hours per week. (3 crs.)

EDE 307. SCIENCE IN THE ELEMENTARY GRADES. This course, required of all students in the elementary curriculum, is part of the Professional Semester. It is designed to provide students in the elementary curriculum with an understanding of current programs in elementary science, especially those receiving national attention. Consideration will also be given to other potential science programs in a K—6 sequence. (3 crs.)

EDE 308. TEACHING OF LANGUAGE ARTS. This course is designed to present the fundamental aspects of the Language Arts in elementary education. Emphasis will be given to the many facets of the language arts, i.e., basic principles, techniques, and materials of instruction; recent trends and research; and practice in planning Language Arts experiences. Two or three class hours per week. (3 crs.)

EDE 309. FIELD EXPERIENCES IN ELEMENTARY EDUCATION. The purpose of this course is to give the student opportunities to develop teaching files, learning stations, or classroom experiences at the Day Care Center at California State College, at Campus School, or at a cooperating public school in the area. The student will be expected to devote three clock hours per week to this course. (2 crs.)

EDE 311. CHILDREN'S LITERATURE I. The purpose is to acquaint students with the various types of children's literature suitable for the elementary school. Consideration is given to the appreciation of worthwhile literature which develops an understanding of peoples of all cultures from the past to the present. Opportunities are provided for the utilization and evaluation of instructional techniques appropriate to children's literature. (3 crs.)

EDE 312. CHILDREN'S LITERATURE II. An extension of Children's Literature I. Considers the selection and use of literature in the curriculum. Emphasizes children's needs and interests and the heightening of appreciation for fine literature. Prerequisite: EDE 311. (3 crs.)

EDE 313. SEMINAR IN CHILDREN'S LITERATURE. This course is a discussion-type seminar dealing with special areas of literature not covered in other departmental offerings. The main emphasis is on critical analysis and study of a special area chosen by the student. Prerequisites: EDE 311 and EDE 312. (3 crs.)

EDE 325. NEW METHODS IN SCIENCE FOR ELEMENTARY TEACHERS. This course is designed to acquaint elementary teachers with innovations in the science curriculum. Particular attention is given to the results of studies devoted to the new programs in elementary science. Assistance is provided to teachers so that they may modify current programs in elementary science, in keeping with the philosophy and the psychological bases prevailing today. (3 crs.)

EDE 326. FIELD SCIENCE FOR ELEMENTARY TEACHERS. This course is designed for students in the elementary curriculum who have an area of interest in science, and for elementary teachers. The emphasis in this course is upon field work, including the observation and study of habitats and other natural conditions, the observation and study of native specimens, and the collection of native specimens and materials for future classroom use. (3 crs.)

EDE 327. MAKING AND USING SCIENCE MATERIALS. This course provides an opportunity for students in the elementary curriculum, and for elementary teachers, to engage in creative experiences in science. Provides for students to design and construct a variety of original devices to use in teaching science in the elementary grades (3 crs.)

EDE 335. READING IN AN URBAN SOCIETY. The primary goal of this course is to influence the teaching of reading to children caught in the poverty pockets of the urban center. The areas to be explored are: Defining the Socially Disadvantaged People, Environmental Opportunity and Learning, and Reading Instruction for Disadvantaged Children. Prerequisite: Teaching of Reading. (2 crs.)

EDE 336. CHORAL READING FOR THE ELEMENTARY SCHOOL. This course will include general techniques and detailed explanations of the different phases of choral speaking for the elementary grades, practical development of individual programs, directed research, and supervised laboratory experiences. Two class hours each week. (2 crs.)

EDE 337. POETRY FOR THE ELEMENTARY SCHOOL CHILD. This course is intended to familiarize prospective teachers with desirable methods which may be used in the study of poetry. Emphasis is placed on the concept of poetry as experience. The course is designed to give the student an opportunity to engage in readings and writings of poetry and to become involved in experiences and discussions. Two class hours per week. (2 crs.)

EDE 409. OBSERVATION AND CONFERENCE. The purpose of this course is to give the student opportunities to develop teaching files, learning stations, and classroom experiences at the Day Care Center at California State College, at Campus School, or at a cooperating public school in the area. The student will be expected to devote four clock hours per week to this course. (3 crs.)

EDE 459. STUDENT TEACHING. Observation and participation in all teaching activities related to the performance of a teacher's work in the elementary grades. Prerequisites: Completion of the Professional Semester, admission to Teacher Education, and approval for Student Teaching. (12 crs.)

EDE 490. PROFESSIONAL PRACTICUM AND SCHOOL LAW. This course includes methods and practices of teaching, general techniques of teaching in the elementary curriculum, Pennsylvania school laws relevant to the work of the classroom teacher, and problems encountered by the students in their student teaching. Prerequisite: EDE 459 to be taken concurrently with this course. Two class hours per week. (2 crs.)

EDE 494. FIELD EXPERIENCE IN CHILDREN'S LITERATURE. This course includes preparations for a field trip. A map, a guide to the history of the area, the customs of the people and the literature we are about to study are to be examined. The second week will be spent in the area in which the literature was written. During the third week, responsibilities and assignments, such as a term paper or research project, may be set up at the discretion of the instructor. This course will be offered only during the summer semester. Two class hours per week. (2 crs.)

EDE 495. ECONOMICS EDUCATION WORKSHOP. The economic education curriculum for the elementary school is analyzed to determine the economic concepts which are suitable for inclusion in the elementary curriculum and how they can most effectively be taught.

Economic factors which influence domestic and foreign affairs are examined. Through lectures, discussion, research, and the study of economic education curriculum plans developed by various schools, the teacher is provided with the understanding and means by which he may include economic education as an integral part of the curriculum. Prerequisite: Admission at the discretion of the instructor. (3 crs.)

EDE 496. SOCIAL STUDIES EDUCATION WORKSHOP. This workshop is designed around the students' interests and backgrounds in Social Studies. Generally this encompasses the total social studies program for kindergarten through grade twelve. Emphasizes modern teaching techniques and practices. Prerequisite: Admission at the discretion of the instructor. (3 crs.)

EDE 497. READING WORKSHOP. The reading workshop is designed to upgrade the knowledge and skill of classroom teachers in all aspects of reading. Special emphasis will be given to beginning reading methods, transfer of reading skills to content areas. the development of total school reading programs, study skills, and reading as a lifetime habit. The workshop will strive to meet the needs of the group involved. Guest lecturers will speak on the various topics of reading instruction and materials for the newer programs will be provided by the major book companies. Prerequisite: Admission at the discretion of the instructor. (3 crs.)

EARLY CHILDHOOD EDUCATION

ECE 206. MOVEMENT EDUCATION IN EARLY CHILDHOOD. The prospective teacher of children age three through eight years is provided with a working knowledge of the most modern approach to teaching gross motor activity in an instructional physical education program. An attempt is made to emphasize the importance of helping the child develop a positive concept for self and an awareness of spatial relationships. (2 crs.)

ECE 215. ART FOR EARLY CHILDHOOD. The student studies the development of the child in art from three to eight years and explores creative problems suitable for the young child. The student works with materials, techniques, and processes not experienced in the course, Art for Elementary Grades. (3 crs.)

ECE 217. MUSIC FOR EARLY CHILDHOOD. Students are provided with a creative approach to the music interests and needs of the very young child designed to acquaint the prospective teacher with current music education practices in pre-school and the primary grades. Experiences are provided in singing, listening, playing instruments, rhythmic movements and creative music activities. (3 crs.)

ECE 218. HEALTH AND PHYSICAL EDUCATION IN EARLY CHILDHOOD. The health, physiology, and motor growth and development of the child from age three through eight are studied. Program planning for the health and physical education from nursery school through grades three is explored. (2 crs.)

ECE 301. READING EXPERIENCES IN EARLY CHILDHOOD. This course prepares students for beginning instruction in reading with emphasis on meeting individual needs and planning a reading program that is preventive in nature rather than corrective. Instruction will deal with concepts of readiness and introduction of reading skills in the primary grades. (3 crs.)

ECE 315. MATHEMATICAL CONTENT IN EARLY CHILDHOOD. The student is introduced to the teaching of quantitative measurement to young students emphasizing known concrete operations. Teaching for the development of the concepts of size, shape and numbers are an integral part of the course. (3 crs.)

ECE 316. THE CHILD IN HIS SOCIAL AND PHYSICAL ENVIRONMENT. This course deals with the sociological and physiological relationships of the world in which the child

lives as a member of society. The historical background and geographical interrelationships are stressed so the child may discover his relationship to the world of which he is an important part. (3 crs.)

ECE 317. SCIENCE ACTIVITIES FOR EARLY CHILDHOOD. Primary teachers are given the concepts of science as they can be presented to children from Nursery through third grade. Through discussion, demonstration, and discovery, the everyday phenomena observed and encountered by the child are formulated as to hypothesis and simple tests the young child can carry out. Specific attention is given to curriculum planning in science education. (3 crs.)

ECE 318. COMMUNICATIVE ARTS FOR EARLY CHILDHOOD. The beginning of early language patterns in childhood are studied as they can be fostered and furthered in a creative manner. Tools and techniques are developed for teaching the language arts to individuals and to groups of children from Kindergarten through grade three. (3 crs.)

ECE 351. CHILDREN'S LITERATURE I. The purpose is to acquaint students with the various types of children's literature suitable for the early years of school. Consideration is given to the appreciation of worthwhile literature which develops an understanding of peoples of all cultures from past to the present. Opportunities are provided for the utilization and evaluation of instructional techniques appropriate to children's literature. (3 crs.)

ECE 405. EARLY CHILDHOOD EDUCATION SEMINAR. Emphasized in this course is the relationship between the academic and theoretical background of the student and its practical application. His background in child psychology and creative learning activities is related to his ability to plan creatively for classroom experiences. Child development theories, child-parent relationships, parent relationships with the teacher, and curriculum planning will be stressed. (3 crs.)

ECE 202. FIELD EXPERIENCE IN EARLY CHILDHOOD. The student continues his program of working with young children prior to student teaching by combining lectures, with aiding teachers, and tutoring experiences with children in grades one, two and three. Lesson planning and unit development are stressed. (3 crs.)

ECE 201. LABORATORY EXPERIENCES IN NURSERY-KINDERGARTEN. This course is intended to provide the student with an introduction to working with the child of three, four and five through experiences in Day Care Centers or Nursery School and Kindergarten. The student will observe and plan work with individuals and small groups of children. Student interest and ability to relate to the young child will be evaluated by both students and teachers. Lesson preparation and activity development are stressed. (3 crs.)

ECE 495. EARLY CHILDHOOD WORKSHOP. This course consists of a study of basic needs of children and how these needs are met in the day-care center, Headstart program, nursery school, and kindergarten. Curricular activities, effects of current social and economic trends, and latest research are emphasized. The course is enriched through the contributions by local and state experts in Early Childhood Education, visitations to various child development centers, viewing of outstanding films and participation in individual and group projects. Prerequisite: Admission at the discretion of the instructor. (3 crs.)

HEALTH, PHYSICAL EDUCATION, AND SAFETY DEPARTMENT

HPE 100. HEALTH. The course provides the student with a critical analysis of many health problems facing man today. Topics studied include: communicable diseases, chronic diseases, alcohol and drugs, mental and emotional health, sex and reproduction, nutrition, fatigue, exercise, and consumer education with a focus on health products and services. (2 crs.)

HPE 110. PRINCIPLES OF PHYSICAL EDUCATION. The primary purpose of this course is to enable the student to develop a workable philosophy of physical education which will guide his decisions in planning and teaching motor activities. To this end emphasis is placed on the historical development of physical education and on the sociological and psychological foundations of the profession. (2 crs.)

HPE 120. MOVEMENT ANALYSIS. This course includes the study of significant aspects of anatomy, kinesiology, physiology and educational psychology as they relate to human movement. Stresses the factors which contribute to efficiency of human movement and body mechanics in athletic activities and in daily living. This is primarily a theory course with some laboratory work included for practical application of related principles. (3 crs.)

HPE 205. ADAPTED PHYSICAL EDUCATION. The course is designed to meet the needs of the student who suffers from some temporary or permanent physical deficiency that interferes with his or her ability to participate in the general physical education program (1 cr.)

HPE 211. SWIMMING AND BOWLING. The course will provide instruction and practice in the fundamentals of swimming and bowling. Emphasis will be placed on the practical application of the two activities. (1 cr.)

HPE 212. ADVANCED SWIMMING. The course will emphasize the learning skills, techniques and attitudes that are necessary in many areas of swimming. (1 cr.)

HPE 216. ARCHERY AND BEGINNING GOLF. The course provides instruction and practice in the fundamentals of golf and archery. The curriculum includes analysis, practice and application of a variety of golf strokes, of game rules, and of etiquette. Archery actitivies include target archery, different types of competition and bare bow hunting. (1 cr.)

HPE 221. GAMES AND GYMNASTICS – GRADES K–3. This course is divided into three parts, theory, application of theory through the teaching laboratory school children, and the development of personal skills and knowledge in elementary tumbling events. The factors which are stressed are: application of growth and development characteristics to movement, application of laws of learning to physical education activities. (2 crs.)

HPE 222. GAMES AND GYMNASTICS – GRADES 4–6. Includes: Exercises and warm-up activities, relays, lead-ups to team games, individual and dual activities as well as self-testing events. Evaluation procedures in physical education are introduced. Emphasis is placed upon methods and techniques of teaching skill experiences. (3 crs.)

HPE 225. GYMNASTICS. The course provides the student with a variety of activities aimed at developing student competencies in the use of apparatus such as the parallel bars, side horse, long horse, balance beam, trampoline, horizontal bar, etc. A background in gymnastics is not required or necessary. (1 cr.)

HPE 226. RYTHMICS AND DANCE K–6. This course concentrates on personal development of dance skills. Responses to musical and percussion instruments in dance patterns and in creative movement are stressed. Students are introduced to the various methods of teaching dance in the elementary grades. (3 crs.)

HPE 231. BEGINNING BADMINTON AND TENNIS. The course consists of instruction and practice in the fundamental skills. Knowledge of rules, strategy, and courtesies of both badminton and tennis is included. (1 cr.)

HPE 240. APPARATUS AND GYMNASTICS. The course places emphasis on the development of fundamental skills in stunts, tumbling and apparatus. The course also stresses the importance of proper spotting techniques for each skill taught. (1 cr.)

HPE 241. BEGINNING SWIMMING. The course places emphasis on the development of skills that will enable a student to move safely in and around the water with ease and enjoyment. (1 cr.)

HPE 242. INTERMEDIATE SWIMMING. Advanced beginner and sub-intermediate swimming instruction is provided. Emphasis is placed on perfecting the nine basic strokes and on becoming more comfortable in, on, or near the water. Students should feel safe in deep water in order to enter this course. (1 cr.)

HPE 245. SYNCHRONIZED SWIMMING. Numerous swimming skills are included in this course. Emphasis is on variation of strokes and performance of stunts to create swimming composition. The diving includes fundamental dives from the low board. (1 cr.)

HPE 246. INTERMEDIATE ARCHERY AND GOLF. An opportunity is provided for the student to advance beyond the beginner level and acquire a greater degree of skill through advanced analysis of techniques and strategy. (1 cr.)

HPE 248. FOLK DANCE. This is a progressive course in international folk dance with emphasis on circle and lines. Dances originating in the Balkan Countries are taught. (1 cr.)

HPE 250. MODERN DANCE. The course consists of a study of contemporary dance forms, techniques and composition. Expressive movement problems in force, time and space are also analyzed. (1 cr.)

HPE 255. TRACK AND FIELD. The course includes basic instruction and practice in both the running and field events (sprints, long distance running, hurdles, relays, shot put, discuss, javelin, broad jump and high jump). (1 cr.)

HPE 256. CONDITIONING AND MOVEMENT EDUCATION. The course is designed to help the student understand the various components of fitness and includes the presentation of a progressive course of conditioning activities. The course encourages an appreciation of the ability and capacity to control and direct the movements of the body with skill and intelligence. (1 cr.)

HPE 257. BOWLING AND POCKET BILLIARDS. This course includes the fundamental skills of bowling and game practice. The basic skills of pocket billiards and various cue games are also included. (1 cr.)

HPE 265. BADMINTON AND GOLF. The course will provide basic instruction of the rules, strategy and courtesies of both golf and badminton. (1 cr.)

HPE 266. TENNIS AND VOLLEYBALL. The basic fundamentals and game techniques of tennis and volleyball are taught. Proper drills and conditioning exercises are also a part of the course. (1 cr.)

HPE 267. ARCHERY, BILLIARDS, TABLE TENNIS. The course will include instruction on the fundamental skills of the three activities. Emphasis will be placed on the practical application of the activities. (1 cr.)

HPE 270. SLIMNASTICS. (only persons 15% overweight or more) This course is designed exclusively for the woman who is overweight. Through this course the overweight person will attempt to understand herself and her problem. Course content will include dietary information and vigorous physical activities aimed at weight reduction. Physician's approval is required. (1 cr.)

HPE 275. VOLLEYBALL AND BASKETBALL. The course places emphasis on instruction and practice in fundamental techniques and team play; analysis of systems of team play; study of methods, rules, and game strategy. Practical experience in officiating is also provided. (1 cr.)

HPE 276. RECREATIONAL GAMES. The course includes the fundamental skills and rules of deck tennis, table tennis, aerial tennis, paddle tennis, shuffleboard, horseshoes, croquet, etc. (1 cr.)

HPE 277. FENCING. The course provides instruction and practice in basic fencing techniques, including elementary bouts, rules and officiating. (1 cr.)

HPE 310. FIRST AID. The course provides a variety of classroom and laboratory activities that will enable a student to identify and cope with everyday first aid emergencies. The course is sanctioned by the American Red Cross and upon satisfactory course completion, the student will receive Standard and Advanced Red Cross Certification. (2 crs.)

HPE 312. WATER SAFETY INSTRUCTOR. Conducted under the auspices of the American Red Cross, the course is designed to equip the individual with the basic knowledge and skills necessary to save his own life or the lives of others. The course also provides a student with the methods and techniques of water safety instruction. Prerequisite: Current Senior Life Saving Certificate. (3 crs.)

HPE 313. ADVANCED LIFESAVING. Conducted under the auspices of the American Red Cross, the course gives consideration to swimming and life saving techniques necessary to meet the requirements of water safety. Prerequisite: American Red Cross Certification. (2 crs.)

HPE 315. CARDIO-PULMONARY RESUSITATION. The course is designed to train students in the many aspects of CPR and consists of both laboratory and classroom experiences. The course is sanctioned by the American Red Cross. (1 cr.)

HPE 317. CAMPING AND OUTDOOR EDUCATION. The course provides an opportunity for the student to develop an awareness of the variety of camping techniques and experiences available on a recreational basis. (1 cr.)

HPE 332. INTERMEDIATE BADMINTON AND TENNIS. An opportunity is provided for the student to advance beyond the beginner level and to acquire a greater degree of skill through advanced analysis of techniques and strategy. (1 cr.)

HPE 335. ADAPTED PHYSICAL EDUCATION AND RELATED PROGRAMS. The purpose of this course is twofold: First it is concerned with the development of understanding of a wide variety of handicaps children in a regular classroom may possess. Emphasis is placed on modifying regular physical education activities to meet the needs of the atypical child. Second, instruction is given in planning and teaching activities which can be taught within the confines of a regular classroom. (2 crs.)

HPE 336. PROGRAMMING PHYSICAL EDUCATION IN THE ELEMENTARY SCHOOL. Included are the elements of total organization of physical education in the elementary school relating to content, evaluation, curriculum development, legal implications and general duties of the physical education teacher. Also stressed is the relationship of physical education to allied areas and their implications for the physical education program. Major emphasis is placed on actual construction of a curriculum, or course of study. This is a major class project. Pre-student teaching experiences are also provided. Study of facilities, fabrication and maintenance of supplies and equipment, and the organization and administration of extra-class physical education activities are included. (3 crs.)

HPE 337. PLAYGROUND AND GYMNASIUM ACTIVITIES. The course provides an introduction to the principles, techniques and research in the physical education training for the exceptional child. Major emphases are: (1) movement education, (2) perceptual motor activities, (3) physical fitness activities, (4) gymnastics, and (5) contemporary dance. A short-term practicum is required. (2 crs.)

HPE 345. SKIN AND SCUBA. Through theory and practical work the student is introduced to skin diving and scuba diving. With an emphasis on safety, the student is exposed to various types of equipment and activities. Prerequisite: Advanced Life Saving. (1 cr.)

HPE 346. OFFICIATING AND COACHING AQUATIC ACTIVITIES. The course is designed for the advanced swimmer who desires techniques of coaching and officiating at various swimming programs. Emphasis is placed upon organizing, conducting and officiating at swimming meets for intramural, interscholastic and camp programs. (1 cr.)

HPE 347. BASKETBALL OFFICIATING. The course is designed to enable students to become qualified PIAA basketball officials. Course content includes: analysis of rules, regulations and the mechanics of officiating. (1 cr.)

ATHLETIC COACHING ENDORSEMENT PROGRAM

CPE 205. FOUNDATIONS OF ATHLETICS. The application of data and principles from psychological and sociological fields is covered as they specifically apply to athletics, coaches and sports activities. Organization and planning procedures of sports are also covered as well as other areas to aid the prospective coach to be more cognizant of player, school and community relationships. (2 crs.)

CPE 225. FOUNDATIONS OF COACHING PRE-ADOLESCENT ATHLETICS. Basically the same as CPE 205 with the areas covered relating specifically to the unique differences as they exist in pre-adolescent athletics. (2 crs.)

CPE 305. KINESIOLOGICAL FOUNDATIONS OF COACHING. This course emphasizes the biomechanics of motor performance; a study of the myological and mechanical aspects in order to prepare the prospective coach with the ability to identify and analyze

movements in order to better teach, correct, or improve these athletic skill movements. (3 crs.)

CPE 315. PHYSIOLOGICAL FOUNDATIONS OF COACHING. The course is designed to teach the prospective coach the significance of human body functions in regard to motor activity. Covered are the scientific theories and principles underlying strength, muscular endurance, cardio-vascular endurance, flexibility, training and conditioning in sports. (3 crs.)

CPE 325. MEDICAL ASPECTS OF COACHING. A course dealing with the basic concepts and techniques in the prevention, diagnosis, treatment and rehabilitation of athletic injuries. (2 crs.)

CPE 339. PRACTICAL COACHING EXPERIENCE OR DIRECTED STUDY. *Each candidate is encouraged to experience a practical coaching duty within the framework of this 18 credit program. The administrative details for the arrangement of the coaching experience will be the student's responsibility and subject to approval by appropriate authority of the H, PE & S Department. This coaching experience might occur in a school setting, summer athletic league, coaching or assisting for civic groups' teams, etc., depending upon the student's interest. If a student is unable to make arrangements for a suitable coaching experience, a directed study project relative to the student's interests and future coaching aspirations will be substituted. (2 crs.)

*Those individuals who are presently coaching will receive credit for this requirement, subject to approval to the Health, Physical Education & Safety Department.

CPE 306, et.al. THEORY & TECHNIQUE OF (SPECIFIC SPORTS). Each of the courses listed below is specific to the particular sport. The courses are designed to acquaint the prospective coach with the theories, knowledge, coaching aids and general mechanics of coaching competitive teams or competitors. Laboratory experiences emphasizing coaching techniques and use of coaching aids are discussed. (2 crs.)

Theory & Technique Courses

CPE 306 THEORY & TECHNIQUE OF BASEBALL COACHING
CPE 307 THEORY & TECHNIQUE OF TRACK & FIELD AND CROSS COUNTRY
CPE 316 THEORY & TECHNIQUE OF BASKETBALL COACHING
CPE 317 THEORY & TECHNIQUE OF SOCCER COACHING
CPE 326 THEORY & TECHNIQUE OF FOOTBALL COACHING
CPE 336 THEORY & TECHNIQUE OF GOLF COACHING
CPE 346 THEORY & TECHNIQUE OF GYMNASTIC COACHING
CPE 356 THEORY & TECHNIQUE OF SWIMMING & DIVING COACHING
CPE 366 THEORY & TECHNIQUE OF TENNIS COACHING
CPE 376 THEORY & TECHNIQUE OF VOLLEYBALL COACHING
CPE 386 THEORY & TECHNIQUE OF WRESTLING COACHING

DRIVER EDUCATION ENDORSEMENT PROGRAM

HSD *300. INTRODUCTION TO SAFETY EDUCATION. This course is a general overview of the history and development of the safety movement. Psychological variables such as attitudes, habits, emotions and values are considered in terms of their importance in the total accident picture. Home, farm, traffic, fire, industrial and many other areas of safety are discussed. (3 crs.)

HSD *305. DRIVER EDUCATION AND TRAFFIC SAFETY. The course is designed to prepare a Driver Education teacher to teach a complete thirty-and-six Driver Education class. Emphasis is placed upon essential facts, principles, skills and psychological variables necessary for good driving and the teaching of the same to beginning drivers. Enrolled students are required to teach a beginner the behind-the-wheel driving sequence. Prerequisite — a driver's license. (3 crs.)

HSD 306. MATERIALS AND METHODS IN SAFETY IN THE SECONDARY AND ELEMENTARY SCHOOLS. Emphasis is placed upon the various teaching methods and materials that can be used to teach safety in the elementary or secondary schools. The advantages and disadvantages of a correlated, intergraded or separate subject approach are analyzed (3 crs.)

HSD 307. MOTORCYCLE SAFETY. Motorcycle Safety provides the student with a comprehensive study of all aspects of motorcycle safety. Various classroom and range experiences are provided to enable each student to become a proficient cyclist. The course also prepares the student to teach others how to ride. Prerequisite: HSD 305. (3 crs.)

HSD 405. ORGANIZATION AND ADMINISTRATION OF SAFETY EDUCATION. Emphasis is placed on organizing and administering Safety Education Programs ranging from the elementary school through college. School safety programs, environmental safety, and safety services are analyzed in detail. Prerequisite — HSD 300. (3 crs.)

HSD 406. VISUAL AND OTHER AIDS IN SAFETY. The course places emphasis on visual, psychomotor and other sensory aids that can be employed for testing and teaching in various areas of safety. (3 crs.)

*Required Courses for Driver Education Endorsement Program.

INDUSTRIAL ARTS DEPARTMENT

IAR 201. INTRODUCTION TO INDUSTRIAL ARTS EDUCATION. Part I: Classroom instruction providing an introduction to the role of industrial arts as a part of general education; the objectives of industrial arts; the role of the industrial arts teacher; the positions and purposes of industrial arts in the elementary, middle, and secondary schools; the use of professional literature; and the recognition of historical influences upon current trends and directions in industrial arts. Emphasis is also placed upon laboratory safety, organization, management, and legal considerations in teaching. Two class hours per week.

Part II: A field-based effort with undergraduate participation in industrial arts programs at a teaching center working with a supervising teacher; industrial field tours; college seminars; and educational trips to observe the urban setting in industrial arts. Each Friday for the entire school day. (3 crs.)

IAR 301. ORGANIZING AND DEVELOPING COURSE MATERIALS FOR INDUSTRIAL ARTS EDUCATION. Analysis of industrial arts and educational objectives in relation to the selection of course content and teaching techniques at the various school levels in the areas of visual communications, power, and industrial materials. Students are required to develop sample instruction sheets, methods of student evaluation and

appraisal, and a course of study for industrial arts education. In addition, an examination of common instructional management techniques for industrial arts teaching will occur for the undergraduate. Three class hours per week. Pre-requisites: Introduction to Industrial Arts Education. (3 crs.)

IAR 480. SEMINAR IN INDUSTRIAL ARTS AND TECHNOLOGY. A survey of the evolutionary development of man's technology relative to tool development, economics, and political environment. The function of this survey is the development of a perspective of the inter-relationships between man and his technology — past, present, and future. This perspective is then correlated with the teaching of industrial technology. (3 crs.)

IAR 481. INDUSTRIAL ARTS IN THE ELEMENTARY SCHOOL (for industrial arts majors). An introduction to and discussion of the purposes and relationships of elementary education and industrial arts, the learning capabilities of young children, and the various curriculum approaches for placing industrial arts within the elementary program. Undergraduates who have obtained a basic collegiate background in professional and technical education will have the opportunity to select, design, and employ various teaching units in both the industrial arts laboratory and the self-contained elementary classroom. ADMISSION BY PERMISSION OF INSTRUCTOR ONLY. Two lecture and four laboratory hours per week. (3 crs.)

IAR 439. STUDENT TEACHING (INDUSTRIAL ARTS). Student teaching is the culminating experience leading to certification for teaching. In this experience, each student teacher is assigned to work with two master teachers in the field. While student teaching, each student teacher will be required to demonstrate competency in the following areas: lesson planning, writing and delivery; developing visual media, positive teacher-student relationships, and objective-subjective evaluation devices; academic record keeping; safety supervision and physical plant management. (12 crs.)

IAR 490. PROFESSIONAL PRACTICUM. Practicum is designed to acquaint the student with the methods and practices of teaching. More specifically, it teaches the techniques and refinements of these techniques in the student's area of specialization. In the field of industrial arts, practicum encourages investigation into the technologies as they apply to education. Students are given aid in laboratory problem-solving as the need occurs during the student teaching tenure. In addition, practicum instructs the prospective teacher in Pennsylvania school law relevant to his work in the classroom. MUST BE SCHEDULED WITH STUDENT TEACHING. Two lecture hours each week. (2 crs.)

DRAWINGS (required):

IAR 110. INTRODUCTION TO TECHNICAL DRAWING. Emphasis is on making and understanding orthographic multi-view mechanical working drawings including technical sketching. A study of parallel and oblique projections is included. ANSI practices are observed. Two lecture and two laboratory hours per week. (2 crs.)

IAR 115. INDUSTRIAL ARTS DESIGN. Design is studied as a process made up of three major components: the creative, the aesthetic, and the technical. Students experience design creatively and aesthetically by actively participating in a series of design problems which stress the sensitive use of the elements and principles. Creative thinking and aesthetic sensitivity are encouraged and developed. Two lecture and two laboratory hours per week. (2 crs.)

IAR 210. SURFACE DEVELOPMENT AND DESIGN. A study of surface development utilizing simple, parallel, radial, and triangulation techniques. Emphasis is placed on

designing functioning metalworking projects. Prerequisite: IAR 110, Introduction to Technical Drawing. Two lecture and four laboratory hours per week. (2 crs.)

IAR 215. MACHINE DRAWING. Provides experiences in problem-solving with reference to technical working drawings. Special emphasis is placed on American Standards drawing practices, shop processes, conventional representation, standardization of machine parts and fasteners, preparation of tracings and the reproduction of industrial working drawings. Prerequisites: IAR 110, Introduction to Technical Drawing. Two lecture and two laboratory hours per week. (2 crs.)

DRAWINGS (elective):

IAR 330. ARCHITECTURAL DESIGN. Design experience is provided in basic residence planning. The fundamental sequences in designing and drawing a residence are stressed and the student completes all architectural drawings necessary for construction. Elements of the course include: architectural styles, area planning, structural detailing, pictorial rendering, building specifications, and cost analysis. Two lecture and two laboratory hours each week. (2 crs.)

IAR 431. ADVANCED INDUSTRIAL ARTS DESIGN. The basic purpose of the proposed course is to give the students an opportunity to go a few steps beyond our introductory course, "Industrial Arts Design." The course will be closely aligned with the industrial design field and will place more emphasis on three-dimensional designing. The more advanced design experiences provided in this course will help to better prepare our students for other advanced courses and elective courses offered in the industrial arts curriculum. It will also serve as an important prerequisite for the appreciable number of graduate students who make some phase of the field of design the major emphasis of their graduate programs. (2 crs.)

IAR 435. LABORATORY PLANNING. Experience is provided in all phases of modern industrial arts laboratory planning. The student proceeds through the entire sequence of laboratory planning from the original design to the completion of all drawings necessary for the construction of industrial arts facilities. The major units of the course include: types of industrial arts programs, principles of laboratory planning, equipment selection, architectural and engineering practices, and evaluation of industrial arts facilities. Two laboratory and two lecture hours per week. (2 crs.)

IAR 436. ADVANCED GRAPHIC ARTS DESIGN. Basic principles of print layout and design are presented. The student develops skills in this area through application of these principles to practical layout and design problems. Two lecture and two laboratory hours each week. (2 crs.)

IAR 437. ADVANCED MACHINE DRAWING. Special emphasis is placed on the basic principles involved in machine design. The possibilities and limitations of the common metals, mechanical movements, and the use of fasteners and the application of machine fits are stressed. Two lecture and two laboratory hours each week. Prerequisites: Introduction to Technical Drawing and Machine Drawing. (2 crs.)

IAR 438. AIRBRUSH TECHNIQUES. Precise pictorial line representation as it relates to technical illustration is stressed. Mechanical and freehand techniques used in pictorial line drawings are explored in detail. Students gain experience in the theory of light and shadow. Emphasis is placed on exploring more advanced graphic media in technical illustration. Extensive experience is provided in airbrush rendering techniques. Two lecture and two laboratory hours each week. (2 crs.)

LABORATORIES (Required):

IAR 120. FUNDAMENTALS OF WOODWORKING. A study of the basic woodworking techniques with emphasis on hand tool skills. An introduction to the basic woodworking machines including the lathe, safe operation of equipment, high-quality workmanship, and aesthetic desgin are stressed. Two lecture and four laboratory hours each week. (3 crs.)

IAR 121. GRAPHIC COMMUNICATIONS I. This is the first of two required courses in the visual communications area. The student is given an opportunity to develop skills by applying techniques of layout and design to letterpress techniques, screen printing (knife-cut and photographic stencils), process line photography and bindery operations. Two lecture and four laboratory hours each week. (3 crs.)

IAR 220. FUNDAMENTALS OF METALWORKING. An introductory course in metalworking giving instruction in sheet metal, bench and wrought metal, forging and heat treating, oxyacetylene welding-brazing-cutting, electric welding and metal spinning. Emphasis is placed on the selection, safe use, and care of metalworking tools and materials. Two lecture and four laboratory hours each week. (3 crs.)

IAR 225. FUNDAMENTALS OF MACHINE. Instruction in the operation of hand and machine tools, including the engine lathe, milling machine, and shaper. Basic foundry techniques are included. Two lecture and four laboratory hours each week. (3 crs.)

IAR 226. ELECTRICITY-ELECTRONICS I. The fundamental theory of electricity is studied with emphasis on the effects of resistors, capacitors, and inductors as used in direct and alternating current circuits. Practice is given in the use of Ohm's Law power formula and Kirchhoff's Law. Laboratory experiences parallel the theory presentation and provide application of circuit principles and the use of tools and equipment basic to the area. Prerequisites: College Algebra or Technical Mathematics. Two lecture and four laboratory hours each week. (3 crs.)

IAR 320. ADVANCED WOODWORKING. Principally a course in machine woodworking. Safe operation of all basic woodworking machines is demonstrated. Students make projects involving operations in all basic machines. Spray-finish method and techniques are demonstrated. Maintenance of equipment is discussed. Prerequisites: Fundamentals of Woodworking and Introduction to Technical Drawing. Two lecture and four laboratory hours each week. (3 crs.)

IAR 322. GRAPHIC COMMUNICATIONS II. This is the second of the two required courses in the visual communications area. Graphic Communications I is a prerequisite for this course. Emphasis is placed on understanding the structure, processes, and the products of the graphic communications industry. Learning experiences with tools, materials, equipment, and processes represented by this industry will be provided for students to explore and gain understanding. Instruction in spirit duplicating, mimeographing techniques, strike-on composition, photo composition, darkroom techniques, and offset lithography operations are included in this course. Two lecture and four laboratory hours each week. (3 crs.)

IAR 325. POWER TECHNOLOGY. The objectives of the course are to identify various energy sources and to give the student a working knowledge of energy converters. Reciprocating, rotary, and reaction type internal combustion engines as well as electromechanical devices and automotive electrical ignition, cranking, and charging circuits are studied. Experiments with the wind tunnel and pneumatics trainer, compressed air

system, affords the student the opportunity to apply Bernoulli's Principle as well as Boyle's Law, Charles' Law, and the Ideal Gas Law. Prerequisite: Electricity-Electronics I. Three lecture and three laboratory hours each week. (3 crs.)

IAR 345. ART METAL. (non-ferrous metals). Provides shop and design experiences with a variety of metals..Raising, shaping, and forming of brass, copper, aluminum, and pewter are done by a traditional craftsman approach. No prerequisite. Two lecture and four laboratory hours each week. (3 crs.)

IAR 346. ADVANCED MACHINE. Provides experience in the operation of the milling machine, shaper, the drill press, and the engine lathe in indexing and in the heat treatment of metals. Special emphasis is placed upon assembly and mass production. Prerequisite: Fundamentals of Machine. Two lecture and four laboratory hours each week. (3 crs.)

IAR 347. FOUNDRY. For students who wish to major in the field of metalworking. This course is concerned with techniques in metal casting. Foundry procedures and processes that permit an increase in scope of the school metalworking program are covered. Two lecture and four laboratory hours each week. (3 crs.)

IAR 326. ELECTRICITY-ELECTRONICS II. Special emphasis is placed on the study of the fundamentals of semi-conductors as applied in circuits including power supplies, amplifiers, oscillators, and complete systems such as the superheterodyne receiver. Laboratory experiments are performed on experimental circuits in correlation with the theory presentation along with practical circuit applications. Prerequisite: Electricity-Electronics I. Two lecture and four laboratory hours each week. (3 crs.)

LABORATORIES (Elective):

IAR 340. WROUGHT METALWORKING. (ferrous metals). A study of the traditional and contemporary ornamental iron design and fabricating techniques. Emphasis is placed on individual project design and construction. Students practice the techniques of hot and cold metal forming, riveting, brazing, and welding. Weldment design, strength, microstructure, and metallurgical aspects are emphasized. Instruction is given relative to surface treatment and finishing of ferrous metals. Prerequisites: Fundamentals of Metalworking. Two lecture hours and four laboratory hours each week. (3 crs.)

IAR 341. MATERIALS TESTING. A study of the theory and application of materials testing designed to increase the student's knowledge of those industrial materials generally employed in teaching industrial arts. The physical nature of metallic, polymetric, ceramic, wood, and miscellaneous materials is explored. Selected destructive and nondestructive tests for understanding the physical characteristics of these materials are demonstrated. Provisions are made for individual and team development of test specimens and their subsequent evaluation. Instruction is provided in the recording and interpretation of test data. Two lecture, four laboratory hours each week. (3 crs.)

IAR 348. CERAMICS. This introductory course assumes no prior experience with clay. The student learns several handbuilding techniques, throwing on the potter's wheel, and slip casting. The major goal of this course is to provide students with the kind of broad-based experience with clay and with the equipment of the ceramics studio that will prepare him to teach ceramics. Some of these experiences are: formulating and making a pattern, making a plaster mold, casting a plaster bat, using a spray gun, mixing clay in a pug mill, grinding a glaze in a ball mill, wedging clay, and many other experiences that will serve as a valuable background for the potential teacher of ceramics. Only casual mention is made of some of the industrial methods of forming clay products. Two lecture and four laboratory hours each week. (3 crs.)

IAR 350. CRAFTS. This course serves as a basic introduction to the use of several craft materials. The student will learn how to construct a barreled band ring from sterling silver, how to set a stone in a bezel setting on silver, how to enamel on copper, and how to tool copper into a low-relief design. The student will also make a mosaic using stained glass, venetian glass tile, or handmade ceramic tesserae. He is also given a token introduction to clay and leather. The student will acquire many skills that should prove useful throughout his lifetime. A few examples follow: use of the jeweler's saw, silver soldering, drawing wire, soft soldering, finishing and polishing of non-ferrous metals, cutting mosaic tiles, grouting a mosaic, and many other useful activities. Considerable emphasis is placed on design. The student is encouraged to create his own original design for each of the craft projects. He will finish the course possessing many beautiful and valuable craft items that were designed and crafted by himself. Two lecture and four laboratory hours each week. (3 crs.)

IAR 351. SMALL GASOLINE ENGINES. The course is designed to give the student an in-depth study of small gasoline engines in theory and overhaul. Laboratory activities covered are: fuel systems, carburetion, governors, ignition systems, valve grinding, cylinder resurfacing, tune-up, and reconditioning. Also included is an understanding and use of measuring and testing equipment to support the above laboratory activities. Three hours lecture and three hours laboratory each week. (3 crs.)

IAR 355. JEWELRY MAKING. This is an introductory course in jewelry making. Although previous experiences in crafts and metalworking would be useful in a general way, this course is designed for the absolute beginner. The student will design and create unique jewelry forms from metals such as gold, silver, bronze, brass, and copper. Some jewelry pieces will combine a metal with woods such as ebony, rosewood, vermillion, amaranth, or zebra wood. Other materials such as bone, ivory, seashells, glass, clay, wire, and plastics can be used. The required work will include the construction of a barrelled band ring made of sterling silver, enameling on copper, bezel setting a semi-precious stone on silver or phospher bronze, a piece combining wood and metal, and other projects of the student's choice. A basic introduction will be presented to lapidary work (gem making) and to the lost wax process (centrifugal casting). Two lecture and four laboratory hours each week. (3 crs.)

IAR 356. LEATHERCRAFT. Fundamental techniques such as carving, skiving, tooling, finishing, sewing, and lacing of leather are stressed. A problematic approach to designing in leather is stressed, thus assuring originality of design and self-expression. Through creative and aesthetic experiences, leathercraft becomes an artistic expression. Two lecture and four laboratory hours each week. (3 crs.)

IAR 357. INDUSTRIAL PLASTICS. A general introduction to the history and development of industrial plastics with laboratory emphasis on the use of molds, forms, relevant materials, and processes. Two lecture and four laboratory hours each week. (3 crs.)

IAR 456. FUNDAMENTALS OF DIGITAL ELECTRONICS. An introductory course in digital electronics dealing with the theory and practice of modern computer-type circuitry. Logic gates, memory elements, data communication, integrated circuits, shift registers, counters and arithmetic elements all comprise the major units in the course. The laboratory portion of the course provides opportunity for verification of the theoretical concepts and actual experience with digital integrated circuits and related hardware. Three lecture and three laboratory hours per week. (3 crs.)

IAR 458. WOOD PATTERNMAKING. Patternmaking is another facet of woodworking that is a necessary part of metal casting. Principles of pattern design as they relate to

patterns and core box construction are stressed. Materials other than wood are used in this course. Two lecture and four laboratory hours each week. (3 crs.)

IAR 460. FURNITURE DESIGN AND CONSTRUCTION. Basic principles of furniture construction and upholstery are presented. Emphasis is placed on individual instruction in methods and techniques of teaching modern methods of upholstering for the junior and senior high school student. Prerequisites: Fundamentals of Woodworking and Advanced Woodworking. Two lecture and four laboratory hours each week. (3 crs.)

IAR 465. ADVANCED GRAPHIC COMMUNICATIONS. This is an elective course in the visual communications area. The course is structured to provide the student with gainful experiences in techniques of photographic screen printing, screen printing problems, and process photography. Prerequisites: Graphic Communications I and II. Two lecture and four laboratory hours each week. (3 crs.)

IAR 466. OFFSET LITHOGRAPHY. This is an elective course in the visual communications area. The student is provided an opportunity to become acquainted with new and more complex technology. The course content covers the following: special effects photography, direct screening of halftones, duotones, autoscreen halftones, autopositive film, art and copy preparation, phototypesetting, multiple page stripping, advanced presswork, press maintenance, paper and ink problems. A multi-color project is required of each student. Prerequisites: Graphic Communications I and II. Two lecture and four laboratory hours each week. (3 crs.)

IAR 467. FUNDAMENTALS OF PHOTOGRAPHY. This course deals with the fundamental and advanced problems of photography. It includes the study 'and care of cameras, picture composition, developing, enlarging, contact printing, dodging, toning, and photo finishing. Special problems are assigned to individual students. Two lecture and four laboratory hours each week. (3 crs.)

IAR 468. SPECIAL MACHINE. Project work utilizing special machine techniques. ADMISSION ONLY BY CONSENT OF THE INSTRUCTOR. Two lecture and four laboratory hours each week. (3 crs.)

IAR 470. INDUSTRIAL ELECTRICITY-ELECTRONICS. This course provides theory and experiences associated with the various types of alternating and direct current motors and motor controllers. These control systems shall include both electro-mechanical and electronic control systems. Study will also be made of the transformation and distribution of power for residential and industrial applications. Transformer theory, construction, design, and testing will also be included. If time permits, a unit on motor rewinding will be included. Experiences will include the use and operation of these circuits and equipment. Prerequisites: Electricity-Electronics I and II. Two lecture and four laboratory hours each week. (3 crs.)

INDEPENDENT STUDY COURSES:

IAR 309. STUDIES IN INDUSTRIAL MATERIALS. (VC)

STUDIES IN POWER. (VC)

IAR 329. STUDIES IN VISUAL COMMUNICATIONS. (VC)

IAR 409. *HONORS IN INDUSTRIAL MATERIALS. (VC)

IAR 419. *HONORS IN POWER. (VC)

IAR 429. *HONORS IN VISUAL COMMUNICATIONS. (VC)

These are independent studies in which the student works in an area of interest under the guidance of an instructor with similar interests. The student prepares triplicate copies of a proposal which presents the objectives to be achieved, a procedural outline, states special conditions, expected findings, and specifies how the activity will be evaluated.

The student is entitled to a minimum of five hours of individual faculty time per credit. Proposals must receive instructor and departmental approval before the student registers for the course.

*Honors courses are reserved for students with a "B" grade or better quality point average in the industrial arts courses taken.

IAR 475. ELECTRONIC COMMUNICATION CIRCUITS. A study of the theory of radio transmitters, FM receivers, single sideband techniques, and microwave transmission. Practical experiences will be provided with selected techniques of electronic communications. Prerequisite: IAR 226 and IAR 326. (3 crs.)

IAR 476. TELEVISION CIRCUITS. The theory of operation of the various stages of black and white receivers as well as color television receivers and television transmission. Practical experiences will be provided in the trouble shooting and operating techniques of the various stages of each system. Prerequisites: IAR 226 and 326. Two lecture and four laboratory hours each week. (3 crs.)

SERVICE COURSES

IAR 303. INDUSTRIAL ARTS FOR ELEMENTARY AND SPECIAL EDUCATION MAJORS. An introduction and/or review of: the purposes and relationships of general education and industrial arts; the learning capabilities of young and special children, and the various curriculum approaches for utilizing tools and materials to facilitate normal or remedial human development in grades K–6. Undergraduate students from either the elementary or special education curriculums will have the opportunity to develop basic psychomotor skills in the areas of visual communications, industrial materials, and power technology that are applicable to use within the public school setting. The final aspect of this effort in teacher education will have the elementary or special education major designing, developing, presenting, and evaluating a minimum of one short unit of instruction in industrial arts content to students in grades K–6. Class schedule: Lectures, discussion, and/or demonstrations — three clock hours per week. Laboratory activities — three clock hours per week. Prerequisites: Junior standing. (3 crs.)

IAR 304. ADVANCED INDUSTRIAL ARTS FOR ELEMENTARY AND SPECIAL EDUCATION MAJORS. A continuation of laboratory activities for the elementary or special education major in visual communications, industrial materials, and power technology to develop additional skills in the use of tools and materials. The depth of this involvement will be dependent upon each college student's past and present performance in planning and enacting his/her intended academic objectives. As in the previous course, each elementary or special education major will plan, develop, present, and evaluate a minimum of one hands-on instructional unit involving students in grades K–6. Class schedule: Lectures, discussions and/or demonstrations — three clock hours per week. Laboratory activities — three clock hours per week. Prerequisites: IAR 303, Industrial Arts for Elementary and Special Education Majors. (3 crs.)

SECONDARY EDUCATION DEPARTMENT

EDS 300. PROBLEMS OF SECONDARY EDUCATION. The practical problems of teaching and learning in the secondary school with emphasis on principles of problem solving are studied. A survey is made of the structure and nature of American Secondary Education. Tools and techniques used in problem solving are introduced. A Field Exposure Experience of two classes per week for nine weeks in the local secondary schools is a requirement of the course. Prerequisite: Educational Foundations. Three class hours each week. (3 crs.)

EDS 420. INTRODUCTION TO GUIDANCE AND PERSONNEL SERVICES. The primary objective of this course is to develop an understanding of the principles of guidance with emphasis on the basic concepts of individual and group counseling and the relationship of the counselor, teacher, and school nurse in grades K—12 — (3 crs.)

EDS 420. INTRODUCTION TO GUIDANCE AND PERSONNEL SERVICES. For C.R.N.A. only. The primary objective of this course is to develop an understanding of the principles of guidance in the post secondary school setting with emphasis on basic concepts of individual and group counseling as applicable to the role of the C.R.N.A. as an instructor and in his dealing with the sick and dying. Educational Psych **is not** a prerequisite. (3 crs.)

EDS 430. EDUCATIONAL TEST AND MEASUREMENTS IN SECONDARY SCHOOLS. This course is a consideration of the simpler statistical measures, with particular stress on the application to classroom work, and of the principles underlying the construction of valid, reliable objective tests. Prerequisite: Educational Psychology. Three class hours each week. (3 crs.)

EDS 435. SCHOOL AND COMMUNITY. The development of classroom techniques which lead to cooperative understandings between school and community is a chief objective of this course. Considerable attention is given to the structure of the community, its groups, and their goals. The school is viewed in its role as a public relations laboratory. Three class hours each week. (3 crs.)

EDS 440. TEACHING OF ENGLISH IN SECONDARY SCHOOLS. The application of principles of educational psychology, philosophy, and sociology to the teaching of English in junior and senior high school. The course includes both practical techniques of classroom practice and an investigation of the larger problems of the profession. Adequate prior content courses in English are necessary to the student undertaking this course. Three class hours each week. (3 crs.)

EDS 445. TEACHING OF SOCIAL STUDIES IN SECONDARY SCHOOLS. This course is intended to familiarize prospective teachers with desirable methods which may be used in teaching the social studies. Emphasis is placed on the philosophy, objectives, courses of study, and organization of subject matter for teaching purposes, curriculum materials, procedures and development. Three class hours each week. (3 crs.)

EDS 447. TEACHING OF EARTH SCIENCE IN THE SECONDARY SCHOOLS. A review of concepts and basic philosophy in Earth Science. The course includes a survey of available materials and current curricula in the field of earth science which form the bases for analysis of modern techniques in the teaching of this discipline. (3 crs.)

EDS 455. MODERN METHODS IN SECONDARY SCHOOLS. An analysis of the functions of secondary education and of classroom problems, followed by the presentation of techniques for the solution of such problems as indicated by recent literature in the field. Three class hours each week. (3 crs.)

EDS 456. THE SECONDARY SCHOOL CURRICULUM. An analysis of the functions of secondary school curriculum including: the historical development of the high school curriculum; current and projected trends; patterns of curriculum development; the dynamics of curriculum improvement; curriculum provisions for meeting individual differences; trends in specific instructional fields; the place and purpose of student activities and the extra-class curriculum. Three class hours each week. (3 crs.)

EDS 459. STUDENT TEACHING. Observation and participation in all teaching and activities related to the performance of a teacher's work, in the area of the student's specialization. Prerequisite: A general quality point average of C or 2.00 and 2.00 in the area of specialization. The student spends full time in actual classroom teaching for a semester of 16 weeks. (12 crs.)

EDS 460. TEACHING MATHEMATICS IN SECONDARY SCHOOLS. The mathematical abilities of the secondary student are diagnosed. Methods of mathematical teaching are discussed and presented. Results of mathematical education according to recent research are studied and trends are indicated. The control and use of the visual aids pertaining to mathematics, and a study of student, teacher, administration and community problems with proper methods of instruction are considered. Content material will be included at the discretion of the mathematics department. Evaluation is maintained by tests, reports, textbook evaluations, course outlines, unit plans, projects and teaching lessons. Prerequisite: Mathematical Insights. Three class hours each week. (3crs.)

EDS 465. DEVELOPMENTAL READING IN THE SECONDARY SCHOOL. See Ed 465. The purpose of this course is to help the prospective teachers of the Secondary Academic subject areas develop an understanding and appreciation of the necessary reading skills needed by their students. Methods of establishing awareness of general reading needs as well as the special skills unique to their subject area will be stressed. Two class hours each week. (2 crs.)

EDS 466. TEACHING MODERN LANGUAGES (K thru 12). This course will be taught in the language laboratory. It will cover the theory and practice of teaching and modern language. Instruction in the use of the laboratory will be given. Emphasis is given to the student developing an adequate understanding of the needs, interests, learning characteristics and motivations of students at various ages of development (K thru 12). (3 crs.)

EDS 467. TEACHING OF SCIENCE IN SECONDARY SCHOOLS. This course is planned to give the prospective science major a thorough grounding in the problems of teaching science. The objectives of the science program in the secondary school, selection of textbooks, sources of suitable literature, how to secure materials for instruction, the preparation of units, and special techniques are studied. Prerequisite: Twelve hours of work in major field. Three class hours each week. (3 crs.)

EDS 490. PROFESSIONAL PRACTICUM AND SCHOOL LAW. Primary consideration is given to the general techniques and principles of teaching with particular emphasis to techniques that are pertinent to the student's special field. Pennsylvania school law relevant to the work of the classroom teacher as well as the problems encountered by the students in their student teaching experiences are considered in the Professional Practicum class. Two class hours each week. (2 crs.)

EDS 491. HONORS SEMINAR IN SECONDARY EDUCATION. (VC)

EDS 494. STUDENT TEACHING WORKSHOP. This workshop is intended for students seeking secondary teaching certification in Pennsylvania who have had prior teaching experience in secondary schools. The learning procedures assume various understandings and competencies as a result of this previous teaching experience. Registration for this workshop requires the approval of the Dean of Education and the Director of Student Teaching. (8 crs.)

SPECIAL EDUCATION

ECM 101 and 102. EXCEPTIONAL CHILD I & II. Exceptional Child I and II constitute a two-course introductory sequence to handicapped children and to the field of special education. These courses examine the broad range of handicaps in children and their sociological, educational and vocational implications. Specifically, the sequence develops competencies in such areas as the historical development of services for handicapped children, definitions and classification of children's handicaps, the impact of labelling children and mainstream programs, pre-school and post-school programs for the handicapped, family services, prosthetic devices and program modifications for the physically handicapped and a behavioral analysis of normal child development. These courses will stress observation of the various target groups of handicapped children. (4 crs. each)

ECM 111. BEHAVIORAL PRINCIPLES I. The major emphasis is on measurement and evaluation of the learner's pre-intervention social and academic performance and post-intervention performance in those same domains. Academic decisioning based on graphic records of several types is stressed. Included are measurement and evaluation of permanent products; observational recording including continuous, event, duration, time-sample and interval recording techniques; and precision teaching. (4 crs.)

ECM 112. BEHAVIORAL PRINCIPLES II. This course is an extension of ECM 111. This course introduces the student to behavioral technology and its application to teaching. The inadequacies of traditional teaching strategies and the superiority of a behavioral model are emphasized. This emphasis is accomplished by providing the student a thorough understanding of learning principles and the relevance of these learning principles to classroom instruction. The importance of structuring the learner's environment so as to promote maximal social and academic performance is stressed. Some of the learning principles covered are: positive and negative reinforcement, discrimination learning, imitation learning, response and stimulus generalization, shaping and schedules of reinforcement. (4 crs.)

ECM 215. EDUCATION OF THE SEVERELY/PROFOUNDLY HANDICAPPED. This course prepares teachers for classrooms that contain children with severe and/or profound learning and/or behavior problems. The course emphasizes the value of Behavior Principles with such children. Class participants are presented with curriculum materials and instructional techniques/methodologies which have proven effective with such a population. Class participants spend time in selected classrooms which contain children with severe and/or profound problems where they must teach academic and self-help skills to the children and must engage in a program of encouraging or discouraging behaviors in a child or group of children. (4 crs.)

ECM 305. PARENT COUNSELING. Explores the effects of a handicapped child on family structure and expectations. Identification of the problems of parents, in under-

standing and accepting their handicapped children, is stressed. Various techniques for helping parents to adjust to the demands of the handicapped child are discussed. The involvement of the parent in the educational program of the child through home consequation is explored. (4 crs.)

ECM 306. DIAGNOSTIC TESTING AND PRESCRIPTIVE TEACHING. This course is divided into two major segments. The first segment deals with the essentials of psychological testing and covers topics such as: the vocabulary/terminology of psychological testing, teacher-made tests, uses and misuses of tests, and norm-referenced testing. The second segment deals with the rationale behind criterion-referenced testing. Students must administer selected criterion-referenced tests; and using the results which are obtained, they prepare a program/prescription of instruction which includes teaching techniques and materials. (4 crs.)

ECM 315. ANATOMY, PHYSIOLOGY, KINESIOLOGY. A course designed to help the student identify, define and describe the functions and inter-relationships of the major body systems in physical activity. Special emphasis is placed on movement analysis and how the body can move most effectively with the least amount of effort for the normal and for the handicapped person. (4 crs.)

ECM 316. MOTOR LEARNING. This is an introduction to the basic aspects of motor learning and how they are related to academic learning. Diagnostic procedure is stressed with theory applied to mentally and/or physically handicapped children in a gymnasium and swimming pool setting. (4 crs.)

ECM 317. RHYTHMICAL ANALYSIS AND CREATIVE MOVEMENT. Basic learning of the principles, techniques and research in the area of rhythms and creative movement for the exceptional child from preschool to adulthood. Theory will be applied to preschool children under a teacher-directed practicum. (3 crs.)

HPE 337. PHYSICAL EDUCATION ACTIVITIES FOR EXCEPTIONAL CHILDREN. An introduction to the principles, techniques, and research in the physical education training for the exceptional child with major emphasis on:

1) movement exploration
2) eurhythmics
3) perceptual-motor activities
4) physical-fitness activities
5) gymnastics
6) contemporary dance

A short-term practicum with exceptional students. Teacher directed. (3 crs.)

ECM 360. FIELD EXPERIENCE IN SPECIAL EDUCATION. Students will be assigned to approved practicum sites where they will be engaged in various supervised experiences with handicapped children. Practicum sites will include residential institutions, day care centers, summer camp programs, community agency programs and on-campus projects. Variable credit will be determined on the basis of the duration and extensiveness of the field experience. (VC)

ECM 405 and 417. CURRICULUM AND METHODS I & II. Curriculum and Methods I & II are a block of courses which are offered to special education majors the semester prior to the student teaching experience. The major purpose of these courses is the instruction

of communication and arithmetic skills to all age groups of exceptional children. Specifically, Curriculum and Methods I is concerned with communication skills (reading, listening, writing, speaking) and Curriculum and Methods II emphasizes arithmetic skills. Both courses stress: (1) a behavioral diagnosis of communication and arithmetic strengths and weaknesses; (2) the development and implementation of intervention strategies for various populations of exceptional children; (3) the selection and/or development of appropriate materials for instruction; and (4) the procedures and techniques for continuous evaluation of the instructional process in order to determine its effectiveness. (4 crs. each)

ECM 415. SCHOOL AND COMMUNITY RECREATION AND CRAFTS. This course is designed to prepare students in special education to utilize and incorporate community recreation, school recreation, and craft activities for the exceptional child and adult. Life-time sports and activities are included. Visitations and recreation playdays are set up for institutionalized children, senior citizens, and nursing home residents. (3 crs.)

ECM 416. METHODS OF TEACHING PHYSICAL EDUCATION FOR EXCEPTIONAL CHILDREN. An introduction to the principles, techniques and research related to teaching physical activities to the exceptional child. A teacher-directed practicum with mentally and/or physically handicapped children is included. (3 crs.)

ECM 426. HABILITATION TRAINING. Students are acquainted with the historical development of the specialized programs in the area of vocational education. Views of the mentally and/or physically handicapped are analyzed in terms of effects on the approaches to their treatment. Characteristics of special class students are discussed in relation to individualized curricular goals. Students are acquainted with the roles of governmental and private agencies in the rehabilitation process. In accordance with this, laws and regulations pertaining to the establishment and maintenance of vocational training programs are covered. (4 crs.)

ECM 495. HONORS SEMINAR. An independent study course in which students explore selected topics in the field of special education under the direction of a faculty member. Students meet individually with the instructor to discuss their projects. (3 crs.)

SPEECH PATHOLOGY AND AUDIOLOGY DEPARTMENT

SPA 101. PHONETICS. A study of the science of phonetics as it applies to the communicative process. Emphasis is placed on the articulation process in a communicative system. The student is required to learn and use the International Phonetic Alphabet. Three class hours each week. (3 crs.)

SPA 102. HEARING PROBLEMS. The appreciation of the many problems of children and adults with hearing losses in order to acquaint the student with the improvement and adjustment of the child or adult to his hearing problem. Three class hours each week. (3 crs.)

SPA 105. LANGUAGE AND SPEECH DEVELOPMENT. A study of the development of normal speech and language. Includes the origins of speech, stages of speech and language development, and factors influencing the acquisition of speech and language. Three class hours each week. (3 crs.)

SPA 106. ANATOMY AND PHYSIOLOGY OF THE EAR AND VOCAL MECHANISM. This study of the anatomy and physiology of the hearing and speech mechanisms deals with the functions and capabilities necessary for speech and hearing. (3 crs.)

SPA 200. SURVEY OF SPEECH PATHOLOGY. This foundation course in speech pathology considers incidence, etiology, and symptomatology of speech disorders, and stresses the physical, psychological, and social conditions related to those speech problems. Three class hours each week. (3 crs.)

SPA 211. PRACTICE IN MEASUREMENT OF HEARING. Familiarization with the basic equipment and procedures used in the assessment of hearing. Opportunity for practice in the use of this equipment is provided. Three class hours each week plus laboratory. (3 crs.)

SPA 212. AUDITORY TRAINING AND SPEECH READING. Students study the different systems of teaching Speech Reading. Lessons in Auditory Training and Speech Reading are planned and presented for all age groups with different levels of hearing impairment. Three class hours each week. (3 crs.)

SPA 215. PSYCHOLOGY OF SPEECH AND HEARING. Familiarization with the psychological factors involved in speech and hearing. Special emphasis is given to the perception of speech, frequency of occurrence of symbols, and the role of learning. Three class hours each week. (3 crs.)

SPA 321. INTRODUCTION TO CLINICAL PROCEDURES. A review of speech disorders, testing, remedial principles. Opportunity for the accumulation of materials for therapy, and for observation of clinical practicum. Three class hours each week. (3 crs.)

SPA 325. ADMINISTRATION OF PUBLIC SCHOOL PROGRAMS. Acquaints students with survey techniques, scheduling, travel, records, interviews, materials, and personnel involved in the administration of a public-school program in speech and hearing. Three class hours each week. (3 crs.)

SPA 332. CLINICAL METHODS AND TECHNIQUES. A study of the application of various therapeutic methods and techniques, with some emphasis on diagnostic tools used by the speech clinician. Three class hours per week. (3 crs.)

SPA 459. STUDENT TEACHING. Observation and participation in a public-school speech and hearing therapy program. The student spends one full semester of sixteen weeks under supervision of a certified public school clinician, with periodic visits by the college supervisor. (12 crs.)

SPA 490. PROFESSIONAL PRACTICUM AND SCHOOL LAW. General techniques for the student's area of specialization. Pennsylvania School Laws relevant to the work of the public school clinician. Discussion of problems encountered by the clinicians during student teaching. Two class hours each week. (2 crs.)

SPA 409. HONORS. Open to undergraduate students in SPA who wish to pursue a special interest in some area of study in their field. Prerequisite: approval of the department. (1-6 crs.)

School of Science and Technology

California State College's new School of Science and Technology offers five programs leading to the Bachelor of Science degree which prepare students for employment in a variety of technical and professional occupations. Each program combines a broad, balanced technical option with substantial foundation studies in communications, humanities, social sciences and mathematics. In addition, each curriculum has a flexible general education component containing a minimum of thirty hours of free elective credits which provides students the opportunity to select courses in their individual area of interest. All students are expected to consult regularly with an adviser to insure satisfactory completion of all curricular requirements.

Program outlines which appear on the following pages should be considered guides to courses and requirements necessary for graduation. Program review is a continuous process and changes in program content occur from time to time. Up-to-date program information can always be obtained by inquiring at the School Office or writing to Dr. Richard B. Hart, Dean of Science and Technology, 205 Noss, California State College, California, Pennsylvania, 15419.

PETROLEUM TECHNOLOGY

TECHNICAL EDUCATION 93 crs.

Chemistry — 11 crs.

Gen. Chemistry I	4 cr.
Gen. Chemistry II	4 cr.
Geochemistry	3 cr.

Physics — 20 crs.

Intro. to Power/Energy	3 cr.
Physics I	4 cr.
Physics II	4 cr.
Geophysics I	3 cr.
Applied Geophysics	3 cr.
Reservoir Evaluation	3 cr.

Mathematics — 15 crs.

College Algebra	3 cr.
Calculus I	3 cr.
Calculus II	3 cr.
Statistics	3 cr.
Computer Science I	3 cr.

GENERAL EDUCATION — 35 crs.

Scientific/Technical Writing	3 cr.
Free Electives	32 cr.

Geology — 47 crs.

Intro. to Geology	4 cr.
Historical Geology	4 cr.
Mineralogy	3 cr.
Petrology	3 cr.
Sedimentology	3 cr.
Stratigraphy	3 cr.
Paleontology	3 cr.
Structural Geology	3 cr.
Regional Geomorphology	3 cr.
Cartography	3 cr.
Petroleum Geology I	3 cr.
Petroleum Geology II	3 cr.
Petroleum Prod./Econ.	3 cr.
Field Course in Geology	6 cr.

CAREER POSSIBILITIES IN PETROLEUM TECHNOLOGY

CAREER OPPORTUNITIES:

1. Petroleum exploration
2. Mining exploration
3. Petroleum production

4. Reservoir engineering
5. Well-log analyses
6. Geophysical exploration
7. Graduate studies

WATER ANALYSIS TECHNOLOGY

GENERAL EDUCATION – 30 crs.

Humanities	
Composition I	3 cr.
Composition II	3 cr.
Sci./Tech. Writing	3 cr.
Economics – Micro	3 cr.
Elective	3 cr.
Elective	3 cr.
Elective	3 cr.
Social Sciences	
Elective	3 cr.
Elective	3 cr.
Psych. or Sociology Elective	3 cr.

FREE ELECTIVES – 32 crs.

TECHNOLOGY EDUCATION – 66 crs.

Chemistry	
Gen. Chemistry I	4 cr.
Gen. Chemistry II	4 cr.
Analytical Chem. I	4 cr.
Organic Chemistry I	4 cr.
Organic Chemistry II	4 cr.
Related Math and Sciences	
General Geology	4 cr.
Meteorology	3 cr.
Physics I	4 cr.
Physics II	4 cr.
Calculus I	3 cr.
Statistics	3 cr.
Field of Specialization	
Man & His Environment	3 cr.
Prin. of Biology	4 cr.
Biotic Indicators of Water Pollution	4 cr.
Techniques in Water and Water Analysis	4 cr.
Water Treatment Facilities	3 cr.
Lab Instrumentation	4 cr.
Seminar	3 cr.

CAREER POSSIBILITIES IN WATER ANALYSIS TECHNOLOGY

CAREER OPPORTUNITIES:

1. Federal Agencies – Environmental Protection Agency, Department of the Interior, etc.
2. State Agencies such as: Pennsylvania Department of Environmental Resources
3. State Fish & Wildlife Agencies such as: Pennsylvania Fish Commission
4. Private Consulting Organization – Wastewater treatment plant
5. Research Laboratories

MANUFACTURING TECHNOLOGY

GENERAL EDUCATION – 64 crs.

Humanities

Eng. Composition I	3 cr.
Technical Writing	3 cr.

Social Sciences

General Psychology	3 cr.
Sociology	3 cr.

Natural Sciences

Technical Math I	3 cr.
Technical Math II	3 cr.
Technical Math III	3 cr.
Chemistry of Materials	3 cr.
Physics	4 cr.
Computer Science I	3 cr.
Computer Science II	3 cr.

ELECTIVES – 30 crs.

(any college level course)

TECHNICAL EDUCATION – 64 crs.

Professional Speciality

Industrial Safety	3 cr.
Personnel Relations	3 cr.
Prin. of Estimating	3 cr.
Industrial Internship	13 cr.
Industrial Practicum	2 cr.

Occupational Sepciality

Intro. to Tech. Drawing	2 cr.
Machine Drawing/Design	2 cr.
Fund. of Machine Shop	3 cr.
Advanced Machine Shop	3 cr.
Numerical Control Prog. I	3 cr.
Numerical Control Prog. II	3 cr.
Adv. Numerical Control Prog.	3 cr.
Quality Control	3 cr.
Pneumatics	3 cr.
Hydraulics	3 cr.
Mechanics	3 cr.
Jig/Fixture Design	3 cr.
Materials Testing	3 cr.
Electronic Control Unit Maintenance	3 cr.

CAREER POSSIBILITIES IN MANUFACTURING TECHNOLOGY

CAREER OPPORTUNITIES:

1. Computer Programmer
2. Machine Tool Programmer
3. Detailer
4. Draftsman – Designer
5. Numerically Controlled Machine Operator
6. Foreman
7. Expeditor
8. Supervisor
9. Maintenance Supervisor

GRAPHIC COMMUNICATIONS TECHNOLOGY

Required Courses

	Credits		Credits
English Composition I	3	Science of Materials	3
Sci./Tech. Writing	3	College Physics I	4
Technical Math I	3	College Physics II	4

Technical Math II	3	General Psychology	3
Technical Drawing	2	Elect./Elect. I	3
Graphic Communications I	3	Industrial Psychology	3
Graphic Communications II	3	Industrial Safety	3
Chem. for Graphic Communications	3	Principles of Management	3
		Electronic Comp. I	3

Area of Concentration — Required

PHOTO-OFFSET LITHOGRAPHY

	Credits
Prin. of Layout/Design	3
Offset Strpg./Platemaking	3
Offset Presswork I	3
Offset Presswork II	3
Line Photography	3
Halftone Photography	3
Color Separation	3
Elect. Comp. I	3
Est./Cost Analysis I	3
Prtg. Prod. Mgt. Tech.	3
Finishing/Binding Tech.	3
Photography	3
Industrial Internship	3

ELECTRO-GRAPHICS

	Credits
Elect./Elect. II	3
Television Circuits	3
Industrial Electronics	3
Fund. of Digital Circuits	3
Adv. Digital Circuits	3
Comp. Science I	3
Power Technology	3
Optics Technology	3
Photography	3

SCREEN PRINTING

	Credits
Est./Cost Anal. I	3
Line Photography	3
Halftone Photography	3
Elect. Comp. I	3
Prin. of Layout/Design	3
Stencil Systems	3
Substrates/Image Trans.	3
Finishing/Binding Tech.	3
Color Separation	3
Photography	3
Industrial Internship	3

Area of Concentration — Electives

(Occupational Specialty)

	Credits		Credits
Managerial Finance	3	Sales Incentive Programs	3
Group Dynamics	3	Business Law	3
Labor Economics	3	Economics, Intro. to Micro and Macro.	3
Collective Bargaining	3	Principles of Sociology	3
Human Relations	3		

Managerial Economics	3
Government Regulation of Business	3
Cost Accounting	3
Screen Printing Production Problems	3
Electronic Composition II	3
Estimating/Cost Analysis II	3
Finance of Small Business	3
Photofabrication and Engraving	3
Offset Stripping – Color	3
Advanced Color Separation Photo	3
Special Problems I	3
Special Problems II	3
Special Problems III	3
Industrial First Aid	3

PHOTO-OFFSET LITHOGRAPHY

GENERAL EDUCATION – 62 cr.

Humanities

English Composition I	3 cr.
Sci./Tech. Writing	3 cr.

Social Sciences

Gen. Psychology	3 cr.
Ind. Psychology	3 cr.

Natural Sciences

Tech. Math I	3 cr.
Tech. Math II	3 cr.
Chem. for Gr. Comm.	3 cr.
Science of Materials	3 cr.
College Physics I	4 cr.
College Physics II	4 cr.

FREE ELECTIVES – 30 cr.

TECHNICAL EDUCATION – 66 cr.

Professional Specialty

Industrial Safety	3 cr.
Estimating/Cost. Anal. I	3 cr.
Ind. Internship	14 cr.

Occupational Specialty

Graphic Comm. I	3 cr.
Graphic Comm. II	3 cr.
Prin. of Layout & Design	2 cr.
Offset Stripping/ Platemaking	3 cr.
Offset Presswork I	3 cr.
Offset Presswork II	3 cr.
Line Photography	3 cr.
Halftone Photography	3 cr.
Color Separation	3 cr.
Elect. Comp. I	3 cr.
Printing Prod. Mgmt. Tech.	3 cr.
Finishing/Binding Tech.	3 cr.
Photography	3 cr.

AREA OF CONCENTRATION ELECTIVES – 8 cr.

ELECTRO-GRAPHICS

GENERAL EDUCATION – 62 crs.

Humanities

English Comp. I	3 cr.
Sci./Tech. Writing	3 cr.

Social Sciences

General Psychology	3 cr.
Ind. Psychology	3 cr.

Natural Sciences

Tech. Math I	3 cr.

TECHNICAL EDUCATION – 66 crs.

Professional Specialty

Industrial Safety	3 cr.
Est./Costing Anal. I	3 cr.
Ind. Internship	14 cr.

Occupational Specialty

Intro. To Tech. Drawing	2 cr.
Graphic Comm. I	3 cr.
Graphic Comm. II	3 cr.
Elect./Elect. I	3 cr.

Tech. Math II	3 cr.
Science of Materials	3 cr.
College Physics I	4 cr.
College Physics II	4 cr.
Chemistry for Graph. Communications	3 cr.

FREE ELECTIVES – 30 crs.

Television Circuits	3 cr.
Industrial Elect.	3 cr.
Fund. of Digital Circ.	3 cr.
Adv. Digital Circuits	3 cr.
Computer Science	3 cr.
Power Technology	3 cr.
Optics	3 cr.
Photography	3 cr.

AREA OF CONCENTRATION–11 crs.

SCREEN PRINTING

GENERAL EDUCATION – 62 crs.

Humanities

English Comp. I	3 cr.
Scien. & Tech. Writing	3 cr.

Social Sciences

General Psychology	3 cr.
Industrial Psychology	3 cr.

Natural Sciences

Technical Math I	3 cr.
Technical Math II	3 cr.
Chem. of Graphic Comm.	3 cr.
Science of Materials	3 cr.
College Physics I	4 cr.
College Physics II	4 cr.

FREE ELECTIVES – 30 crs.

TECHNICAL EDUCATION – 66 crs.

Professional Speciality

Industrial Safety	3 cr.
Estimating/Cost Analy. I	3 cr.
Industrial Internship	14 cr.

Occupational Specialty

Graphic Comm. I	3 cr.
Graphic Comm. II	3 cr.
Technical Drawing	2 cr.
Princ. of Layout/Design	2 cr.
Stencil Systems	3 cr.
Substrates/Image Trans	3 cr.
Line Photography	3 cr.
Halftone Photography	3 cr.
Electronic Comp. I	3 cr.
Finishing/Binding Tech.	3 cr.
Color Separation	3 cr.
Photography	3 cr.

AREA OF CONCENTRATION ELECTIVES – 12 crs.

CAREER POSSIBILITIES IN GRAPHIC COMMUNICATIONS TECHNOLOGY

CAREER OPPORTUNITIES:

1. Technician for Equipment Manufacturer
2. Sales
3. Technical Equipment Estimating
4. Printing Plant
5. Quality Control Technician – Printing Plant
6. Foreman – Preparation Department
7. Foreman – Offset Press
8. Technical Writer – Parts list and press manufacturer

9. Foreman — Photo-composition
10. Sales for Photo-composition Equipment
11. Customer Service — Representative in printing or photo-composition plant
12. Production
13. Educator

*MAN . QUALITY CONTROL. This course will consider the two fundamental concepts of that topic; measurement and variation. Discussions on measurement will be concerned with strength, weight and size, while the concern for variation will recognize that no two things are alike; but with the use of sophisticated equipment minute differences can be detected. This course will include a discussion of the evolution of quality control. Other topics will be measurement, inspection, economics of quality, statistical aids, sampling, process control techniques and organization for quality control. (3 crs.)

*MAN . JIG AND FIXTURE DESIGN. This course will consider the design requirements for jig and fixture construction. Emphasis will be placed on the conventional methods of locating and fastening parts to be machined. Standard jig and fixture components will be used in design problems. A jig or fixture will be constructed by each student and be used in the manufacturing of a piece part. Prerequisites are Fundamentals of Machine Shop and Advanced Machine Shop. (3 crs.)

*IAR . NUMERICAL CONTROL PROGRAMMING I. An introductory course to programming numerically-controlled machine tools. The binary system of numbers and the cartesian coordinate system as they relate to writing machine commands will be considered. For the tape input, both EIA and ASCII codes will be used with word address, tab sequential and fixed sequential formats. The student will interpret a coded format detail and be able to write the manuscript for motion dimensions and ancillary command instructions. Various tasks will be experienced that will promote an understanding of the operation of a turning center and a two-axis positioning milling machine to acceptable machine tolerances. Course prerequisites are: Technical Mathematics I and II, Fundamentals of Machine Shop. (3 crs.)

*IAR . NUMERICAL CONTROL PROGRAMMING II. An advanced course in manual programming of numerically-controlled machines. An in-depth study will be made of the technique used to cause an incremental movement in a straight line direction cutting a chord of an arc to machine a three-dimensional curve to specified tolerances. Various operations in linear interpolation will be experienced in the numerical control laboratory. The valve of a computer as it is related to circular interpolation will be discussed. Course prerequisite is Numerical Control Programming I. (3 crs.)

*MAN . ADVANCED NUMERICAL CONTROL PROGRAMMING. This course will concentrate on the use of a computer language for the development of a part program. Various languages will be studied to determine how they can be used to effect the geometry of a part and also the motion and actions of a machine tool. Direct computer control of machine tools will be discussed as will computer aided manufacturing and computer aided design. Course prerequisite is Numerical Control Programming II. (3 crs.)

*GCT . HALFTONE CAMERA TECHNIQUES. A course in the procedures, techniques and application of process camera work as it applies to black and white halftone photography. Among subject matter covered are darkroom techniques, process camera

operations, halftone screens, densitometry, making halftone negatives and positives, filters, direct screening with enlargers, quality control, manipulating tone values and electronic exposure devices. (3 crs.)

GCT 320. ELECTRONIC COMPOSITION I. Introduces the student to the production principles, procedures and techniques of producing composition by electronic photographic systems. Special attention is given to the study of justifying and non-justifying keyboards and their place in the typesetting system as well as analysis of the various photo output including video display terminals. Some additional work with proofing and paste-up techniques will be done. Graphic Communications I and II are prerequisites to this course. (3 crs.)

GCT 321. ELECTRONIC COMPOSITION II. Electronic Composition II is an elective course for industrial arts and science and technology students. Graphic Communications I, and II and Electronic Composition I are prerequisites. Emphasis is placed on analysis of photocomposition systems from an understanding of basic functions and their compatibility with other components or systems. Some hands-on experience will be provided to alter the compatibility for better system function. (3 crs.)

*GCT . OFFSET STRIPPING AND PLATEMAKING. A study of the methods and procedures used in offset stripping and platemaking. Attention is given to theoretical study plus practical involvement in making various plates. Emphasis is placed in stripping procedures, plate selection, image transfer, equipment considerations, light sources, processing procedures, quality control, additions and deletions, troubleshooting, automatic processors, and safety measures. (3 crs.)

*GCT . COLOR SEPARATION PHOTOGRAPHY. A study of the methods and techniques involved in producing process color separations from transparencies and reflective copy. Emphasis is placed on color theory, masking procedures, filter applications, densitometry, color proofing systems, color evaluation, and process color control techniques. (3 crs.)

GCT 340. ESTIMATING AND COST ANALYSIS I. A study of the principles and procedures for determining the costs involved in producing printed products by letterpress and offset. Establishment of cost centers and analysis of practice and cost factors in determining hourly cost is done. A comprehensive study is made of each job by analyzing the specifications, cost of materials and labor, production time and profit margins. (3 crs.)

*GCT . OFFSET PRESSWORK. A study of the theory, practice and principles of photo offset presswork. Emphasis is placed on press operating procedures, press adjustment, ink and dampening systems, ink drying methods, paper problems, troubleshooting, densitometry, press maintenance, quality control and practice in printing single and multiple colors. (3 crs.)

*GCT . FINISHING AND BINDING. A course in the procedures and processes utilized in finishing and binding of printed materials. Emphasis will be placed on shaping, forming and joining sheets of paper. (3 crs.)

*GCT . PRINCIPLES OF LAYOUT AND DESIGN. Study and application of the elements and principles of design with their application to graphic communications. Problem solving procedures will be utilized for skill in layout development. (3 crs.)

*GCT . LINE PHOTOGRAPHY. A course which deals with techniques and processes involved in operating a process camera. A critical study of the optical system, the sources of illumination with regard to compatibility with sensitive materials and chemistry used as well as an examination of the image plane with regard to focus and coverage. Usage of the equipment in simulated products situations will include determining exposures, light settings, controls used in achieving consistency of product and production of simple line to close register color line negatives. (3 crs.)

*GCT . SCIENCE OF MATERIALS. Emphasis is placed on the formulation, identification and selection of graphic communications materials. Materials will include ink and substrates for both printing and allied processes. (3 crs.)

*GCT . SCREEN PRINTING PRODUCTION PROBLEMS. Individual and/or group problems involving the planning and execution of chosen production problems in the area of screen printing, utilizing flat and irregular surfaces as well as a variety of substrates. (3 crs.)

*DENOTES A NEW COURSE. THE COURSE NUMBER WILL BE ASSIGNED LATER.

INDUSTRIAL MANAGEMENT TECHNOLOGY

PRINTING MANAGEMENT

GENERAL EDUCATION – 40 crs.

Humanities	
Composition I	3 cr.
Sci./Tech. Writing	3 cr.
Oral Communications Management	3 cr.
Social Sciences	
General Psychology	3 cr.
Industrial Psychology	3 cr.
Natural Sciences	
Technical Math I	3 cr.
Technical Math II	3 cr.
Math of Finance	3 cr.
Physics I	4 cr.
Physics II	4 cr.
Chemistry I	4 cr.
Chemistry II	4 cr.

FREE ELECTIVES – 34 crs.

TECHNICAL EDUCATION – 54 crs.

Management	
Intro. to Micro. Econ.	3 cr.
Accounting I	3 cr.
Accounting II	3 cr.
Prin. of Management	3 cr.
Managerial Finance	3 cr.
Prin. of Production	3 cr.
Collective Bargaining	3 cr.
Estimating/Cost Analysis I	3 cr.
Graphic Communications	
Graphic Communications I	3 cr.
Graphic Communications II	3 cr.
Typography	3 cr.
Graphic Comm. Processes	3 cr.
Prin. of Layout/Design	3 cr.
Electronic Composition I	3 cr.
Graphic Arts Materials	3 cr.
Line Photography	3 cr.
Half-Tone Photography	3 cr.
Color Separation	3 cr.

*EAS . PETROLEUM PRODUCTION AND ECONOMICS. This course deals with the economics of the petroleum industry in general and with the vertically integrated major oil companies in particular. All stages of the movement of petroleum will be considered,

from initial production (primary, secondary, and tertiary) at the well site, through transportation, to refining and marketing. The effects in world markets produced by cartels and embargoes will be of special interest. At the domestic level, local, state, and federal regulations governing the extraction of petroleum from individual wells, as well as the development of whole fields will be discussed. It is assumed that the student has some background in both economics and petroleum geology before he takes this course. (3 crs.)

*EAS . RESERVOIR EVALUATION. The purpose of this course is to analyze in detail those rocks which serve for the storage and ultimately for the production of petroleum. The characteristics of these rocks will be studies in hand specimen, in thin section, and in terms of their responses to various "down hole" geophysical surveys. Specific topics to be considered include sedimentary rock classification, the primary origin of limestones, the development of secondary porosity in carbonates, the geometry and origin of sandstone bodies, diagenetic changes in both sandstones and carbonates, and evaluation well log data. This last includes the calculation of porosity, permeability, and fluid saturations from radioactivity, electrical, and acoustic logs.

*EAS . APPLIES GEOPHYSICS. This is an advanced course which applies theoretical geophysical principles to the practical problem of petroleum exploration. Emphasis will be placed on both field work and instrumentation. Work in the laboratory will consist of the analysis (by hand and with automatic data processing equipment) of field survey results as well as the planning and final "work up" of an oil prospect. Kinds of exploration techniques to be utilized will be seismic (reflection and refraction), magnetic, gravity, and electrical. Time permitting, some consideration will be given to geochemical prospecting techniques and to field mapping. (3 crs.)

*EAS . TECHNIQUES IN WATER AND WASTEWATER ANALYSIS. (Lecture + Lab) A thorough study of the chemical testing of water in wastewater plants, streams, and drinking water sources. Emphasis will be placed on learning acceptable levels of chemicals in different types of water. Samples of water from sources of concern will be analyzed in the laboratory portion of the course. (4 crs.)

WAT 321. BIOTIC INDICATORS OF WATER POLLUTION. (Lecture + Lab) A survey of biotic indicators of pollution with emphasis on relating these indicators to the chemical and physical characteristics of various polluted waters. Practical exercises include field problems as well as laboratory experiments. Prerequisites — Principles of Biology, General Chemistry I and II, and Analytical Chemistry I. (4 crs.)

WAT 365. SEMINAR — TOPICS IN WATER POLLUTION. A seminar dealing with current topics in water pollution emphasizing the effects of various pollutants on the biological and legal aspects of water quality. (3 crs.)

MANAGEMENT AND COMPUTER SCIENCE

MAJOR AREA — 96 crs.

Course Requirements

GENERAL EDUCATION — 30 crs.		MANAGEMENT — 33 crs.	
Composition I	3 cr.	Accounting I	3 cr.
General Psychology	3 cr.	Accounting II	3 cr.
Business Writing	3 cr.	Cost Accounting	3 cr.

Oral Comm. Mgt.	3 cr.
Sci./Tech. Writing	3 cr.
Mathematics	
Tech. Math I	3 cr.
Tech. Math II	3 cr.
Math of Finance I	3 cr.
Math of Finance II	3 cr.
Basic Calculus	3 cr.

FREE ELECTIVES – 32 crs.

Business Statistics	3 cr.
Intro. to Micro. Econ.	3 cr.
Intro to Macro. Econ.	3 cr.
Prin. of Management	3 cr.
Managerial Econ.	3 cr.
Financial Management	3 cr.
Industrial Psychology	3 cr.
Collective Bargaining	3 cr.

COMPUTER SCIENCE – 33 crs.

Basic Prog. Lang.	3 cr.
Computer Science I	3 cr.
Computer Science II	3 cr.
Cobol I	3 cr.
Cobol II	3 cr.
Data Structures	3 cr.
Surv. of Oper. Research	3 cr.
Systems Analysis	3 cr.
Computer Architecture	3 cr.
Logic/Switching Theory of Computer	3 cr.
Computer Graphics	3 cr.

MANUFACTURING

GENERAL EDUCATION – 67 crs.

Humanities	
Composition I	3 cr.
Business Writing	3 cr.
Sci./Tech. Writing	3 cr.
Oral Comm. Mgt.	3 cr.
Social Sciences	
Gen. Psychology	3 cr.
Natural Sciences	
Technical Math I	3 cr.
Technical Math II	3 cr.
Math of Finance	3 cr.
Physics I	4 cr.
Physics II	4 cr.
Comp. Sci. I	3 cr.

FREE ELECTIVES – 32 crs.

TECHNICAL EDUCATION – 61 crs.

Management	
Accounting I	3 cr.
Accounting II	3 cr.
Cost Accounting	3 cr.
Industrial Psychology	
Prin. of Management	3 cr.
Intro. to Micro Econ.	3 cr.
Intro. to Macro Econ.	3 cr.
Managerial Economics	3 cr.
Collective Bargaining	3 cr.
Cobol I	3 cr.
Manufacturing	
Intro. to Tech. Drawing	2 cr.
Machine Drawing/Design	2 cr.
Fund. of Machine	3 cr.
Advanced Machine	3 cr.
Numerical Control Prog. I	3 cr.
Numerical Control Prog. II	3 cr.
Adv. Numerical Cont. Prog.	3 cr.
Materials Testing	3 cr.
Quality Control	3 cr.
Hydraulics	3 cr.
Pneumatics	3 cr.

CAREER POSSIBILITIES IN INDUSTRIAL MANAGEMENT TECHNOLOGY

CAREER OPPORTUNITIES:

1. Management supervisors & management trainee positions in a variety of industrial situations
2. Technical sales and service positions in a variety of industries.
3. Positions in systems analysis and design — operations research
4. Private industrial consulting firms
5. Pursue graduate study in management science or technical field.

PRE-ENGINEERING (COOPERATIVE 3:2 PROGRAMS)

California State College participates in cooperative liberal arts engineering programs with both the Pennsylvania State University and the University of Pittsburgh. The enrolling student undertakes a three-year curriculum at California State College concentrating on studies in liberal arts and pre-engineering courses in Natural Sciences. Upon successful completion of that curriculum and recommendation, the student spends two years at the Pennsylvania State University or the University of Pittsburgh, at which time the student will complete the engineering course requirements as specified by that institution.

Some advantages of such cooperative programs include the following:

1. For students who have yet to choose between engineering or another discipline as a field of endeavor, the programs provide the the student with initial studies in both the arts and sciences at California State College during which time the student may ascertain whether his abilities and interests lie in the field of engineering or another discipline.
2. The programs permit qualified students to receive both a liberal and technical education at relatively low cost.
3. Graduates of the program hold two baccalaureate degrees: a B.A. in Natural Sciences from California State College and a B.S. in Engineering from the cooperating university. Thus, through five years of study, a student may complete what otherwise could require six or more years.

The program is designed so that the first year is the same for any enrolled student independent of his final choice of engineering school or discipline. This allows students maximum time before these sometimes difficult choices must be made. Beyond the first year, however, the individual programs are determined by these choices and therefore rely on careful advising. A rigorous system of faculty advisement, therefore, is an integral part of the program.

A student transferring to the Pennsylvania State University may enter any of the following engineering disciplines:

Aerospace Engineering
Agricultural Engineering
Ceramic Science
Chemical Engineering
Civil Engineering
Environmental Engineering
Industrial Engineering
Mechanical Engineering
Metallurgy
Mining Engineering

Electrical Engineering
Engineering Science
Nuclear Engineering
Petroleum and Natural Gas Engineering

A student transferring to the University of Pittsburgh may enter any of the following engineering disciplines:

Chemical Engineering
Civil Engineering
Electrical Engineering
Industrial Engineering
Mechanical Engineering
Metallurgical/Materials Engineering
Mining Engineering

OTHER SCIENCE PROGRAMS

The School of Arts and Sciences offers B.S. degrees in the following fields:

Biology
Chemistry
Geology
Mathematics
Mathematics-Computer Science
Physics

The School of Education offers B.S. degrees in Secondary Education with specialization in the following fields:

Biology
Chemistry
Earth Science
Mathematics
Physics
Science

The School of Science and Technology offers B.S. degrees in the following fields:

Graphic Communications Technology
Industrial Management Technology
Manufacturing Technology
Petroleum Technology
Water Analysis Technology

For further information about this program, contact Dr. Richard Hart, Dean, School of Science and Technology, Room 205 Noss, California State College, 412/938-4169 or 938-4337.

PRE-ENGINEERING (Cooperative 3:2 Program)

GENERAL EDUCATION — 36 crs.

Humanities — 6 crs.
Persp. in Phil 3 cr.

Natural Sciences — 6 crs.

Social Sciences — 6 crs.
Elements of Economics 3 cr.

Communications — 9 crs.
Composition I 3 cr.
Sci./Tech. Writing 3 cr.
Oral Communications 3 cr.

*Restricted Electives — 9 crs.

AREA OF CONCENTRATION — 60 crs.

General Requirements — 41 crs.
General Chemistry I 4 cr.
General Chemistry II 4 cr.
College Physics I 4 cr.
College Physics II 4 cr.
College Physics III 4 cr.
Calculus I 3 cr.

*Engineering Discipline Electives — 19 cr.

Calculus II	3 cr.
Calculus III	3 cr.
Calculus IV	3 cr.
Linear Algebra	3 cr.
Computer Science I	3 cr.
Differential Equations	3 cr.

*Selected with adviser approval.

PHILOSOPHY

***NOTE:** The letters A, B, or C after the title of upper-level courses indicate which area the course satisfies for philosophy majors.*

****No prerequisites***

PHI 100. *PERSPECTIVES IN PHILOSOPHY. Introduces the student to such major philosophical issues as the nature of knowledge, reality, religion, and morals. This course is not recommended for philosophy majors. (3 crs.)

PHI 115. *LOGIC AND LANGUAGE. Introduces the student to the basic principles and techniques for distinguishing correct from incorrect reasoning. (3 crs.)

PHI 201. HISTORY OF ANCIENT PHILOSOPHY. Discusses the pre-Socratic philosophers, Plato, Aristotle, the Stoics, Epicureans, and the Skeptics. (3 crs.)

PHI 204. WORLD RELIGIONS I — ORIENTAL. A study of the religions of mankind — their beliefs and practices. Special attention is given to Hinduism, Buddhism, and the Chinese and Japanese religions. Illustrated with slides, films and tapes. (3 crs.)

PHI 205. WORLD RELIGIONS II — WESTERN. A study of the growth and development of Judaism, Christianity, and Islam. Special attention is given to readings of original documents. Illustrated with slides, films and tapes. (3 crs.)

PHI 206. 16TH TO 18TH-CENTURY PHILOSOPHY. Discusses such influential thinkers as Francis Bacon, Descartes, Hobbes, Spinoza, Leibniz, Locke, Berkeley, Hume and Kant. (3 crs.)

PHI 211. *FORMAL LOGIC I — C. Examines the meaning of statement connectives, the use of truth tables, the structure of arguments in terms of the propositional calculus, quantification, and classes. (3 crs.)

PHI 220. *ETHICS. Examines selected ethical systems and discusses their philosophical foundations. Lays special emphasis on understanding such basic moral concepts as good, right, and duty. (3 crs.)

PHI 225. *SOCIAL AND POLITICAL PHILOSOPHY — B. Examines selected social or political systems and discusses their philosophical foundations. Lays special emphasis on such basic concepts as natural right, equality, justice, individual freedom, and political authority. (3 crs.)

PHI 231. PHILOSOPHY OF RELIGION — B. Discusses the nature of religion, the arguments for or against the existence of God, the question of religious knowledge,

mysticism and revelation, the problem of evil, the quest of immortality, and the nature of religious discourse. (3 crs.)

PHI 235. PHILOSOPHY OF ART. Examines the nature and function of art, critical judgments in the arts, and such basic concepts as beauty, the ugly, meaning, creativity, and style. (3 crs.)

PHI 240. *PHILOSOPHY OF EDUCATION. Discusses the aims of education and the relation of philosophy to education. (3 crs.)

PHI 246. *VALUES & SCIENCE. Studies the nature of science and its relation to human values. Explores the problems that result from changes in our values as science and technology advance. (3 crs.)

PHI 253. ORIENTAL PHILOSOPHY – A. Examines the methodology, doctrines, and intellectual culture of the major oriental traditions. Hinduism, Jainism, Buddhism, Taoism, and Confucianism are considered. (3 crs.)

PHI 261. MEANING OF MODERN ART (EUROPEAN). Introduces the student to such modern movements in art as Impressionism, Post-Impressionism, Symbolism, Cubism, Surrealism, German Expressionism, and Abstract Expressionism. Illustrated with color slides, films, and music. (3 crs.)

PHI 262. MEANING OF MODERN ART (AMERICAN). Deals with American developments in the arts, beginning with the Ash Can School and Armory Show to the present kinetic, optic, and pop art. Illustrated with color slides, films, and appropriate music. (3 crs.)

PHI 266. PHILOSOPHY OF PLAY. Seeks to clarify human play and/or leisure activities. Special attention is given to the problem of constructive and destructive forms of play and their relationship to human freedom and anxiety. (3 crs.)

PHI 269. COMPUTERS & SOCIETY. Surveys the development of the logic and mathematics that led to computer technology. The student has hands-on experience on a terminal after having learned to write programs in the language called BASIC. (3 crs.)

PHI 270. *PHILOSOPHY OF MARXISM. Examines the basic texts of Marx and Engels and the subsequent development of Marxist philosophy. Attempts a critical evaluation in light of contemporary political philosophy. (3 crs.)

PHI 280. AMERICAN AESTHETIC EXPERIENCE. Includes a brief survey of painting, sculpture, and architecture, along with music and other fine arts. Discusses American theories of art as propounded by American philosophers, prominent artists, critics, and historians. Illustrated with color slides, films and appropriate music. (3 crs.)

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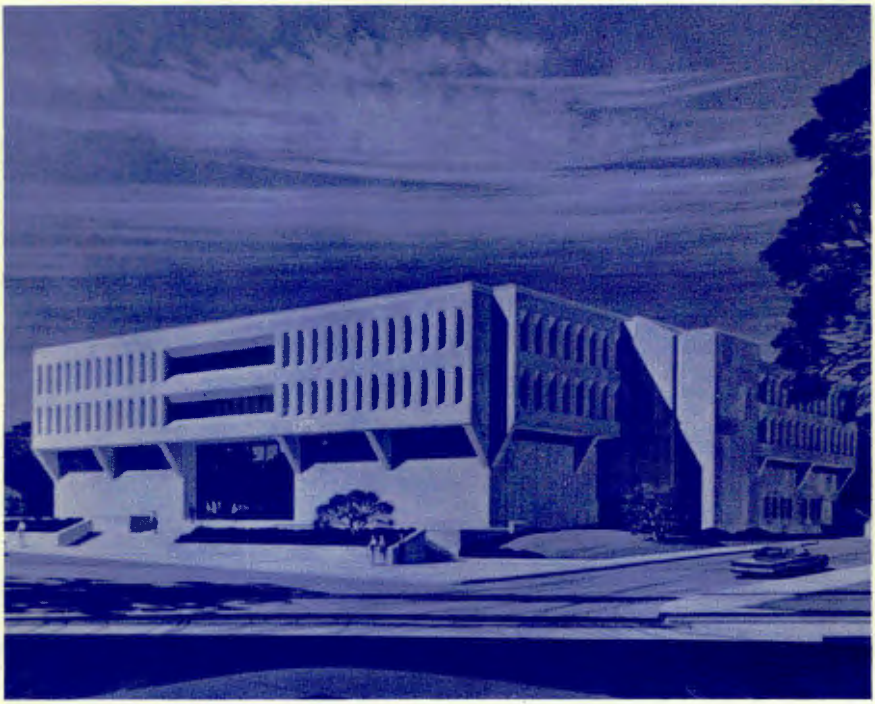

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Maurice E. Wilson, (1969) Professor; Psychology; Wofford College; M.A. College A & M; Ph.D. Emory University

Miriam J. Wilson, (1966) Assistant Professor; Music; B.S. California State College; M.A. West Virginia University

Myles B. Witchey, (1962) Associate Professor; Health and Physical Education; A.B. West Liberty State College; M.A. West Virginia University

Donald B. Wodock, (1966) Associate Professor; English; B.S. West Chester State College; M.A. Middlebury College

William D. Womsely, (1966) Professor; Social Science; B.S. Grove City College; M.A. University of New Mexico; Ph.D. University of Pittsburgh

Henrietta B. Wood, (1959) Assistant Professor; Art; B.A. Edinboro State College

Albert E. Yates, (1964) Associate Professor; Speech Pathology & Audiology; B.S. California State College; M.A. West Virginia University

Edward Zadorozny, (1962) Professor; Biology; B.S. University of Pittsburgh; M.S. University of Pittsburgh

Jay A. Zeffiro, (1970) Associate Professor; Social Science; A.B. Washington and Jefferson College; M.A. Duquesne University

George Zemo, Jr., (1957) Professor; Social Science; B.S. California State College; M.Litt. University of Pittsburgh

Angela K. Zondos, (1966) Assistant Professor; Special Education; B.S. Slippery Rock State College; M.A. Michigan State University

Robert L. Zoppetti, (1961) Associate Professor; Physical Science; B.S. California State College; M.Ed. Pennsylvania State University

FACULTY ADDITIONS IN 1976–77

Harold C. Babson, Jr., (1976) Associate Professor; Social Science; B.S. Northeastern University; M.B.A. Northeastern University; M.A. University of Pennsylvania

R. Michael Barber, (1976) Assistant Professor; Social Science; B.S. Ohio State University; M.S. Ohio State University; Ph.D. Ohio State University

William F. Blosel, (1976) Assistant Professor; Social Science; B.S. Penn State University; M.B.A. University of Pittsburgh

M. Arshad Chawdhry, (1976) Associate Professor; Social Science; B.S. West Pakistan Agricultural University; M.S. West Pakistan Agricultural University; M.A. University of Illinois; Ph.D. University of Illinois; M.A. University of Maryland; Ph.D. University of Maryland

Harold T. Hunter, (1977) Assistant Professor; B.A. University of Pittsburgh; M.S. West Virginia University

William G. Kimmel, (1976) Assistant Professor; Biology; A.B. Wilkes College; M.S. Penn State University; Ph.D. Penn State University

Robert T. Little, Associate Dean, School of Arts and Sciences; B.S. California State College; M.Ed. California State College

F. Mel Madden, (1976) Affirmative Action Officer; B.A. St. Anthony's on Hudson; M.A. Montclair State College; Ed.D. University of North Dakota

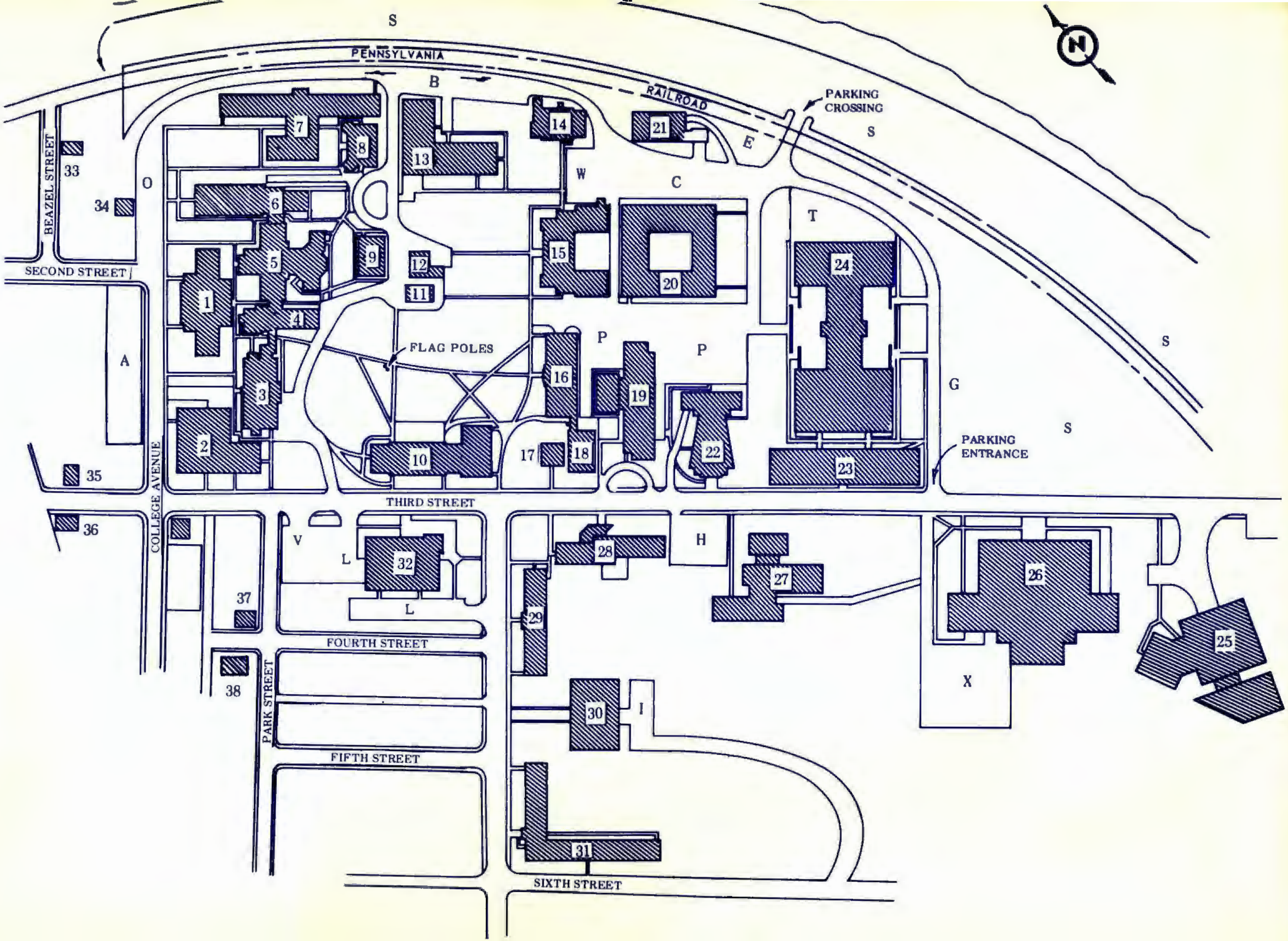
C. Allan Miller, (1976) Assistant Professor; Biology; B.S. Buena Vista College; M.A. Mankato State College; Ph.D. North Dakota State University

Krishan Nanda, (1976) Associate Professor; Urban Affairs; B.S. Panjab University, India; M.A. Panjab University, India; M.A. University of Minnesota; M.R.P. Harvard University; Ph.D. Columbia University

William A. Pakan, (1976) Associate Professor; Industrial Arts; B.S. Carnegie Mellon University; M.A. Kent State University; Ph.D. Kent State University

J. Wendell Ramey, (1976) Associate Professor; Social Science; B.S. Howard University; M.S.W. University of Pittsburgh

Roy M. Terry, III, (1976) Assistant Professor; Athletic Director; B.S. Western Maryland College; M.Ed. Colorado State University



PENNSYLVANIA
RAILROAD
PARKING CROSSING
PARKING ENTRANCE
FLAG POLES
BEAZEL STREET
SECOND STREET
COLLEGE AVENUE
THIRD STREET
FOURTH STREET
FIFTH STREET
SIXTH STREET
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SWAT THE ROCK