BULLETIN

catalog issue

1986-87

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Pueblo, Colorado
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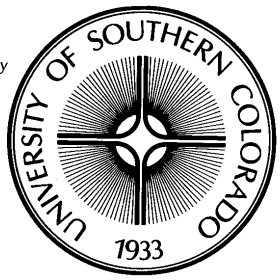
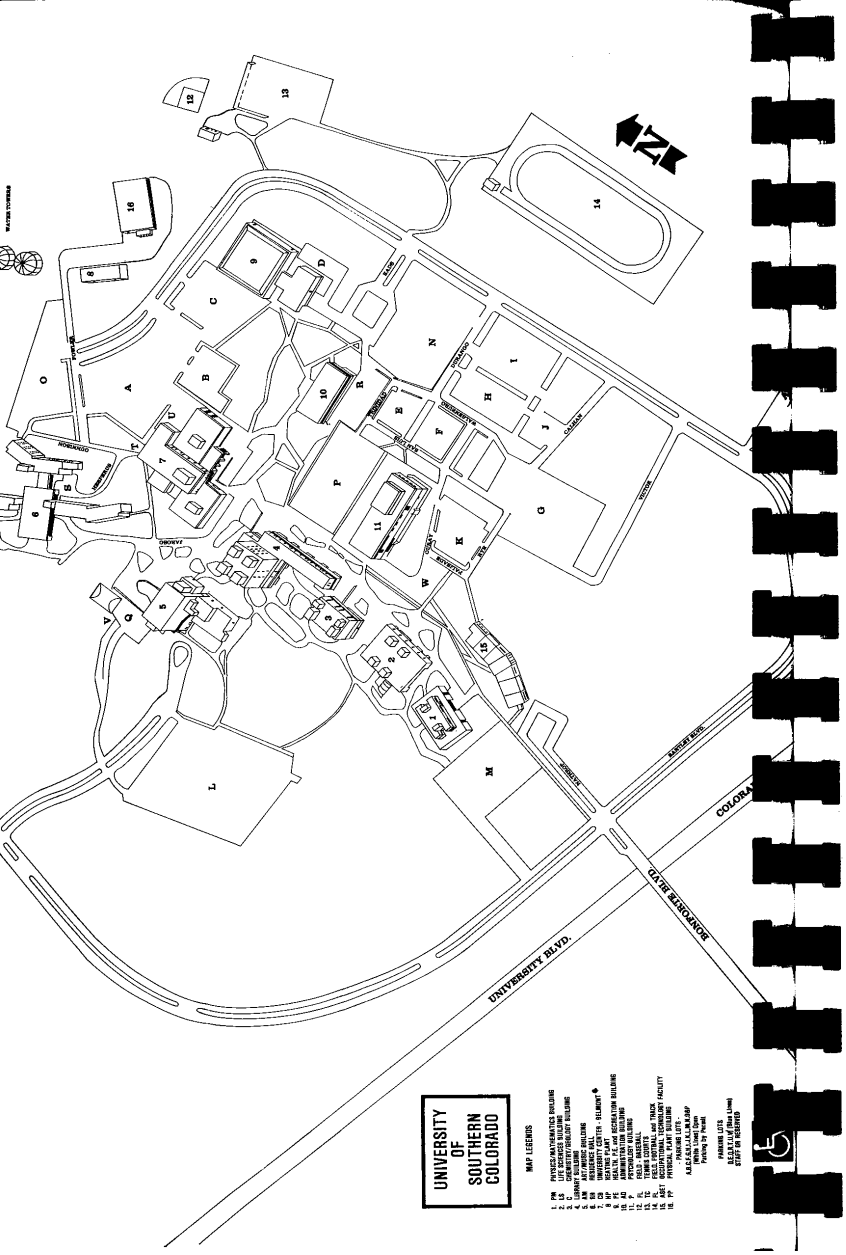
An Invitation

You are cordially invited to visit the University of Southern Colorado campus, meet members of the faculty and administration and inspect the facilities of the university. Escorted tours of the campus will be provided on request. The administrative offices are open from 8 to 5 o'clock Monday through Friday. Please call or write the Admissions office in advance of your visit.





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The bulletin

is authorized by the State Board of Agriculture and is published four times a year; once each in December, April, May and July. Second class postage paid at Pueblo, Colorado 81003 (Second Class Permit No. 857-100).

GOVERNANCE AND SUPPORT

The university, a state-supported institution, is governed by the State Board of Agriculture which also is responsible for the governance of Colorado State University and Fort Lewis College.

ACCREDITATION

The University of Southern Colorado is accredited at the bachelor's and master's levels by the Commission on Institutions of Higher Education of the North Central Association of Colleges and Schools.

Respective individual programs are approved by the following accrediting bodies:

Chemistry	American Chemical Society
Engineering Technology	Accreditation Board for Engineering and Technology
Education	National Council for Accreditation in Teacher Education; Colorado State Board of Education
Music	National Association of Schools of Music
Nursing	National League for Nursing
Bachelor of Social Work	Council on Social Work Education

NONDISCRIMINATION POLICY

The University of Southern Colorado, as an equal opportunity/affirmative action institution, is committed to full compliance with all federal laws, executive orders and state regulations pertaining thereto. The university does not discriminate on the basis of handicap, race, color, religion, national origin, age or sex in its employment or admission practices.

The university maintains a full-time Affirmative Action office on campus. Students, faculty, staff and community persons are encouraged to contact this office if they have questions or problems regarding affirmative action/equal opportunity matters. The affirmative action office monitors USC's responsibilities under applicable federal and state legislation and regulations, and administers an internal grievance procedure available for use by the university's constituents. The office is in Room 317A of the Administration building.

TERMS OF THIS CATALOG ISSUE

Students graduate under the requirements of the catalog noted on page 61 of this issue. The 1986-87 issue becomes effective fall semester, 1986. Information contained within the catalog is current as of April 1, 1986, but subject to change without notice and therefore is not to be regarded as an irrevocable contractual commitment. It may be changed at any time during the student's term of residence in the interest of lawful missions, processes and functions of the institution.

ACADEMIC CALENDAR 1986-87

Summer Session 1986

June 9 . . . . . Registration.
June 10 . . . . . 5 and 8-week sessions begin.
July 4 . . . . . Independence Day holiday.
July 15 . . . . . 5-week session ends.
August 1 . . . . . 8-week session ends.

Fall Semester 1986

August 26, 27 . . . . . New student orientation.
August 28, 29 . . . . . Registration.
September 1 . . . . . First day of classes.
September 16 . . . . . End of drop/add period. After this date students are legally liable for tuition and fees if they are registered.
November 26, 27, 28 . . . . Thanksgiving vacation.
December 1 . . . . . Classes resume.
December 15, 16, 17, 18 . Final examinations.
December 18 . . . . . Last day of the fall semester.

Spring Semester 1987

January 8, 9 . . . . . New student orientation.
January 12, 13 . . . . . Registration.
January 14 . . . . . First day of classes.
January 28 . . . . . End of drop/add period. After this date students are legally liable for tuition and fees if they are registered.
March 30-April 3 . . . . . Spring vacation.
May 4, 5, 6, 7 . . . . . Final examinations.
May 7 . . . . . Last day of spring semester.
May 9 . . . . . Commencement.

(This calendar is planned in advance and is subject to change)

THE UNIVERSITY

SCOPE AND HISTORY

The University of Southern Colorado, in accordance with its polytechnic role outlined by the Colorado Commission on Higher Education in 1978, provides a unique contribution to higher education in the state.

USC is an accredited institution with a dual purpose: 1) To emphasize career-oriented, technological and applied programs, while maintaining strong programs in the liberal arts; and 2) To function as the major educational resource for cultural, industrial and economic growth throughout the southeastern Colorado region.

As principal intellectual and cultural resource in southeastern Colorado, the University of Southern Colorado fosters cultural pluralism and provides equal access to all persons.

In addition to its thrust toward development of selected master's degree programs, USC continues to focus on high-quality undergraduate instruction through the Colleges of Applied Science and Engineering Technology, Professional Studies, Liberal and Fine Arts, Science and Mathematics and the Division of Extended Educational Programs.

The university presently is increasing involvement in basic and applied research and community services appropriate to the region, the state and the nation.

USC pledges to all ethnic groups, particularly the large Hispanic population within its service area, to provide access to higher education, to maintain and enhance the traditions of culture and language, to encourage the development of educational and employment opportunities and to provide appropriate academic support service.

In 1933, the school was incorporated as The Southern Colorado Junior College. Classes took place on the top floor of the Pueblo County Courthouse. The "Class of '35" graduated 17 students. In 1936, the first building began to take shape on an Orman Avenue campus site donated by the Colorado Fuel and Iron Corporation. One year later, local citizens decided to support the institution with county taxes, so they organized the Pueblo County Junior College District and the school was renamed Pueblo Junior College. In 1951, PJC became the first accredited junior college in Colorado.

A decade later, Colorado's General Assembly enacted legislation, effective in 1963, changing PJC to a four-year institution — Southern Colorado State College to be governed by the Board of Trustees of State Colleges. SCSC received accreditation in 1966.

By then, four new buildings had been erected on the new campus north of Pueblo's Belmont residential district. On July 1, 1975, the state legislature granted the institution university status. Three years later, the State Board of Agriculture assumed governance for the University of Southern Colorado.

USC recently celebrated its golden anniversary for 50 years of educational development. The campus now includes the University Library, Art/Music hall, Massari Gymnasium, University Center, Residence Hall, and buildings for Chemistry/Geology, Life Sciences, Physics/Mathematics, Psychology, Applied Science and Engineering Technology, Administration and the new Physical Plant.

All 13 buildings on campus, as well as fountains and pathways, follow the grand and unusual architecture of the University Library complex, which received a national award for design in 1966 from the American Institute of Architects and the U.S. Office of Education.

USC's majestic campus, spanning more than 800 acres, crowns the north end of Pueblo, Colorado, a friendly city of 100,000 people. Approximately 320 sunny days a year attract outdoor enthusiasts to a full slate of summer and winter recreational activities, encompassing water sports at Lake Pueblo, biking along Pueblo's unique river trails, hang gliding over the prairie to the east and skiing in the mountains to the west.

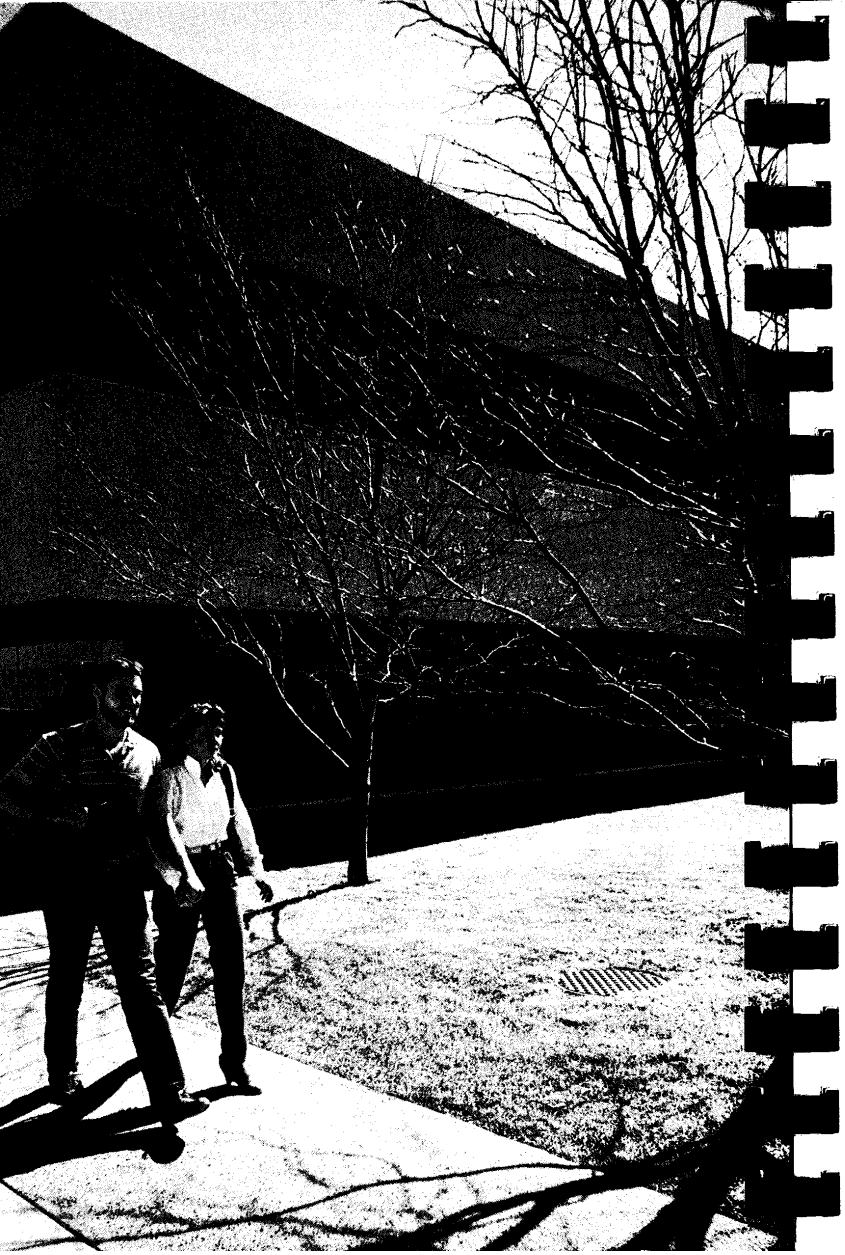
Enrollment approximates 5,000 students from throughout southeastern Colorado, the state, the nation and several foreign countries, representing a rich cultural mix of age groups and backgrounds, both rural and urban.

The institution's academic support services and active development of undergraduate and graduate employment opportunities exemplify USC's sincere commitment to its cosmopolitan student body.

Chief administrative officers of the institution have included Mr. E. T. Kelly, 1933-36; Mr. Leo R. Wren, 1936-39; Dr. Charles Haines, 1939-42; Dr. William A. Black, 1942-45; Mr. Marvin C. Knudson, 1945-64; Dr. J. Victor Hopper, 1964-71; Dr. Harry P. Bowes, 1971-77; Dr. Richard Pesqueira, 1977-79. Dr. Lyle C. Wilcox, 1980-84, and Dr. Robert C. Shirley, current president.

DEGREES OFFERED

The university is approved to grant the following degrees: bachelor of science (BS), bachelor of arts (BA), bachelor of science in business administration (BSBA), bachelor of science in electronics engineering technology (BSEET), bachelor of science in industrial engineering (BSIEN), bachelor of science in civil engineering technology (BSCET), bachelor of science in mechanical engineering technology (BSMET), bachelor of science in nursing (BSN); bachelor of social work (BSW), master of arts (MA) in industrial education; master of business administration (MBA).



ADMISSION AND RECORDS

Admissions office. The Office of Admissions is the visitors' center for the university. Prospective students may obtain information about all USC programs, as well as university admissions procedures, from the Admissions office. Campus tours are available from 9 a.m. to 4 p.m. Monday through Friday. Advance notice is helpful but not mandatory.

All correspondence about undergraduate admissions and campus visits should be addressed to the Office of Admissions, USC, Pueblo, CO 81001-4901.

Application deadlines. Application for admission as a degree-seeking student and all other required documents must be received before the deadline of the semester in which the student plans to enter. Deadlines for 1986-87 are:

Fall Semester 1986	July 18, 1986
Spring Semester 1987	November 28, 1986
Summer Session 1987	May 1, 1987
Fall Semester 1987	July 20, 1987

ENTERING FRESHMEN

CCHE standards. The State of Colorado and the Commission on Higher Education are developing admission standards for all colleges and universities. The new standards will be implemented from 1986 through 1989, but are not available for publication at this time. Contact the Admissions office for further information.

Admission requirements. Colorado residents who are high school graduates or the equivalent, and non-Colorado residents who are high school graduates and rank in the upper two-thirds of their graduating class, may be considered for admission to USC.

Students may apply at any time after the junior year in high school. One official transcript of high school work should be sent with each application, and a final transcript must be submitted after the applicant graduates from high school. Students who apply on the basis of the General Education Development (GED) tests in place of high school graduation must have the state agency issuing the GED forward the test scores (not the certificate) to the Office of Admissions.

Applicants for admission must submit:

1) a completed USC application;
2) a $10 application fee (nonrefundable and not applicable to tuition);
3) an official transcript of high school records;
*4) ACT or SAT scores; and
5) the Student Health Statement.

*NOTE: It is the applicant's responsibility to arrange for the scores to reach the Admissions office directly from ACT or the College Board (SAT). **Scores on transcripts or student copies are not acceptable.** Applicants are not admitted to degree-seeking status unless their official ACT or SAT scores are on file. Acceptance by the university does not necessarily mean acceptance into a particular department or program. Some departments have admission requirements beyond those of the university.

Advanced placement. The university recognizes superior high school achievements by granting advanced placement to students who have taken especially enriched or accelerated courses before entering college. The university participates in the Advanced Placement program of the College Entrance Examination Board. For advanced placement scores of 3, 4, or 5, the student will be awarded 6.5 semester credits. Questions about advanced placement credit should be addressed to the Office of Admissions.

TRANSFER STUDENTS

Students who have attended other colleges or universities and are seeking admission for the first time must file with the Office of Admissions an application for admission and $10 application fee. They also must make certain that each institution attended sends an official transcript of record to the director of Admissions at USC. Students who have completed 20 or more semester hours at another institution are not required to submit ACT or SAT scores.

Transferring students must be in good standing at the institution they last attended. If not, their records will be reviewed and a decision on their admission will be made by the director of Admissions.

Students who are enrolled at another institution at the time they apply for admission to USC should arrange to have one transcript from that institution sent with the application. A final transcript should be sent when they complete the current term.

Transferred credit will be evaluated as soon as possible after official transcripts of all work have been received and the student's admission file is complete.

Each student must indicate all previous college experience on his or her application. Applicants may not ignore previous college attendance. Students who fail to inform the Office of Admissions fully of previous college work may be subject to disciplinary action, including dismissal.

Students seeking graduate admission should contact the Office of Research and Graduate Studies.

Transfer of credit. Credit is accepted by USC from accredited institutions recommended by the American Association of Collegiate Registrars and Admission Officers. USC accepts a maximum of 64 semester hours from junior colleges and/or a maximum of 96 semester hours from senior colleges for credit toward degree requirements. A maximum of 96 semester hours will be accepted in transfer toward degree completion at USC. Grades of D and F are not accepted.

Credit from a nonaccredited institution may be accepted for transfer after the student has completed at least 24 semester hours at USC with a C (2.0) average or better. A petition is required.

The university accepts up to eight semester hours of cooperative education courses in transfer. Cooperative education coursework, to be acceptable, must include a clearly defined academic element, such as a study plan or reading assignments.

Acceptance of credit does not necessarily mean that a specific department will accept the same credit toward its major requirements. Each department evaluates transfer credits to determine whether or not they apply to major requirements.

Transfer students should be aware of the 12-year time limit on credit earned toward a bachelor's degree, which applies to both transfer and resident credit. (Further information appears in the Academic Policies section of this catalog.)

All application materials for applicants who decide not to enroll for the term for which they applied will be kept on file in the Office of Admissions for one year before they are destroyed.

College Level Examination Program. All credit earned by the student on one of the CLEP general examinations and recorded on the student's transcript from another institution is accepted in transfer, if the credit is not duplicated from other sources. If CLEP credit is transferred directly, only credit in the areas of humanities and social science is accepted. If a student has taken humanities or social science classes before taking CLEP tests, those credits are deducted from the CLEP credits.

A maximum of 30 hours of correspondence and/or extension work is counted toward a bachelor's degree.

Military service credit evaluation is processed when official copies of certificates are received at USC. Courses are evaluated according to the American Council on Education Guide. A maximum of 20 semester hours of credit is accepted. Credit is not given for military service work experience.

Minimum expectations for transfer students. The following table indicates the minimum grade point averages which students must have to be accepted as transfer students. Students who do not meet these standards may not be accepted.

Hours attempted	Cumulative grade point average
1-15	1.50
16-30	1.60
31-45	1.75
46-60	1.90
61 and above	2.00

INTERNATIONAL STUDENTS

Before a student who is a resident of another country can be admitted to USC, he or she must submit the following items:

1) The official application for university admission, accompanied by a $10 fee;

2) Two official transcripts of all work completed either in high school or in college (or the equivalent). One transcript must be in the native language, one in English. Both must show courses taken, grades earned, length of classes and length of school terms. All transcripts must bear the official seal of the issuing institution and must be sent by that institution directly to the Office of Admissions. An explanation of all transcript terminology must be included;

3) Results of an English language proficiency test. **First-time freshman students:** A score of 500 on the Test of English as a Foreign Language (TOEFL) or a minimum score of 80 on the Michigan Test of English Proficiency, or completion of the advanced level at an English language training center is required. **Transfer students:** A score of 500 on the Test of English as a Foreign Language (TOEFL) or a minimum score of 80 on the Michigan Test of English Proficiency is required. In addition, transfer students must have an overall cumulative grade point average of 2.00 or above. English language proficiency tests are not required of students from countries where English is the native language.

4) A financial statement regarding the resources available to the student during his or her stay in the United States. An international student cannot be accepted without this statement, since there are no institutional funds available to support international students; and

5) The Student Health Statement. This statement must be completed and returned to USC before the university issues an I-20 form.

The Office of Admissions reserves the right to consider policy changes. Exceptions are at the discretion of the Director of Admissions.

No international student applications for admission can be considered until all required materials are complete. All materials must be received by the Office of Admissions by the application deadlines listed on page 9.

For English language training, see the American Language Academy, page 45.

READMITTED STUDENTS

Students who have been enrolled in residence, but whose attendance was interrupted for one or more regular semesters, are required to file an application for readmission by the Admissions deadline of the semester the student wishes to enroll. A student who withdraws, or is withdrawn, from the university and is subsequently readmitted after an absence of two or more semesters, is governed after readmission by the catalog current at the time of readmission. Any exceptions to the policy must have prior approval. Degree-seeking students who, while absent from USC, have attended other collegiate institutions or have taken college-level correspondence or extension courses must provide complete official transcripts of such studies.

The application fee is not required of undergraduates who have formerly attended the university as degree-seeking students.

UNCLASSIFIED STUDENTS

Unclassified status is reserved for applicants who wish to enroll in courses without degree-seeking status. Applicants who wish to register as unclassified are required to file an application with the Office of Admissions.

Unclassified status is intended for students who have already received a college degree and desire a course or two:

1) to satisfy a special interest or curiosity;

2) to update career knowledge base; or

3) to become familiar with college-level work.

Some students may register as unclassified at the beginning of their USC program because of an incomplete admission file. Such students are urged to complete their files and become classified as soon as possible.

A full load (12 semester hours or more) may be carried by an unclassified student during the first semester at the university. Students attempting to register for a full load for a second consecutive semester are required to justify their unclassified status to the Office of Admissions. It should be noted that unclassified students are ineligible to receive financial assistance from the university. This includes all federal and state financial assistance programs. Only degree-seeking students (classified) are eligible to receive financial assistance from these programs.

VETERANS

Veterans who served on active duty for more than 180 continuous days, any part of which occurred after January 31, 1955 and before January 1, 1977, and who a) were released under conditions other than dishonorable, b) were discharged for a service-connected disability or c) continue on active duty, are eligible for educational benefits under the Veterans Readjustment Benefits Act of 1966, as amended.

Veterans must follow the admission requirements and procedures outlined in this catalog. For certification of eligibility for education benefits under one of the public laws, students can apply for Veterans Administration benefits through the Office of Veterans Affairs, Room 310 in the Administration building.

HIGH SCHOOL UNIVERSITY PROGRAM

High school seniors may register for classes at the university and receive college credit applicable toward a degree. This credit is not intended to be applicable toward high school graduation requirements.

Students interested in participating in the High School University program should obtain an application for admission as a special student from the Admissions office. The application must be approved by the student's counselor, high school principal and parents for each term the student wishes to enroll.

In some cases, the student's high school district may pay the university tuition but not other expenses. High school counselors have information about the availability of this program.

ADMISSION TO SPECIFIC PROGRAMS

Because the university receives more applications than it can honor in certain programs, an admissions evaluation is used.

The USC admissions evaluation is designed to promote diversity within the student population in those disciplines where restrictions are necessary and to assure equal opportunities to all applicants. The final admission decision is based on each student's potential for attaining a degree in the discipline in question and takes into account the student's past academic performance, aptitude test scores, leadership qualities, citizenship, principal/counselor recommendations, geographic residence, economic status, ethnic origin and racial background.

The guidelines provide for affirmative action to locate and identify a pool of applicants drawn from the entire population of Colorado.

REGISTRATION

Advisement. All students are required to consult an academic adviser before registering for classes. Academic advisers are assigned by the major area. Degree-seeking students who have not selected a major and unclassified students should contact the Office of Career Counseling and Placement, Room 309 of the Administration building.

Registration procedures. Details on registration procedures are published in the semester bulletin distributed to students well in advance of each registration period.

Payment of tuition and fees. Tuition and fees are assessed after the semester has started at the end of the drop/add period. Instructions for payment and payment deadlines are publicized before the beginning of each semester. Specific information about tuition and fees is given in the Student Expenses section of this catalog.

Changes of address. Students should keep university authorities informed of their current addresses. Change in address should be reported immediately to the Office of Registration and Records.

Completion of student courses. The university holds students responsible for completing all courses for which they have enrolled unless they obtain approval for a change in registration or file an official withdrawal. Students not following proper course or university withdrawal procedures receive failing grades.

STUDENT EXPENSES

Tuition rates are set by the State Board of Agriculture following budget action of the Colorado General Assembly. Tuition rates for any succeeding fiscal year are not known until the period of March to June of each year, when appropriations are made. The State Board of Agriculture therefore reserves the right to change the tuition and fees schedule at any time.

All students under age 65 who are registered are eligible to participate in a student insurance program. The insurance plan is not a part of the student's tuition or fees. Pamphlets explaining the insurance coverage and the enrollment forms are available in the Student Health Services office located in Room 004 of the University Center.

Colorado in-state classification for tuition purposes. A person moving to Colorado must be domiciled in the state for 12 continuous months before he/she is eligible for a change in residence classification. To qualify for in-state classification for tuition purposes as a resident of Colorado, a person must do more than just reside in Colorado for the preceding 12 continuous months. "Residency" in this context means legal "domicile," which requires intent to remain in Colorado indefinitely in the sense of making one's permanent home in the state. The distinction is that one may have any number of residences at one time, but never more than one domicile.

A particularly relevent point is that one retains his/her former domicile until a Colorado domicile is established by the 12-month residency.

Intent is determined by:

1) the student's written declaration of his/her intent to remain in Colorado indefinitely, i.e., he/she has no present intent to leave the state now or in the future, and

2) documented evidence of the student's overt actions that link him/her to Colorado.

Examples which establish intent are: payment of Colorado State Income Tax; a Colorado driver's license; payment of personal property or real estate taxes (especially on a personal residence) in the state; the compliance with any law imposing a mandatory duty upon a domiciliary of the state, and voter registration. Obviously, the specific actions that establish intent vary according to the individual and the circumstances, but each individual must, with his/her circumstances, act consistently with the stated intent. An informational brochure pertaining to the establishment of residency for tuition purposes may be obtained by writing to the Office of Admissions.

A student's classification as a Colorado resident for tuition purposes is made by the university at the time of admission, according to Colorado statutes. Any student classified as a non-resident who believes that he/she can qualify as a resident may obtain a petition and a copy of the statutes governing tuition classification from the Office of Admissions. The petition is processed only if the student has an application for admission on file or is currently enrolled. The petition is due no later than the established deadline of the drop/add period for the semester in which the change is requested. Deadlines are published in each semester class bulletin.

Students 21 years of age or under who are independent from their parents must prove emancipation and demonstrate residency on their own qualifications. Students must notify the Office of Admissions if their status changes from resident to nonresident. Any student who willfully gives wrong information to avoid paying nonresident tuition is subject to legal and disciplinary action.

TUITION AND FEES

The following schedule of tuition, fees and other charges is for information only. All fees and charges listed are **subject to change** because of action by the governing board prior to the beginning of semester. Tuition and fees per semester for 1985-86 were as follows:

Resident

No. of hours	Tuition	Fees	Total
1	$ 52.00	$ 15.00	$ 67.00
2	104.00	15.00	119.00
3	156.00	15.00	171.00
4	208.00	15.00	223.00
5	260.00	15.00	275.00
6	312.00	56.00	368.00
7	364.00	65.50	429.50
8	416.00	110.00	526.00
9	468.00	110.00	578.00
10-18	498.00	110.00	608.00
Tuition surcharge for each hour over 18			$ 33.00

Non-resident

No. of hours	Tuition	Fees	Total
1	$ 167.00	$ 15.00	$ 182.00
2	334.00	15.00	349.00
3	501.00	15.00	516.00
4	668.00	15.00	683.00
5	835.00	15.00	850.00
6	1002.00	56.00	1058.00
7	1169.00	65.50	1234.50
8	1336.00	110.00	1446.00
9	1503.00	110.00	1613.00
10-18	1975.00	110.00	2085.00
Tuition surcharge for each hour over 18			$ 132.00

OTHER SPECIAL FEES

Original student/faculty/staff identification card	$ 3.00
Identification card replacement	5.00
Faculty/staff identification card validation	8.50
Fee to activate placement file — per packet	2.00
General Education Development tests — battery	20.00
Guaranteed student loan processing fee	10.00
Parking permit (per year)	12.00
Parking permit replacement	2.00
Returned check charge	15.00

Physical education fee — designated classes per semester

Bowling	20.00
Scuba Diving	55.00
Windsurfing	35.00
Ice Skating	20.00
Training Room	25.00

ROOM AND BOARD RATES

(Subject to change by governing board action)

Occupancy and damage deposit $100

This deposit is required with each application for space in the residence hall. The deposit is held for the duration of occupancy.

Room (per semester)

Single $875

Double $585

Board (per semester) ..... 19-meal plan $772

..... 14-meal plan $745

..... 10-meal plan $716

Room and Board (8 week summer session)

Double Room $294

10-meal plan $300

15-meal plan $321

PAYMENT OF STUDENT ACCOUNTS

Tuition and fees are calculated according to the number of hours for which a student is officially registered at the end of the drop/add period of each semester. Students are billed by mail at their local addresses. **It is imperative that the address on file with the Office of Registration and Records be correct,** since the billing is mailed to that address. Students may make payment by mail or in person. Payment should be made by the date specified on the bill. If payment is not received by the date due, a late payment fee is charged, as follows:

Amount owed	Late payment fee
$ 25.-$ 99.99	$10
$100.-$299.99	$15
$300.-$499.99	$20
$500.-$699.99	$30
$700.-$899.99	$40
$900. and over	$50

NOTE: A student is subject to withdrawal and to denial of credit if financial obligations are not satisfied in accordance with university policies.

ADDITIONAL PAYMENT PROCEDURES

Additional payment procedures are publicized before the beginning of each semester. The procedures described include the distribution of financial aid, payment due date, administrative withdrawal for non-payment and refund policies. This information is contained in the class schedule or financial information supplement. For specific payment procedures consult the class schedule.

DELINQUENT STUDENT ACCOUNTS

Any student who does not pay his/her tuition and fee charges for the current semester **will not** receive grades and will not be permitted to register for the subsequent semester.

STUDENT FINANCIAL AID

Financial aid is a means through which students, or students and their families, who apply and qualify for aid, can receive assistance through grant, loan, work-study or scholarship funds to help defray the costs of higher education. All financial aid awards are contingent upon availability of funds. Students may obtain applications and other necessary forms from the Office of Student Financial Aid, Room 319 of the Administration building.

The primary responsibility of paying for education rests with students and their families; the aid offered by the university is intended only as supplemental. Because the requests for funds always exceed the money available, and because federal monies always are related to documented financial need, USC requires students to follow the instructions for applying for aid outlined in the Student Financial Aid Handbook available in the Office of Student Financial Aid.

Philosophy of aid. Financial aid at USC is based on documented financial need and academic success, either predicted or achieved. Students may establish financial need by completing all forms required by the Office of Student Financial Aid.

Academic success is measured in the following ways:

Entering freshmen — A combination of high school rank, grade-point average and admissions test scores (ACT or SAT) is considered.

Continuing and/or transfer students — The cumulative grade-point average computed by the Office of Registration and Records or the Office of Admissions is considered, as well as the number of credit hours completed per semester.

When to apply — priority dates. All applicants for financial aid for the 1986 summer session and for the 1986-87 academic school year should have applied by March 15, 1986. Applicants for aid for the 1987 spring semester only, should apply by November 1, 1986.

Students whose applications are not complete (including the Financial Aid Form Need Analysis Report from the College Scholarship Service or the Comprehensive Financial Analysis Report from the American College Testing Program, Form 1040's and additional documentation) by the established priority dates are considered on a funds-available basis when their applications are complete. Funds are awarded with consideration for high need first, then moderate to low need.

Requirements for processing an application. In order to have an application processed and to be considered for financial assistance, the student must:

1) Be admitted to USC as a degree-seeking (*classified*) student;

2) Have a completed application; and

3) Be in good standing and be a degree-seeking (*classified*) student making satisfactory progress toward graduation.

A student *may not* receive financial aid if he or she:

1) Is not registered for the required number of credit hours as stated on the application. (12 hours minimum, preferably 16);

2) Is not in good standing making satisfactory progress toward an undergraduate degree;

3) Is on financial aid or academic suspension;

4) Is in default on loans or owes repayments on grants previously received to attend USC or other institutions;

5) Is not a citizen or permanent resident of the United States.

Good standing. Students are considered to be in good standing for financial aid purposes if they are eligible to be enrolled in accordance with the guidelines established by the university and the Office of Student Financial Aid.

Satisfactory academic progress. To receive financial aid, students must be classified and must make continued academic progress toward a degree. Compliance with federal, state and University of Southern Colorado scholastic regulations is required.

Because of funding limitations, full-time students receive priority for financial aid. Full-time students must complete an average of at least 12 credit hours with passing grades each fall and spring semester that financial aid is received. (F is not considered passing.) If the student attends summer session, at least 6 credit hours are required to maintain full-time status.

Satisfactory progress is determined with consideration to both the grade-point average and the number of credit hours completed. Both full-time and nonfull-time students must have a minimum cumulative grade-point average as follows:

Total attempted credit hours	Cumulative grade-point average
1-24	1.60
25-48	1.80
49-72	2.00
more than 72	2.00

The table above applies retroactively to the nonfull-time student who is requesting financial aid, whether or not the student was receiving aid when the grades were earned.

Length of funding. Financial aid may be available for up to a maximum of 12 semesters for students who pursue bachelor's degrees. Bachelor degree candidates who require more time may appeal for continuation of funding through the Office of Student Financial Aid.

The above policies and procedures are in accordance with USC's efforts to recruit more non-traditional, minority and multi-cultural students. Students on academic suspension cannot be considered for financial aid.

Financial aid probation/suspension. Recipients who do not meet the above-stated requirements are subject to financial aid probation and/or suspension, which may be appealed through the Office of Student Financial Aid. Each recipient does have a responsibility to obtain a copy of the Financial Aid Satisfactory Academic Progress Policy booklet.

Students suspended from financial assistance may, depending upon individual circumstances, enroll at the university at their expense if they are not on academic suspension.

The director of Student Financial Aid, at his/her discretion, can approve financial aid for a student on a "continued probation status" for one additional semester provided the student has improved his/her grade-point average (GPA) and completed at least 12 hours during the semester in question. The student must contact the director for a counseling session.

Monitoring is conducted at the end of each spring and summer semester, using information from the Office of Registration and Records.

Continued eligibility. Financial aid is not renewed automatically from one academic year to the next. Students must reapply annually before the established priority dates to ensure continued consideration. Students receiving aid must re-establish eligibility annually by submitting new financial aid applications and meeting the criteria for good standing and satisfactory academic progress. New awards are based on documented financial need and availability of funds.

For more detailed information on financial aid policies, refer to the Financial Aid Handbook or contact the Office of Student Financial Aid.

FINANCIAL ASSISTANCE PROGRAMS

GRANTS

Pell Grant (formerly BEOG). The Pell Grant is a federal program which entitles the student to receive a grant up to a maximum of $2100, but not more than 60 percent of the actual cost of attendance for a full academic year. The amount of the grant, however, depends on the level of funding authorized by the federal government.

To be eligible for a Pell Grant, a student must be accepted for enrollment or must be a continuing student in good standing. Graduate students and students already holding a bachelor's degree are not eligible. To receive consideration for a full Pell Grant, students must be enrolled for at least 12 credits per semester. The awards of students enrolled for fewer than 12 credits but at least six credit hours are pro-rated according to the current academic load. Students must apply each year. Normally the period of eligibility is extended to the period required for completion of the first baccalaureate course of study. Applications may be obtained from high school counselors or from the Office of Student Financial Aid, and should be completed according to instructions.

All students who are applying for financial assistance and are eligible to apply for a Pell Grant must do so and submit a copy of the Student Aid Report (SAR) to the Financial Aid office whether qualified or not.

Colorado Student Grant (CSG). The CSG is awarded to undergraduate residents on the basis of financial need. Stipends attached to the award are usually not greater than $1500 an academic year and generally will not exceed one-half the documented financial need.

Supplemental Educational Opportunity Grant (SEOG). The SEOG is a form of non-repayable financial aid and is designed to assist undergraduate students with need. Awards may not exceed $2000 per year.

State Student Incentive Grant (SSIG). The SSIG is awarded to undergraduate resident students on the basis of financial need. To be eligible, an individual must document a minimum of $900 need for the academic year. Awards vary from $200 to $2000 per year, depending on the amount of need.

College Work-Study Program (CWSP). The CWSP is designed primarily to provide jobs to students who, without the earnings from the employment, could not attend the university. The program is funded by both the federal government and the state of Colorado. The university annually employs some 400 to 600 students in the work-study program. When possible, employment is arranged in the student's major area of interest. The average work-study award for freshmen and sophomores is $1000, for juniors and seniors, $1500. The average wage rate for work-study students is approximately $3.70 per hour. Earnings are paid by check on the 15th of each month. Students in the Work-Study Program assume responsibilities appropriate to an employee/employer relationship; failure to do so may result in the appropriate loss of the work-study award.

WORK-STUDY

Full-time work-study. Full-time work-study is a summer program designed to provide students with employment during the summer. It is expected that some of the earnings from the employment will be used to offset the next academic year's educational costs.

To be eligible, students must:
1) Enroll at the university for the next academic year as a degree-seeking (classified) student:
2) Document financial need for the next academic year;
3) Complete separate applications for the summer full-time work-study and for the next academic year by the specified priority dates;
4) Save a major portion of their earnings to assist with next year's educational expenses and
5) Forego enrollment in summer classes, if awarded full-time work-study.

No-need work study. The no-need work-study program is funded by the state of Colorado. To be eligible, students must be undergraduate Colorado residents. The no-need program is a limited program for students who have specified work opportunities on campus which will provide valuable academic and/or professional experience. Students must possess a skill or talent which is of use in a specific university position, or demonstrate financial need which cannot be documented in the normal fashion.

Students are selected for this program on the basis of their qualifications and the amount of funds available. The average no-need work-study award for the academic year is $1500. Students must apply for need-based financial aid and must be found not eligible in order to qualify for the no-need program. They must complete either the College Scholarship Service Financial Aid Form or the American College Testing Program Family Financial Statement. Students should not assume that they will be found ineligible for need-based financial aid. Those who are declared ineligible, however, may qualify for a no-need financial aid opportunity.

LOANS

National Direct Student Loan (NDSL). A NDSL is a low interest (5 percent) loan to help students pay for their post-education.

A student may be eligible to borrow up to a total of:

— $3,000 if he/she is enrolled in the first two years of a degree program, or has completed less than two years of a program leading to a bachelor's degree;

— $6,000 if he/she is an undergraduate student who already has completed two years of study toward a bachelor's degree and has achieved third-year status (total includes any amount borrowed under NDSL for the first two years of study);

— $12,000 for graduate or professional study (total includes any amount borrowed under NDSL for undergraduate study).

Repayment of the loan begins six months after the student graduates or leaves school. A student may be allowed up to 10 years to repay the loan. The amount of payment depends upon the size of the debt, but usually is in payments of at least $50 per month. The school may agree to a lesser amount because of extraordinary circumstances such as prolonged unemployment.

In case of default on an NDSL which the school is unable to collect, the federal government may take action to recover the loan.

A former student may defer payment for up to three years while serving in:

1) The armed forces;

2) The commissioned Corps of the Public Health Service, or

3) The Peace Corps, VISTA, or a comparable organization.

Payments may be deferred for up to three years if a doctor certifies that the former student or his/her spouse is unemployed due to a temporary total disability.

A student may defer payments for up to two years while serving an internship required before professional practice.

A student may defer payments for a single period of up to one year while actively looking for a full-time job.

Payments may be deferred for periods of at least half-time study at an eligible school, for study in an approved graduate program and for study in an approved rehabilitation program for the disabled.

Repayment may be deferred for six months after the end of any of the above periods.

Loan cancellation provisions are available for borrowers who teach handicapped children or who teach in designated schools. If the borrower dies or becomes totally and permanently disabled the loan obligation will be cancelled.

Questions about the terms of loan, repayment obligations, deferment or cancellation should be referred to the Office of Student Financial Aid or to the Accounting office.

Guaranteed Student Loan (GSL). A Guaranteed Student Loan (GSL) is a low interest loan made by a lender such as a bank, credit union or savings and loan association to help pay for post-secondary educational expenses. The loans are insured by either the federal government or state guarantee agency. The interest rate for borrowers is currently eight percent, and all subsequent loans to those borrowers will be at eight percent plus a five percent origination fee.

An undergraduate can borrow up to $2,500 a year. A graduate student can borrow up to $5,000 a year (In some states these amounts may be less.)

The total GSL debt allowed to be outstanding for an undergraduate is $12,500; the total for graduate or professional study is $25,000 (including any outstanding undergraduate level GSL loans).

A GSL application may be obtained from a private lender, The Office of Student Financial Aid or from a guarantee agency. After the application is filled out, USC must complete the section which certifies enrollment, the cost of the education, academic standing and any other financial aid received. If a borrower is placed on financial aid suspension, the bank will be notified.

PLUS loans. PLUS loans are meant to provide additional funds for post-secondary educational expenses. The interest rate for PLUS loans is 12 percent. Like GSL's they are made by a lender such as a bank, credit union, or savings and loan association.

Parents of dependent undergraduate students may borrow up to $3,000 per year.

Graduate students may borrow up to $3,000 per year.

Independent undergraduates may borrow up to $2,500 per year. However, the PLUS loan, combined with any GSL the undergraduate also may have, cannot exceed the yearly and total GSL undergraduate limits.

A borrower must begin repaying a PLUS loan within 60 days. The same deferment conditions available to GSL borrowers also are available to PLUS borrowers. Thus, borrowers who are full-time students or on active duty in the military, for example, are entitled to a deferment of principal payments. Parent borrowers are not granted deferments based on the status of the student for whom the parent borrowed. All borrowers must begin paying the interest within 60 days, unless the lender has agreed to allow the interest to accrue until the deferment ends.

For additional information students should contact: Colorado Student Loan Program, 11990 Grant Street, Suite 500, Northglenn, Colorado 80233, or telephone (303) 450-9911.

Short-term loan. Short-term loans are intended only for those financial emergencies that present extreme hardship cases which could not reasonably be foreseen and which seriously threaten the continuation of a student's education at the University of Southern Colorado. The maximum loan a student may have at one time is $100. Students must be currently enrolled for at least 12 semester credits, must not be on disciplinary probation or financial aid suspension and must not have an unpaid university account. Short-term loans will not be made at any time when school is not in session.

Loans are to be repaid within a short period of time (normally within 60 days). The student and financial aid counselor determine a definite due date acceptable to both. If the loan has not been repaid or arrangements made for its repayment by the due date, the delinquent loan will be treated as an overdue student account and handled in accordance with university policy. Applications for short-term loans are available in the Office of Student Financial Aid. Foreign students are eligible to apply. There is a $3 fee assessed for processing the paper work.

SCHOLARSHIPS

USC President's Scholarship. The President's Scholarship is designed to provide recognition for outstanding academic performance and talent (art, music, drama, speech, special skills) and is awarded to undergraduate Colorado residents who are graduates of Colorado high schools, junior college transfer students or continuing students at USC. The stipend is $800 per academic year.

Freshmen recipients are selected on the basis of high school grade-point average, class rank, and Scholastic Aptitude Test or American College Test scores. All others are selected on the basis of the cumulative GPA. These parameters may vary from year to year and are dependent on the availability of funds. Recipients of the scholarships are selected by a special committee. Currently enrolled USC students must complete 24 semester credits per year (Courses graded S/U are not included). Renewal of the scholarship is based on the student's cumulative grade-point average at the end of each semester. The award cannot be used for more than eight academic terms or beyond the time that the bachelor's degree is awarded.

Awards to out-of-state students. A portion of the undergraduate scholarship funds can be awarded to non-resident (out-of-state) students provided they meet all established criteria.

Private scholarship program. The University of Southern Colorado Foundation administers many scholarships awarded by corporations, businesses, foundations, individuals and other private sources. A few examples are the Steinhardt Pre-Med, Sundstrand, Colorado Masons and Boettcher scholarships. Various scholarships also are given by local groups, service clubs, cultural societies and similar organizations. Additional awards are made by university departments out of funds deposited with USC Foundation. Still other awards, for designated scholarships such as the Crouch and Seelig, are made by the USC scholarship committee. Information about most scholarships is available at the USC Foundation office, 317C Administration building, phone 549-2380, and high school counselors.

The following procedure has been established for scholarship disbursements out of the USC Foundation each semester:

1) Foundation checks payable to each recipient AND the university are placed with the USC cashiers, Administration building.

2) After the drop/add period ends, bills for tuition, fees and other charges are prepared and mailed to all students.

3) When scholarship recipients receive their bills, they should report to the cashiers to endorse checks and have their accounts credited.

4) When all charges are cleared, any surplus remaining from the check will be paid to the recipient if so allowed by the donor.

Questions about private scholarships may be directed to the USC Foundation.

ADDITIONAL ASSISTANCE PROGRAMS

Student employment services. The Office of Student Financial Aid provides a job locater and development (JLD) program. The program is designed to encourage the development and expansion of off-campus part-time employment opportunities for all students, regardless of financial need. The purpose of the JLD program is to provide every student who desires employment a reasonable opportunity to find it. Registration cards for the JLD program can be obtained in the Office of Student Financial Aid.

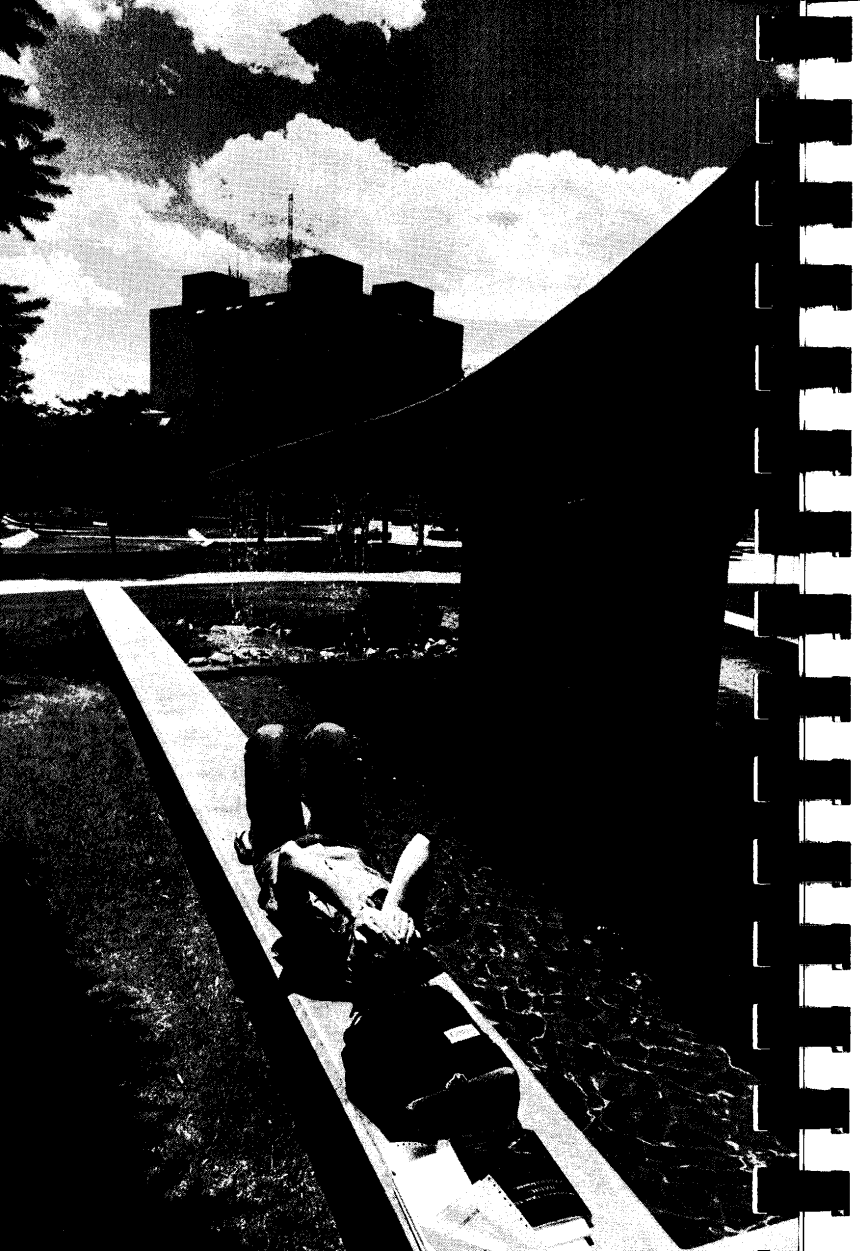
Veterans' benefits. All students who expect to receive veterans' or dependents' education assistance from the Veterans Administration are required to register with the veterans' adviser on campus at the start of each academic year and, if enrolled, before summer session. The university participates in the advance pay system. Education loans of up to $2500 per year are available through the Veterans Administration. Certain Colorado resident veterans with active duty between August 5, 1964 and August 5, 1973, are eligible for a partial tuition waiver. Veterans must supply the original copy of the DD214 form to the Office of Veterans' Affairs, Room 310 of the Administration building, for determination of eligibility.

Bureau of Indian Affairs. Students who are at least one-fourth American Indian, Eskimo or Aleut, as recognized by a tribal group served by the Bureau of Indian Affairs, may apply for a BIA grant. The amount awarded is based on financial need and availability of funds from the area agency. Students must first submit an application for financial aid and supportive documents by the priority deadline, then make an appointment with a financial aid counselor to complete the BIA application.

Disabled/handicapped students. The Student Development center provides information and limited services for disabled and handicapped students. The center is in Room 236 of the Psychology classroom building. The telephone number is 549-2762.

REFUNDS AND REPAYMENTS

If a financial aid recipient becomes eligible for a refund of tuition, fees or housing payment as a result of withdrawal, reclassification of tuition status or other reason, refund monies are used to reduce the student's financial aid awards before any payment is made to the student. This policy applies whenever refunds are payable. Students who withdraw prior to halfway through the semester may be required to repay a portion of the loans and grants.



STUDENT SERVICES

The university includes a number of offices, facilities, programs and organizations which exist primarily to enhance and support the students' academic life at the university. Correspondence to any of the units should be directed to the particular office or facility.

ADMISSIONS AND RECORDS OFFICE

Admissions. All applications for admission, transcript evaluations, petitions for Colorado residency for tuition purposes and changes from unclassified to classified status are made through the Admissions office. For more information, students may consult the Admissions section of this catalog, or visit the Office of Admissions, Room 202 of the Administration building.

Records. The Office of Registration and Records houses all information on past and present students. Office personnel are responsible for conducting registration for classes each term, certifying students for social security benefits, student loan deferments and "good student" insurance discounts; handling problems with school records; assisting students in dropping and adding classes; processing student withdrawals; evaluating applications for graduation; furnishing transcripts upon request and providing information on students (addresses and telephone numbers). The office is in Room 201 of the Administration building.

HOUSING

The Residence Hall houses on-campus students. It is a modern, multi-storied building consisting of three wings which are joined by a large commons area. A main lounge serves as a gathering area and a movie theatre. The Housing office is located adjacent to the lounge, as is the mailroom. The lower level of the commons area consists of a recreation area (including a court for basketball, racquetball and volleyball and a weight room), a study lounge, and a large-screen television room. The Residence Hall also has computer terminals for use by residents only.

The Residence Hall can accommodate 500 students, with approximately 48 students residing on each floor. All rooms are designed for two people and contain beds, desks, bookshelves, study lamps, closets, dressers, chairs and a wastebasket. Linen service is available for a nominal charge.

Because consideration for others' rights to study and relax are high priorities in any academic community, quiet hours exist on each floor from 8 a.m. to 8 p.m., each day. Recognizing that studying takes a good study environment and more concentration for some, 24-hour quiet floors also are available to students. All residents enjoy equal access to services and programs within the Residence Hall regardless of their choice of lifestyle floor.

The director of Residence Life is a full-time, professionally trained staff member responsible for the overall well-being of residents. The director is trained in counseling, administration, leadership training, human growth and development, and other similar areas of concern to college students. Upperclass live-in students assist the director and help students directly with programs, questions, problems and referrals to appropriate university services. Student personnel include assistants to the director and resident assistants.

Programming. The Residence Hall Association, staff members, and residents work together to provide educational social, cross-cultural and recreational programming to enhance the living/learning environment of the Residence Hall. Activities can be planned either as floor, wing or hall events.

The Residence Hall Association is an avenue for students who desire to be positively involved and to gain leadership skills.

Housing policies. All full-time (enrolled for twelve (12) or more hours) single, non-veteran, freshman students under twenty one (21) years of age, enrolled in any university program are required to live in the Residence Hall and participate in the mandatory Board Plan. Those students living with relatives and/or commuting less than thirty miles one way are exempt from the live-in requirement. To be housed in the Residence Hall a student must submit an application, and an emergency medical form, pay a $100 security/damage deposit, and sign a room and board contract. The contract is binding for the entire academic year. Students who officially withdraw from USC during the first 10 weeks of each semester are refunded a prorated amount of room and board charges provided there are no outstanding debts to the university. The director of Residence Life must clear deviation from stated policies.

A $100 security/damage deposit must accompany each application for space in the hall. This deposit is NOT applied to room and board payment and is held in escrow for the duration of the student's occupancy. Occupancy and damage deposit payments may not be deferred.

Housing for married students. At present there is no housing available on campus for married students. Married students should contact the University Center for referral to housing in the community.

Contract board policies. Residence Hall students are required to contract for meals at the university. Meal plans are purchased each semester and allow the student full dining privileges for that term. Meal passes are not transferable. Special diets prescribed by a physician are given consideration.

Off-campus housing. The University Center information desk maintains a file of off-campus, privately owned rooming houses and apartments. Since listings change rapidly, prepared housing lists are not furnished. Students living off campus should notify the Office of Registration and Records of change in address.

FOOD SERVICE

All campus food services are located in the University Center. The main cafeteria is on the ground floor. Serving hours are:

Monday through Friday	
Breakfast	7:00 a.m.- 8:15 a.m.
Continental breakfast	8:15 a.m.- 9:15 a.m.
Lunch	11:15 a.m.- 1:15 p.m.
Dinner (except Friday)	5:00 p.m.- 6:30 p.m.
Friday dinner	5:00 p.m.- 5:45 p.m.
Saturday and Sunday	
Brunch	10:30 a.m.-12:30 p.m.
Dinner	5:00 p.m.- 5:45 p.m.

The snack bar and pub, La Cantina, is on the first floor of the University Center and is open weekdays from 7:30 a.m. to 8 p.m.

A small restaurant, the Aspen Leaf, is on the top floor of the center. Serving hours are from 11:30 a.m. to 1:30 p.m. weekdays when classes are in session.

Student meal plan I.D.'s are usable only in the dining hall and may be purchased by commuters as well as resident students. Discounted cash cards are available in small denominations of $25 at Auxiliary Services, University Center, Room 114.

COUNSELING AND HEALTH SERVICES

Counseling. The center, located in Room 236 of the Psychology building, provides professional services for students and the community. The services include personal-social counseling, student discussion groups, seminars and workshops and an intake-referral system for other student/community activities.

Career Services. The Office of Career Services and Counseling in Room 309 of the Administration building houses information to assist students in making career choices and provides professional vocational counseling. Standardized instruments to evaluate an individual's potential are administered at no cost to the student.

The placement office in the same location supplies tools and techniques (including placement packets, job vacancy bulletins, resume and interview skills and general job hunting strategies) to help graduates and alumni find career-related employment. This office is the on-campus clearing house for local and national job opportunities.

Student Academic Advisement. The Office of Career Services and Counseling in Room 309 of the Administration building is responsible for coordinating academic advisement for undecided and unclassified students each semester. Those students commited to an academic major are advised by faculty members in their major field.

Testing Services. Test facilities for student and community use are in Room 309 of the Administration building. The office is a state and/or national test center for standardized tests including GED, ACT, ACT-PEP, SAT, GRE, MAT, ETS Insurance and Real Estate and various individual student interest tests such as vocational interest, personality, ability and I.Q.

Handicapped Services. Handicapped services are located in the Student Development Center. The center provides information and limited services for disabled and handicapped students. The USC campus is barrier-free, and the Residence Hall provides adequate living facilities for handicapped students.

Orientation. At the beginning of each semester, a program of orientation for new students is offered. During orientation, students are introduced to key academic and administrative personnel, learn about university policy, receive academic advising and register for classes. The **university calendar** in this catalog and the semester bulletin list orientation dates and times. All new students are urged to attend.

The Office of Admissions provides information and dates for other opportunities for campus visits and orientation.

Student Health Service. The student health service offers medical care to all students, whether or not they carry student insurance. The clinic is operated by a registered nurse and a secretary; a physician is on duty a part of each week.

Students are encouraged to visit the health clinic, located in Room 004 in the University Center, whenever necessary.

Referrals to other physicians may be made when appropriate or if requested by the student. All medical records are confidential.

International Student Services. The Office of International Student Services works to help students from other countries during their stay at the university. The office includes among its concerns, immigration matters, academic problems, student organizations and housing and subsistence emergencies. It is located in Room 309H of the Administration building.

American Language Academy. The American Language Academy is leasing facilities on the USC campus to provide an intensive English language program for the foreign student.

Although USC credit is not provided for ALA courses, USC students may enroll in the academy's classes to improve English proficiency.

The international student enrolled with the American Language Academy who is in the highest levels (4 or 5), may be permitted to enroll in USC classes for up to a maximum of nine semester hours of USC credit per semester. Approval by the university and the director of ALA is required. Students seeking admission to USC as potential degree-seeking students must meet the university's international admissions requirements. (See page 13.)

American Language Academy offices are located in the University Center, Room 121. Contact American Language Academy, by telephone Monday - Friday, 8:30 a.m. to 4:30 p.m. at (303) 549-2222 or write to the American Language Academy in care of the University.

STUDENT ACTIVITIES AND ORGANIZATIONS

Clubs and organizations. USC students have opportunities to take part in the activities of a number of clubs, fraternities, sororities and honor societies. Membership often is based on special qualifications. Students interested in starting a new official campus group must first find a faculty member willing to sponsor the group. Then seven copies of the proposed constitution should be submitted to the chairperson of the Associated Students' Government Club charter committee.

Student activities. The Office of Student Activities in Room 036 of the University Center houses the University Activities Board, funded by student fees. The board is responsible for planning, coordinating and implementing student-oriented activities on and off the USC campus. The board is composed of several committees: Concert Crew, Films, Informal Events, Video, Cultural Events and Coffee Haus.

Student government. All registered USC students who have paid fees are members of the Associated Students' Government (ASG). ASG's main purpose is promoting student life and maintaining the general welfare of the student body.

ASG functions through three branches of government: legislative, executive and judicial. The legislative branch, the ASG senate, is composed of 14 senators elected from the student body and is presided over by the ASG executive vice president. The executive branch consists of the president, the vice president and the vice president of the Office of Management and budget. The judicial branch is composed of five justices, one of whom is designated the Chief Justice. The senate meets weekly.

ATHLETICS

USC views participation in intercollegiate athletics as a beneficial experience and a worthwhile part of the entire educational process. All students are invited to participate.

The university is a member of the National Association of Intercollegiate Athletics, and the Rocky Mountain Intercollegiate Athletic Conference. USC sponsors the following intercollegiate sports:

Men: basketball, cross country, track and field, and wrestling

Women: volleyball, basketball, cross country, and track and field.

INTRAMURALS

Intramurals is a special program involving students and staff in organized recreation and sports activities. Coeducational and men's and women's activities are offered in a variety of sports. All students are encouraged to participate, either as individuals or with teams.

FEDERALLY SPONSORED PROGRAMS

Minority Biomedical Research Support program. The University of Southern Colorado is designed to provide research experience for students interested in pursuing a career in the biomedical disciplines. Participating students often contribute to the publication or presentation of research findings. The Minority Biomedical Research Support program sponsored by the National Institutes of Health, has been active on this campus since August of 1981 and is renewable.

For information, contact Dr. J. L. Connelly, Chemistry building, Room 113, or call 549-2571.

Special Services. The Special Services Program expands educational opportunities for students who demonstrate personal motivation and a high potential for academic success. Low-income, first generation students who meet the criteria established by the U.S. Department of Education are encouraged to apply. For further information, call 549-2750.

Educational Opportunity Center. EOC counselors are assigned to area junior and community colleges to help low-income and first-generation students continue their post-secondary education. Students are assisted with admissions procedures and financial aid preparation. For additional information, call USC at 549-2750 or 549-2111.

Upward Bound. Upward Bound is a pre-college program for high school students from low-income and first-generation families. Through counseling and tutoring, the program helps students develop the motivation, interest and skill necessary for acceptance into and success in college. An intensive summer program assists high school graduates through six credits of college courses. Those who have not yet graduated from high school attend classes that emphasize English, mathematics, social studies, science, reading, speech and art.

The program serves all high school students from Pueblo County. For further information, call 549-2111.

VETERANS' AFFAIRS

The Veterans' Affairs Program provides information on programs and benefits available to veterans, including veterans' advisory services, educational benefits and programs, tutorial services and general information. For further details, write to the coordinator of Veterans' Affairs or visit the office, Room 310 of the Administration building.

Field experience courses. Certain courses listed in this catalog involve university-supervised, on-the-job experiences. In such courses, which may be required, the student is not permitted to receive remuneration for services performed with the host business or agency. In certain cases, remuneration may be received in courses classified as electives within the student's program. The Veterans Administration has requested that the differentiation be made.

Benefits. The courses offered by the university, with certain exceptions, are approved for the training of veterans under Chapter 34, Title 38, U.S. Code (PL 815) as well as for dependents of veterans under Chapter 35, Title 38, U.S. Code. Veterans and dependents who plan to utilize benefits administered by the Veterans Administration while attending USC must report to the Office of Veterans Affairs as soon as the decision is made to attend the university.

STUDENT FINANCIAL AID

Refer to student financial aid section of this catalog for further information.

UNIVERSITY CENTER

The University Center provides USC students and their guests with a warm and attractive place for relaxation and entertainment. Billiards, ping pong, foosball and the latest in electronic games provide a little diversion between and after classes. Next to this gamesroom area is La Cantina, a snack bar and pub area where students can socialize over their favorite food and beverage. The student activities office, campus ministries and Health Services are located on the first floor of the University Center. Student government offices are on the third floor. Dining hall services, the bookstore and KTSC-FM student radio station are on the main level of the University Center.

Students are also encouraged to use the Hearthwell Lounge and Quiet Room (third floor) for relaxation and study. The third floor meeting rooms and the Ballroom are available for scheduled meetings and special events. The Aspen Leaf Dining Room offers lunch-only restaurant service to cash or discount card patrons.

During the academic year, the University Center is open regularly from 6:30 a.m. to 8 p.m. on weekdays and as scheduled events require. Saturday and Sunday the center is open during meal hours and as scheduled for events. Limited hours are established during summer and when classes are not in session. As events and meetings are scheduled, the University Center hours are expanded to accommodate preplanned functions.

USC BOOKSTORE

The USC bookstore is a modern, 20,000-square foot store in the University Center, serving USC faculty, staff and students. Texts for classes, general interest books, current magazines, classroom supplies, notions, calculators, greeting cards and sport and t-shirts are among the many items sold in the bookstore. Hours of operation are printed in the semester bulletin and on the bookstore entryway.

STUDENT RIGHTS AND RESPONSIBILITIES

EDUCATIONAL RECORDS

Annual notification of rights. The university informs students annually of their rights accorded by the Family Educational Rights and Privacy Act of 1974 (P.L. 93-380).

Right to inspect and review education records. Eligible students may inspect and review their education records except those prohibited by section 438 of the act. A reasonable fee will be charged for requested copies.

"Education records" means those records which: 1) are directly related to a student, and 2) are maintained by an educational agency or institution or by a party acting for the agency or institution.

Limitation on destruction of education records. The university is not precluded by section 438 of the act from destroying education records, subject to the exceptions delineated under 20 U.S.C. 1232g (a) (2).

Request to amend education records. An eligible student who believes that information contained in the education records of the student is inaccurate or misleading or violates the privacy or other rights of the student may request that the university amend the records.

Right to a hearing. The university shall, on request, provide an opportunity for a hearing in order to challenge the content of a student's education records to ensure that information in the education records of the student is not inaccurate, misleading or otherwise in violation of the privacy or other rights of students.

Conduct of the hearing. The hearing required to be held shall be conducted according to procedures which shall include the due process elements as they appear under 20 U.S.C. 1232g (a) (2).

Prior consent for disclosure required. The university will obtain the written consent of an eligible student before disclosing personally identifiable information from the **education records** of a student. This process is not required if the information is considered **directory.** Both terms are defined below.

Education records requiring student release are defined at USC as grade reports, transcripts, disciplinary files and class schedules.

Directory information which does not require prior release, is defined as student name, address, telephone number, date and place of birth, major field of study, participation in officially recognized activities and sports, weight and height of members of athletic teams, dates of attendance, degrees and awards received, the most recent previous educational agency or institution attended by the student and other similar information.

Although the university does not abridge either Public Law 93-380 (The Privacy Act) or PL 93-579 (amendment thereto), there are some education records that may be released without prior student approval under the law. Examples are 1) records that may be released to appropriate parties in a health or safety emergency, 2) records used to help determine the eligibility of the student for financial aid and 3) personally identifiable information to other school officials within the educational institution or local educational agency who have been determined by the agency or institution to have legitimate educational interests.

Record of requests and disclosures required to be maintained. The university shall record all requests for each disclosure of personally identifiable information on each student. The disclosure record is kept with the students' academic records.

Disclosure to certain federal and state officials for federal program purposes. Nothing in section 438 of the Act shall preclude authorized representatives of officials from having access to student and other records which may be necessary in connection with the audit and evaluation of federally supported education programs, or in connection with the enforcement of or compliance with the federal legal requirements which relate to these programs.

Student/staff directory. A directory is published annually listing the names of students attending USC, their local address, telephone listing, class and major. This information is available to the public and is released unless an annual written request to withhold such information is filed with the Registrar's office by the end of the second week of classes.

Parents of the student or the eligible student have the right to refuse to permit the designation of any or all of the categories of personally identifiable information with respect to that student as directory information. Such a request must be made through the Office of Registration and Records by the end of the second week of classes.

VEHICLE REGISTRATION

Students operating vehicles on campus must register their vehicles with the University Police department before the first day of classes. A student parking permit costs $12 per year, $6 for a single semester. To register a vehicle, each student must present a valid driver's license, a vehicle registration card or proof of ownership and valid university identification. The permit does not guarantee a parking space.

IDENTIFICATION CARDS

All students enrolled should obtain an ID card, provided by the University Center office (Room 113) during regular working hours Monday through Friday from 8 a.m. to 5 p.m. In order to obtain an ID, a student must show a picture identification and the computer printout of his or her class schedule for the semester. Continuing students must have their ID's validated each semester, and must present confirmation of registration.

Faculty and staff are provided a non-validated ID at $3.00 for a new card and $5 for a replacement. Employees should be prepared to show a picture identification and provide the name of the department and supervisor with whom they are employed. Validation each semester allows the faculty or staff member to attend many events at reduced cost. To validate an ID, the faculty/staff member pays $8.50 to the USC cashier and presents the receipt at the University Center office (Room 113) for validation. Spouse stickers may be obtained at the athletic department.

VIOLATIONS OF THE LAW ON CAMPUS

In order to protect its educational mission, the university takes a firm and fair stand concerning violations of the law on campus. The University Police department is charged with the responsibility for maintaining law and order at the University of Southern Colorado and for enforcing all national and state laws, local ordinances and regulations of the university, except when such enforcement is, by such law, made the responsibility of another department, official or agency.

Deliberate illegal activity which comes to the attention of USC officials is not tolerated; officials do not interfere with lawful investigations or prosecutions of the law on campus. No one should assume that USC is a sanctuary for persons breaking the law. At USC, each individual is responsible for his or her own behavior.

An offense necessitating police action may also be treated internally as a university disciplinary matter.

STANDARDS OF CONDUCT

Members of the university community are expected to observe the laws of Pueblo, the state of Colorado and the federal government and to respect other members of the community. Students, faculty and staff members of USC neither gain nor lose any of the rights of citizenship. Activities which render students liable to disciplinary action are:

1) Violation of federal, state and city laws and ordinances or any other conduct that adversely affects the functions of the university in the pursuit of its objectives.

2) Theft or damage to university property or harm to a member or guest of the university community.

3) Unauthorized entry into or use of university or university-controlled facilities or property.

4) Failure to comply with directions of university officials acting in the performance of their duties.

5) Violation of the university's and/or residence hall's regulations concerning the use, possession or consumption of alcoholic beverages.

6) Use, sale, distribution or possession of drugs, controlled substances, barbiturates, not authorized by a physician or those which are illegal.

7) Violation of published university, campus or residence hall policies, rules or regulations.

8) Hazing in any and all forms.

9) Disorderly conduct or loud, indecent or obscene conduct on university or university-controlled property or at university-sponsored functions.

10) Physical or verbal abuse or intimidation of anyone on university or university-controlled premises or at university-sponsored functions or any conduct that endangers or threatens the health, safety or well-being of any person.

11) Dishonesty, such as cheating, plagiarism, misrepresenting one's self or facts or knowingly furnishing false information to any person or agency within the university community.

12) Any form of academic dishonesty, including the acquisition of tests or other academic material belonging to a member of the university community without proper authorization, whether the acquisition is for personal gain or for the benefit of someone else.

13) Forgery, alterations or use of USC documents, records, instruments or identification with intent to defraud or mislead.

14) Violation of university traffic or parking regulations.

15) Intentional obstruction or disruptions or inciting others to obstruct or disrupt teaching, research, administration, disciplinary proceedings or other university or university-authorized activities.

16) Appropriating public or private property without the consent of the owner or person responsible.

17) Possessing or using illegal or unauthorized firearms, explosives, dangerous chemicals, or other weapons on university-owned or controlled property.

18) Possessing or consuming alcoholic beverages on or in university property, except in those areas authorized by the university, and then only those types of beverages authorized by the university.

19) Failing to show proper identification to university police officers or other university staff (acting in official capacity) when requested to do so.

20) Failing to meet university financial obligations.

21) Tampering with fire equipment in any manner.

DISCIPLINARY PROCEDURE

The primary responsibility for administering student discipline rests with the Office of the Dean of Student Services. The vice president delegates the responsibility for administering the disciplinary process to a designated hearing officer. The hearing officer is responsible for discipline involving unacceptable student conduct and infractions of USC rules and regulations (other than academic rules and regulations).

The decisions of the hearing officer may be appealed to the campus appeals board, the highest hearing and appeal board for non-academic matters at the university. Decisions involving academic infractions, appeals, etc. must follow the procedures established by the academic division of the university.

If the hearing officer or campus appeals board determines that a student has violated a university regulation, a sanction may be imposed. Sanctions range from warnings to expulsion from the university. The Office of the Dean of Student Services provides, upon request, the institution's **Standards of Conduct Handbook,** which contains a detailed explanation and description of institutional disciplinary philosophy, rules and regulations.

ACADEMIC PROGRAMS

DEGREES OFFERED

The university is approved to grant the following degrees: bachelor of science (BS), bachelor of arts (BA), bachelor of science in business administration (BSBA), bachelor of science in electronics engineering technology (BSEET), bachelor of science in industrial engineering (BSIEN), bachelor of science in civil engineering technology (BSCET), bachelor of science in mechanical engineering technology (BSMET), bachelor of science in nursing (BSN); bachelor of social work (BSW); master of arts (MA) in industrial education; master of business administration (MBA).

COLLEGES OF THE UNIVERSITY

The following is an outline of the current organization of colleges and programs. The degree designations are those approved by the Colorado Commission on Higher Education.

COLLEGE OF APPLIED SCIENCE AND ENGINEERING TECHNOLOGY

Automotive Parts and Service Management: BS
Civil Engineering Technology: BSCET
Computer Science Technology: BS
Electronics Engineering Technology: BSEET
Industrial Engineering: BSIEN
Mechanical Engineering Technology: BSMET

COLLEGE OF PROFESSIONAL STUDIES

Accounting: BSBA
Business Administration: BSBA, MBA
Economics: BSBA
Elementary Education: BS
Industrial Education: BS, MA
Nursing: BSN
Physical Education: BS
Recreation: BS
Social Work: BSW

COLLEGE OF LIBERAL AND FINE ARTS

Art: BA, BS
English: BA
Foreign Language: BA
Mass Communications: BA, BS
Music: BA
Political Science: BA, BS
Psychology: BA, BS

Sociology/Anthropology: BA, BS
Social Science, Broad Area: BA, BS
Speech Communication/Theatre: BA, BS

COLLEGE OF SCIENCE AND MATHEMATICS

Biology: BS
Chemistry: BS
Mathematics: BA, BS
Medical Technology: BS
Physics: BS

THE UNIVERSITY LIBRARY

The University Library provides information services to students, faculty and staff.

Library Services staff assist patrons in learning how to find and utilize books, periodicals, pamphlets and government documents through instruction for individuals, small groups or formal classes. Staff also prepare subject bibliographies for classes, arrange inter-library loans, and provide computer-based reference searches.

Approximately 200,000 volumes are available, as well as more than 1300 periodical titles The University Library is a designated selective depository for U. S. Government documents and geological survey maps. Special collections include Colorado documents; a Slavic Heritage collection; the papers of Vincent Massari, former state senator; the Alva Adams family papers; Tobie Hopkins Black Literature, the Ralph Taylor Southwest collection, and the Edward O'Brien Western collection.

Instructional Media Services supply non-print media aids and arrange for students to listen to audio cassettes of class lectures, as well as other taped learning resources as assigned by faculty.

The Audiovisual Collection in Library 310 offers student carrels for playback of video tapes, sound filmstrips, sound slide sets and audio cassettes. Students may check out audio cassettes, cassette players and headphones. Software, including 16 mm films, is available to faculty members for use in curricular programs.

In Library Wing 226, students may practice foreign languages and English in the audio learning laboratory.

ACADEMIC EXTENSION AND CONTINUING EDUCATION

The university makes available a broad array of credit courses and non-credit seminars and workshops through the Division of Extended Educational Programs. Some programs are offered on campus and others at off-campus sites more convenient to persons living outside of Pueblo.

Off-campus instruction sites include Peterson Air Force Base and the Air Force Academy and Fort Carson in Colorado Springs, the Fremont Education Center and the Colorado State Penitentiary in Canon City, and community college campuses throughout central and southeastern Colorado.

Both degree and non-degree seeking students are encouraged to participate in the Extended Educational Programs. Persons desiring classification as degree-seeking students must apply for admission to the university.

Courses taken through the University of Southern Colorado Extended Educational Programs have the same credit value as those conducted on campus and may be used in meeting the institutional residency requirement.

A primary aim of the Division of Extended Educational Programs is to provide courses to part-time adult students. A variety of educational methods—classroom instruction, televised courses, conferences, workshops and seminars—are utilized in an attempt to meet the needs of such students at convenient times and settings. Students may earn academic credit toward a degree, study for career advancement, or pursue cultural and avocational interests.

To assure academic integrity, academic extension courses are taught primarily by university faculty members. When this is not feasible, equally qualified instructors are recruited from the neighboring communities.

Courses are normally scheduled in eight-week sessions; special programs are of varied lengths. Intensive classes usually are held in the evening or on weekends for the convenience of working students.

Although the majority of course offerings are initiated by the university, courses may originate through requests by individuals and interested groups.

The university is increasing outreach services, particularly through television, workshops and seminars geared toward Colorado public agencies, businesses and industries.

SUMMER SEMESTER

The summer semester consists of an eight-week term and four two-week terms operating simultaneously. A five-week term is available to graduate students. A wide range of undergraduate, graduate and teacher education courses, special workshops and programs not necessarily offered during the academic year are available in the summer.

A full-time load in summer semesters consists of fewer credit hours than a full-time load during the regular academic year. Summer tuition and fees are calculated according to the number of credit hours the student takes. The summer bulletin, containing information on courses and expenses, is issued in the spring each year. Bulletins are available in the Office of Registration and Records and the Office of Admissions.

INTERIM SESSION

The University of Southern Colorado has established an academic calendar for an interim session between fall and spring semester.

The interim session consists of three weeks of concentrated study. Courses are selected carefully to accommodate students who prefer accelerated time frames. Each semester credit requires 15 classroom contact hours and meets daily at the university campus.

For information concerning the schedule of courses for December and January, write the Office of Extended Educational Programs, University of Southern Colorado, 2200 Bonforte Blvd., Pueblo, Colorado 81001-4901 or call (303) 549-2213. Inquiries for course offering schedules should be made during November.

TELECOMMUNICATIONS

The Telecommunication Division which includes the university's public television station (call-letters KTSC-TV operating on Channel 8) is responsible for producing and broadcasting both instructional and varied public television programs.

The instructional television service produces and obtains instructional television material and supports the mass communications program by furnishing personnel and facilities to train students for broadcasting careers.

KTSC-TV, Channel 8, as a non-commercial public television station licensed by the Federal Communications Commission to the university, operates as a public service under the vice president for business affairs. The station broadcasts seven days a week at full power covering south/southeastern Colorado, including Pueblo, Colorado Springs, Canon City, Walsenburg and the Arkansas Valley. The daytime schedule includes instructional programs for public schools; the nightly schedule consists of cultural, public affairs and educational programming for viewers of all ages.

KTSC-TV is affiliated with the Public Broadcasting Service and the Pacific Mountain Network. Advanced students in mass communications and electronics receive academic credit for working in the daily operation of the station.

MILITARY SCIENCE (ARMY ROTC)

In cooperation with the federal government, the university offers courses in military science on a voluntary basis to all qualified male and female students.

The military science department recognizes that preparation for national defense is one of the important obligations of citizenship, and the qualities of patriotism, loyalty, discipline, leadership and respect for authority, instilled by proper military training, are valuable characteristics.

The Army four-year program complements the traditional four years of college and includes one summer encampment. Students completing Army ROTC may be commissioned as second lieutenants in the Army Reserve, Army National Guard or the regular Army.

A student may earn a commission after completing only two years of ROTC training during the junior and senior years. The two-year program is designed for transfer students or students who were unable to take ROTC during their freshman and sophomore years.

The programs are designed to enable students to earn, simultaneously, commissions and baccalaureate degrees in their chosen academic fields.

ROTC also offers qualified students two-, three- and four-year scholarships which pay for tuition, laboratory fees and books and provide $100 per month for subsistence.

TEACHER CERTIFICATION PROGRAMS

Elementary: The elementary teacher certification major provides a broad course of study designed to prepare teachers to teach grades K-6. The program is approved by the Colorado State Department of Education and accredited by the National Council for Accreditation of Teacher Education (NCATE). Successful completion qualifies the student for recommendation for a Colorado Type A Certificate.

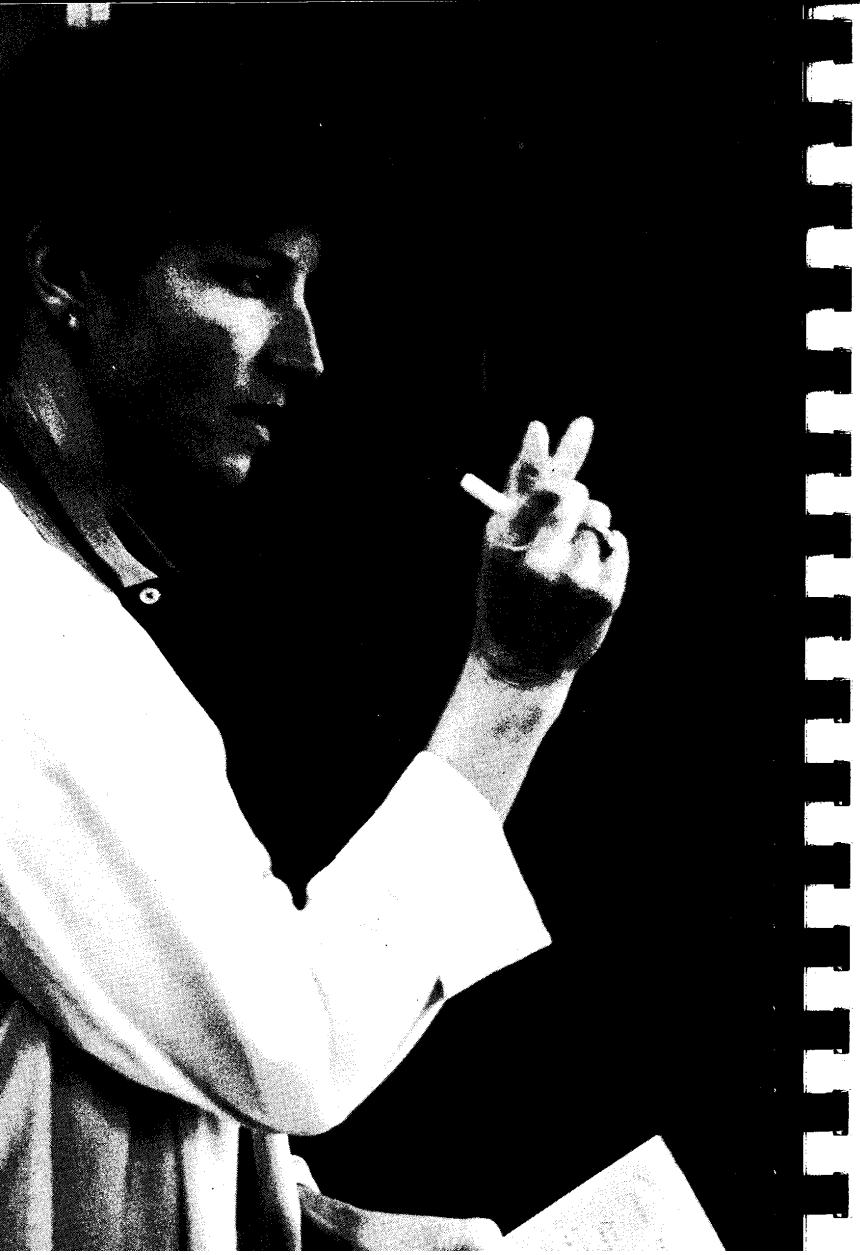
Secondary: The secondary teacher certification program combines a teaching major in an academic area approved by the State Department of Education with a professional sequence of courses which leads to a Colorado Type A Certificate. Secondary programs are also accredited by the National Council for Accreditation of Teacher Education (NCATE).

COOPERATIVE EDUCATION

Cooperative education provides an educational plan in which periods of study and periods of career-related work are combined in one program, individualized for each student. Students earn a salary and acquire academic credit in their majors while experiencing, on a temporary basis, their chosen career. The experience gives cooperative education students an opportunity to become well-acquainted with the employer which, in many cases, leads to permanent placement upon graduation. This program is administered by the academic departments on campus.

COMMENCEMENT

Commencement exercises take place once a year at the end of spring semester. Students eligible to participate include those who completed their requirements and received degrees in the preceding summer or fall semester as well as those who completed requirements in the spring semester.



ACADEMIC POLICIES

Students are advised to become familiar with the academic policies of the university, since it is each student's own responsibility to see that he or she complies with those policies and with the policies of the colleges and programs from which he or she takes classes. The Office of Registration and Records exercises all possible care in checking students' records for graduation; however, it is the sole responsibility of the student to fulfill all requirements for his or her degree.

CATALOG REQUIREMENTS

Students may graduate under the catalog requirements listed for the year in which they were first enrolled, provided they complete graduation requirements within a continuous period of no more than 10 years. In the event that a student withdraws, or is withdrawn from the university and is subsequently readmitted after an absence of two (2) or more semesters, his/her readmittance will be governed by the catalog current at the time of readmission. Any exceptions to the policy must have prior approval. Students should be sure to obtain and keep a copy of the catalog under which they enter or are readmitted.

TIME LIMITATION ON CREDIT

Any college credit earned more than 12 years before the date of admission or re-admission is not applicable toward the degree desired unless it is approved by the head of the program offering the course(s) [or equivalent(s)], and by the appropriate dean.

DEAN'S LIST AND GRADUATION WITH DISTINCTION

To qualify for placement on the dean's list, published fall and spring semesters, students must achieve a grade-point average which places them in the upper 10 percent of all eligible students. To be eligible, students must be degree-seeking and must earn at least 12 credit hours in which grade points were awarded.

Students maintaining high scholastic averages are awarded undergraduate degrees **with distinction** or **with special distinction.** A minimum of 60 hours must be earned at USC for a student to be considered for graduation with distinction. To graduate with distinction, a student must have a minimum cumulative grade-point average of 3.50; for special distinction, a minimum grade-point average of 3.75 is required.

The university also offers an honors program for gifted students; the program is described in the **curriculum** section of this catalog.

DEMONSTRATION OF BASIC COMPETENCIES

Because basic competency in writing, speech communication, reading and mathematics is a necessary prerequisite for progress in all program offerings, the university requires all students enrolled in baccalaureate degree programs either to demonstrate initially an acceptable level of knowledge in these areas, or to develop the necessary fundamental skills. With regard to communication skills, all students are required to:

1) Enroll in the appropriate basic competencies[1] course in the first semester of enrollment and to continue enrolling in such courses until all basic competencies requirements have been met.
2) Satisfy the university's speech communication requirement[2] as soon as possible, preferably in their first year.

All students must satisfy the university mathematics requirement. This requirement can be met in one of the following ways:

1) Achieving a score of 23 on the mathematics component of the ACT Exam.
2) Passing the USC Mathematics Competency Exam.*
3) Completing MATH 120 (Intermediate Algebra) or an approved higher level mathematics course with a grade of C or better. The following courses may not be used to satisfy this requirement: MATH 240, 241, 360, 361, 377, 463.

Transfer students who wish to meet condition c) by using a mathematics course taken at another institution must obtain approval from the USC mathematics department.

For most programs in the sciences, business or technologies, the required mathematics component starts at the level of college algebra or calculus. Students demonstrating achievement of the mathematics basic competency level are ready to enter such programs.

*Given during orientation each semester. Except in extreme circumstances, this exam may be taken only once.

[1]Students who have achieved an ACT score of 16 or above on the American College Testing Program's English test, or a Scholastic Aptitude Test verbal score of 322, are allowed to enroll in English 110 or 115. Achievement of an ACT score of 16 or above on the social studies test, or at the 21.0 percentile or above on the College English Test, qualifies a student to participate in RDG 120. Students scoring 15 or below on the ACT English scale, or 321 or below on the SAT verbal section, are required to take ENG 109 during their first semester at USC. Students scoring 15 or below on the ACT social studies scale, or at the 20.9 percentile or below on the College English Test, are required to take RDG 119 during their first semester.

[2]Speech Communication 101: Basic Speech Communication, satisfies this requirement.

LEVEL OF INSTRUCTION AND PREREQUISITES

Courses are numbered to indicate the level of instruction as follows: freshman, 100-199; sophomore, 200-299; junior, 300-399; senior, 400-499 and graduate, 500-599. Prerequisites for courses are given with the course descriptions in this catalog. Students are **required** to have satisfied the prerequisites before registering for a course. Students are dropped by the instructor from courses for which they do not have the prerequisites, unless special permission is granted by the head of the program offering the course.

CLASS HOURS AND CREDIT HOURS

A class hour consists of 50 minutes. One class hour a week of lecture or discussion, throughout a semester, earns a maximum of one credit hour. The number of credits awarded for a given course is determined by the number of lecture or discussion hours spent each week in class. Laboratory courses give one hour of credit for each two or three hours spent in the laboratory.

FULL-TIME PROGRAM

A full-time program normally consists of 15 to 18 credit hours per semester during the regular academic year. (During summer session, a full-time load is smaller.) Under a normal full-time program, most students can complete a bachelor's degree in four years. Students should plan to work at least 48 hours a week on such a program — in class, in the laboratory and in preparation and study. To receive financial aid, insurance discounts or full veterans' benefits, students must earn at least 12 hours per semester.

LIMITS ON CREDIT-HOUR LOADS

Course loads of more than 18 semester credit hours are defined as overloads. Both on-and off-campus courses are counted in the credit hour total.

Freshmen who have achieved fewer than 15 semester credit hours may not take an overload. Students with 15 or more semester hours may take an academic overload according to the limits set below:

GPA	Credit hour overload permitted
less than 2.50	0
2.50-3.40	3
3.41-3.80	6
3.81-4.00	7

Under no circumstances may a student take more than 25 semester hours, whether on or off campus, in a single semester.

Up to five semester hours may be taken in a given semester by test-out or challenge procedures. To challenge a course, a student must first enroll in the course and pay tuition for it, and then consult the appropriate faculty member, head of the program and college dean. A successfully challenged course counts in the overload limits.

Overload requests are approved by the student's faculty adviser, head of the program and college dean. All three signatures may be required. Appeals may be made to the vice president for Academic Affairs.

CLASSIFICATION OF STUDENTS

Classification of undergraduate students is based on semester credit hours earned as follows:

Freshman: A student who has earned fewer than 30 semester hours of credit.

Sophomore: A student who has earned 30-59 semester credit hours.

Junior: A student who has earned 60-89 semester credit hours.

Senior: A student who has earned 90 or more semester credit hours.

Graduate Student: See page 363 for graduate classification.

Non-degree: A student who has made no commitment to earning a degree. Work taken as a non-degree-seeking student may be classified retroactively for degree credit when and if a favorable evaluation is established. Students under suspension, or those denied regular admission, are not eligible to enroll as non-degree students.

Auditor: A student who has been permitted to enroll in a course for which he or she will receive no credit. Auditors determine their own attendance, take no examinations, receive no grades, do not participate in classroom discussion except as permitted by the instructor and earn no credit. They pay the same tuition as persons enrolled for credit. An auditor may not be reclassified to receive credit in the course after the final date for adding courses. In place of a grade, students receive the symbol NC (no credit) on their transcripts. Students wishing to register for a course as auditors must declare their intention at registration or at the first class session. A request for no-credit forms are available in the Registrar's office. Courses are taken for credit unless the Office of Registration and Records is notified prior to the deadline for schedule changes.

Part-time student: A student carrying fewer than 12 semester hours in any semester.

GRADING

Course grades are reported by letter only. The scale of grades and grade points follows:

Grade		Grade points per credit
A	(Excellent)	4
B	(Good)	3
C	(Average)	2
D	(Poor, but passing)	1
E	(Credit by examination)	0
F	(Failure)	0
IN	(Incomplete)	*
W	(Withdrawal)	*
WF	(Withdrawal failing)	0
WN	(Administrative withdrawal)	0
S	(Satisfactory)	**
U	(Unsatisfactory)	0
NC	(No credit)	*
IP	(In progress)	*

*Credit is not used to compute grade-point average and is not counted toward graduation.
**Credit is not used to compute grade-point average but is counted toward graduation.

It should be noted that grades of S and U may be used only in certain courses approved by the faculty senate and that, although a D is passing, it does not constitute a satisfactory grade. Students must have a 2.00 cumulative grade-point average (C) to graduate and to avoid being placed on probation. Many departments and programs do not permit D grades to count toward fulfillment of their requirements, even though the hours can be counted toward graduation requirements. D grades from other institutions are not accepted in transfer. Some programs require averages higher than 2.00. Students should check the information provided in the descriptions of the specific majors, minors or other programs in which they are interested. A course grade of F does not constitute a passing grade nor does it satisfy meeting a major or university requirement.

In progress. A grade of IP (in progress) may be given at the close of the term in certain courses approved by the faculty senate. Students receiving an IP must re-register in the same course the next term, pay tuition and must complete the work during that term. When the work is completed, students are given a regular grade.

Incompletes. A grade of IN (incomplete) is a temporary grade indicating that the student has a satisfactory record in work completed, but for reasons beyond his or her control has missed the final examination or other course requirements. Any instructor giving an IN grade must fill out an incomplete grade form in four copies. One copy is sent to the student, one to the Office of Registration and Records, and one to the program office, and one is kept by the instructor. A grade of IN may be changed by the instructor. If incompletes are not completed by the end of the second semester (excluding summer) after they are received, a letter grade of A, B, C, D or F is assigned. The permanent grade is given by the instructor to the registrar at the time the incomplete is assigned. It is the student's responsibility to complete the course and initiate the change of an IN to a permanent grade. Re-registration is not necessary.

Grade-point average computation. A grade-point average (GPA), is calculated by totaling the number of grade points earned, based on the scale above, and the number of credit hours undertaken. The total grade points earned divided by the total credit hours undertaken provides the grade-point average. If, for example, the number of credit hours undertaken is 16 and the grade-point total is 44, the GPA is 2.75. W's, IP's, IN's, and NC's are not computed in the grade point average.

FINAL EXAMINATIONS AND GRADE CHANGES

Final examinations are not to be scheduled at times other than those listed in the class schedule bulletin. In some courses a final examination may not be appropriate to the material; however, classes continue to meet through the period scheduled for the final examination.

Final grades entered in the Office of Registration and Records are unalterable unless a grade change form is completed and signed by the instructor, head of the program and the dean. A grade change request should be extremely rare, resulting from an instructor's error in calculating the original grade or a similar occurrence. It is not appropriate to change a grade because the student submitted additional work. Grades of A, B, C, D or F may be changed by instructors to A, B, C, D or F before the end of the following term (summer excluded) only with the approval of the college dean. Grades of S, U, W and NC may not be changed. It is the student's responsibility to request a grade change if one is justified except in the cases of grades of IN or IP.

FACULTY RECORDS

All faculty members keep appropriate records (such as grade books or sheets) of each student's progress in every course offered for university credit. The records are in addition to the final grade reports which are submit-

ted to the Office of Registration and Records at the end of each term. Records are retained by the faculty member's program for one year. They are treated in confidence by the faculty member and head of the program.

REPEATED COURSES

Undergraduate students may repeat courses. When a course is repeated, only the higher grade and credit earned are computed into the student's grade-point average, provided the student has requested a recomputation of grade-point average by the Office of Registration and Records. The previously attempted courses and grades remain in the academic record, but are not computed in the overall average.

Transcripts contain an appropriate entry indicating that the grade-point average has been recomputed and stating the basis for recomputation. If a student fails a course twice, only one failure is computed into the grade-point average.

CLASS SCHEDULE CHANGES

Changes of major. All changes of major must be made through the Office of Registration and Records with the approval of appropriate program and college dean.

Adding courses. Courses may be added to a student's schedule through the initial schedule change period, as specified in the class schedules, with the permission of the instructor. Course additions must be processed through the Office of Registration and Records.

The student is responsible for processing his or her drop/add during the drop/add period. **Under no circumstances** does the instructor assume this responsibility on behalf of the student.

Dropping courses. Courses may be dropped from a student's schedule through the initial schedule change period as specified in the class schedule without a record of the dropped course appearing on the student's permanent record. Courses must be officially dropped through the Office of Registration and Records. Short or mini-courses may be dropped in the same way before 15 percent of the course duration has passed.

Following the end of the drop/add period, students may drop classes according to the policies below:

When a student drops a course before 40 percent of the course duration has transpired, the instructor gives a grade of W if the student currently is passing the course, or WF to a student not doing passing work. After 40 percent of the course duration has transpired, all drops result in grades of WF.

NOTE: 40 percent of a 15-week course occurs at the end of the sixth week.
40 percent of a 10-week course occurs at the end of the fourth week.
40 percent of a 5-week course occurs at the end of the second week.
40 percent of an 8-week course occurs at the end of the third week.

Exceptions to the above policy must be approved by the instructor and the dean of the appropriate college. A grade of W does not affect the student's grade-point average, but a WF is calculated as an F grade. Grades of W, WF and NC may not be recorded during the final week of the semester.

Withdrawal. To withdraw officially from the university, the student must file a withdrawal form with the Office of Registration and Records. **TIMING IS CRITICAL.** Students who withdraw after the end of the drop/add period, are not refunded full tuition and fees. Students who withdraw after the sixth week of the semester also may suffer academic loss; a grade of F may be assigned by instructors if they are not notified officially of the student's withdrawal. Students residing in the residence hall must also check out with the housing office.

Military withdrawal. If military obligations interrupt the academic work of a member of the armed forces registered for courses, the student may ask instructors for an early termination of his or her courses. Early terminations may include, but are not limited to: 1) a grade of W; 2) an incomplete (IN) grade, if there is any chance the student will be able to complete the course requirements; 3) an early final examination and course grade; 4) partial course credit or 5) opportunity to complete the class by independent study. It is the student's responsibility to make such a request in writing to the instructor. After the student and instructor have agreed on the terms of early termination, the agreement must be approved in writing by the head of the program and college dean.

Addition of independent study and extension courses. A resident student may enroll in independent study and extension courses only if the addition of such courses will not cause his or her program to exceed the maximim course load allowable and only after permission has been given by the dean of the appropriate college.

AUDITED COURSES

A student may register for a course as an auditor, without credit, provided the instructor concerned gives permission. The Office of Registration and Records must be notified of audit arrangements. The tuition for audited courses is the same as the tuition for credit courses. See page 65 for auditor description.

Persons 65 years of age or older, or 62 and retired, may audit courses without paying tuition so long as space is available. Permission of the instructor is required.

EXPERIENTIAL CREDIT COURSES

Through cooperative education, internships, field experiences and laboratory research, students in many degree programs have the opportunity to expand their knowledge and apply theory in "real-life" situations. All experiential credit courses occur under the direction of an academic instructor and are a part of the regular university curriculum. In some cases such courses are required for majors. All such courses require registration, carry credit, require payment of tuition, are listed in the catalog and include a planned program of activities outlined in the course syllabus. The grading system is the same as the system used for regular courses. Supervised work experience courses are approved for inclusion in veterans' class schedules under Veterans Administration Regulation 14265.

Credit for life experience. Some students may seek to receive academic credit for previous, out-of-school work experiences in which the job responsibilities were similar to experiences offered in university-sponsored internships and other programs. Credit for such experiences may be given if the following conditions are met:

1) The experience must be directly similar to the content of internships, field courses and/or laboratory courses in the regular curriculum.
2) The student must describe in writing the nature of the experience and what he or she learned through it.
3) The experience and learning must also be documented by the student's supervisor. Documentation must include a detailed account of the nature, frequency and duration of the student's duties.
4) A paper integrating the experiences with subsequent or concurrent classroom instruction must be submitted and approved.

The maximum number of semester credit hours allowed for life experiences is six. Any amount over six must be approved and justified by the appropriate dean and the vice president for academic affairs. Credit for life experiences is granted only for experience gained within 12 years of the date the degree is expected to be awarded.

Credit for life experiences is subject to the approval of the program and the dean of the college in which credit is requested.

ACADEMIC STANDING

The academic standing of all students is reviewed at the end of each semester. At such times, all students with deficient grade-point averages are notified by a statement on the bottom of their grade reports or by mail. After a student has attempted 12 semester credit hours, he or she must have a grade-point average of 2.00 or higher to remain in good academic standing.

Probation. Students are placed on academic probation at the end of any semester in which the grade-point average falls below 2.00. Should a student attain good academic standing (2.00), his or her probationary status is removed. Students on probation are required to contact the Student Development Center as a condition of the probation.

Suspension. Students on probation are subject to suspension if at the end of spring semester the grade-point average falls below the minimum level stated in the following table:

Hours attempted	Cumulative grade point average
12	0.000
24	1.600
36	1.700
48	1.800
60	1.900
72	1.940
84	1.960
96	1.980
108	1.990
120	2.000

Each transfer student must meet the academic standing requirements shown in the admission section of this catalog. For the purposes of measuring hours attempted, the number of hours used shall be the total of transfer credit hours accepted by USC and the number of hours attempted at USC.

Students who have been suspended are not eligible to re-enter for a period of two semesters after the date of suspension. Students suspended for poor scholarship are considered on probationary status upon return to the university. Such students remain under the catalog in effect at the time they entered the university. If they exceed the term of the suspension before returning to student status, they re-enter the university under the catalog in effect at the time of readmission.

Appeals. Any student wishing to appeal their suspension must submit a letter of appeal to the Student Academic Standings Committee. All letters must be post-marked no later than July 20. Students submitting appeal letters after July 20 and before October 15, will be considered for spring semester admission. Appeal letters should be addressed to the Student Academic Standings Committee and sent to the Office of Admissions. It is the student's responsibility to initiate the appeals process.

ATTENDANCE

Students are expected to attend all meetings of the classes for which they are enrolled unless excused by the instructor. No extensions of vacation periods are given to students, regardless of the location of their homes. Non-attendance at classes caused by late registration is considered the same as absence.

The university does not have a policy permitting a specific number of cuts or absences from class. It is left to the discretion of each instructor to set an attendance policy for his or her classes and to inform students of the policy.

It must be kept in mind that even though it is the student's responsibility to drop a class, faculty members have the right to drop a student for non-attendance.

ACADEMIC INTEGRITY

Any method of unauthorized assistance in preparing materials which a student submits as original work is considered cheating and constitutes grounds for dismissal. Instructors should use all practical means of preventing and detecting cheating. Any student judged to have engaged in cheating may receive a reduced grade for the work in question, a failing grade in the course or any other lesser penalty which the instructor finds appropriate.

CLASSROOM BEHAVIOR

The classroom instructor is responsible for all classroom conduct, behavior and discipline. Only enrolled students, administrative personnel and persons authorized by the instructor are permitted in classrooms and other instructional areas during scheduled periods. University policy and Colorado state law also prohibit all forms of disruptive or obstructive behavior in academic areas during scheduled periods of use or any actions which would disrupt scheduled academic activity. Use of classrooms and other areas of academic buildings during non-scheduled periods is permitted only in accordance with university practices. Anyone in unauthorized attendance or causing a disturbance during scheduled academic activity is asked to leave. If a person refuses such a request, he or she may be removed by the University Police and is liable to legal prosecution.

ACADEMIC APPEALS

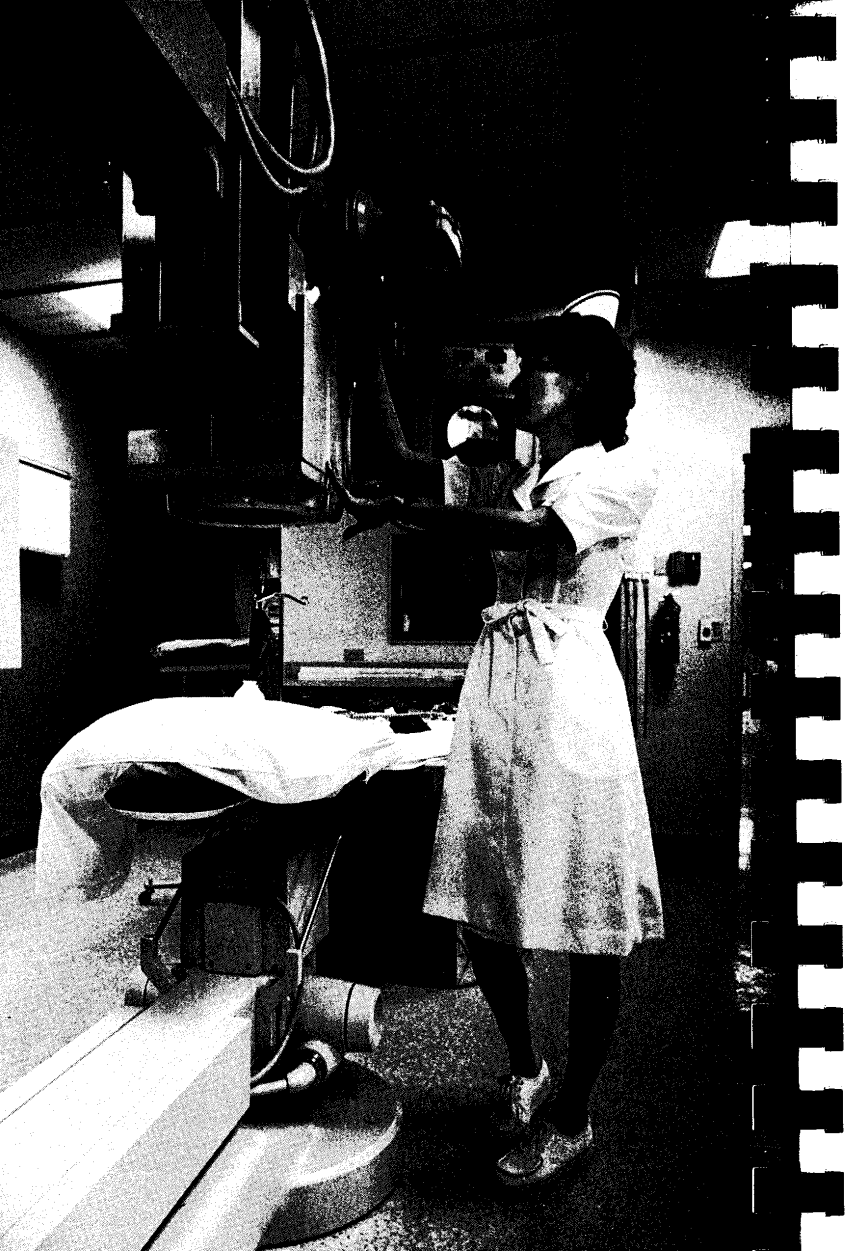
Students have the right to appeal any academic decision, including the assignment of grades. Final grades, however, are unalterable unless a grade change form is completed and signed by the instructor, head of the program and the dean. Academic appeals should be made first to the classroom instructor, next to the head of the program, then to the dean of the college involved. If a satisfactory resolution cannot be reached, a final appeal may be made to the vice president for Academic Affairs.

TRANSCRIPTS OF CREDIT

Official transcripts are issued by the Office of Registration and Records at the request of the student. The first transcript is free; for additional copies, a fee may be assessed.

Three days should ordinarily be allowed for production of transcripts. At the end of the semester grading period, a three-week delay should be expected.

Students who are not in good financial standing with the university are not issued transcripts until they have arranged to clear their financial obligations.



DEGREE REQUIREMENTS

BACCALAUREATE DEGREES

Candidates for bachelor's degrees, whether BA, BS or a specialized BS, such as BSBA, must satisfy the institutional requirements and general education requirements described below. Most students should plan to complete the university requirements in basic communications, speech communication and physical education in the freshman year and should plan to complete the general education requirements in the freshman and sophomore years. Students also must file an approved graduation planning sheet with the Office of Registration and Records before midterm of the semester prior to the one in which they plan to graduate.

INSTITUTIONAL REQUIREMENTS

1) Students must earn a minimum of 128 semester hours with at least a C grade point (2.00) average. The 128 semester hours must include at least six hours of English 110, 211 **or** 115, 216, two hours of Reading 120 and two hours of Speech Communication 101. The 128 hours must include a minimum of 40 hours in upper-division courses (numbered 300-499). Of the last 32 semester credits earned immediately preceding graduation, no more than 16 may be completed at other colleges or universities. A minimum of 30 semester hours of resident instruction as approved by the program of the major must be earned in residence at USC.

2) Students must fulfill the requirements for demonstration of basic competencies described under academic policies of this catalog.

3) Students must complete the requirements for an approved degree program (major) and a minor or area of concentration outside the major. Candidates for a bachelor of science degree must earn a minimum of 48 hours in the college of their major. Candidates for a bachelor of arts degree must satisfy the foreign language requirement.

4) All financial obligations must be satisfied.

GENERAL EDUCATION REQUIREMENTS

The general education requirement for graduation is 30 semester hours. A minimum of 10 hours of credit must be earned in each of Groups I, II and III. The credit must be earned through at least two subgroups within each group.

Credits earned in the student's declared major do not count toward fulfilling either the 10-hour requirement within Group I, II or III, or the requirement for taking courses in at least two subgroups. For example, psychology majors may not count PSYCH 101, 102, 211 or 212 toward general education requirements, and must take 10 hours of courses other than psychology in at least two subgroups in Group II.

Group I

Subgroup		
A	ART	100, 101, 102, 103
B	FL	100, 111, 112, 125, 126, 146, 147, 161, 162, 181, 182, 191, 192, 281, 282
C	ENG	130, 131, 132, 210, 212, 221, 222, 231, 232, 254, 260
D	MACOM	101, 102, 215
E	MUSIC	101, 118, 119, 120, 121, 122, 126
F	PHIL	100, 101, 103, 105, 108, 109, 110, 121, 122, 123, 205, 220
G	SPCOM	100, 105, 211, 212, 214, 221, 222, 231, 241, 242, 249
	MILSC	211
H	SPCOM	111, 131, 135, 216, 217
I	IED	130, 135
J	CS	220
K	IDH	201

Group II

Subgroup		
A	PSYCH	101, 101L, 110, 130, 151, 211, 212, 220, 221, 231
B	MACOM	280
	NSG	117
	SOCAN	101, 102, 103, 104, 105, 106, 107, 108, 152, 153, 201, 202, 203, 251, 252
	SOCSC	151, 208, 209, 231
C	GEOG	113, 201, 210
	HIST	101, 102, 185, 201, 202, 211
	MILSC	210
	POLSC	100, 101, 102, 104, 150, 185, 201, 202, 250
	SW	100, 101
D	ACCTG	210
	BUSAD	100
	ECON	101, 201, 202
E	CS	101, 201, 202, 210, 230
F	IDH	101, 102

Group III

Subgroup		
A	AG	101, 101L, 262, 262L
	BIOL	101, 112, 121, 132, 141, 162, 191, 191L, 201, 201L, 202, 202L, 221, 221L, 223, 223L, 224, 224L, 262, 262L
	PSYCH	120
	SOCAN	104
B	CHEM	101, 111, 111L, 121, 121L, 122, 122L
C	CST	101, 102
	EET	108, 109
	MET	111
D	EN	103, 105, 106
	GEOG	102, 103, 281
	GEOL	101, 123
E	MATH	109, 121, 122, 124, 126, 131, 132, 156, 221, 233, 240, 241, 245
F	PHYS	100, 110, 121, 121L, 130, 131, 132, 201, 201L, 202, 202L, 221, 221L, 222, 222L
G	IDH	202

MAJOR REQUIREMENTS

Every degree-seeking student must elect a major and successfully complete all the requirements of that major prior to receiving a bachelor's degree. The minimum number of semester hours required varies by major but must include a departmentally approved program of **at least 30 semester hours of coursework in the program.**

Emphasis areas. Programs may specify emphasis areas within majors at the bachelor's degree level and should record the titles with the Office of Registration and Records. Students may decide to select emphasis areas within a major (for example, news-editorial within mass communications) and may have the emphasis areas recorded on their transcripts with departmental approval.

Minors. In addition to a major, every four-year, degree-seeking student must complete either a minor or a concentration of interrelated courses totaling at least 20 semester hours. Minors consist of a sequence of courses in a specific academic discipline which are established by the department or program containing the academic major. Students taking double majors satisfy the minor requirement.

Area of concentration. An area of concentration is a selection of interrelated course offerings which is established in support of a specific academic major by the department of the student's major. Concentrations of courses must be taken outside the student's specific academic major.

Double majors. Students may seek a bachelor's degree with a double major program. Students with a double major must satisfy the requirements of both (but no more than two) majors as stated by both departments involved. Double majors are not offered at the master's degree level.

The student's final transcript will identify the completion of all majors, emphasis areas within majors and all minors.

After a degree has been awarded, the Office of Registration and Records does not change the academic record to add emphasis areas (minors or areas of concentration) or double majors.

Students planning to complete requirements for more than one major should seek a double major under one degree rather than plan to ask for a change of record after graduation.

BACHELOR OF ARTS: FOREIGN LANGUAGE REQUIREMENT

Students seeking the degree of bachelor of arts must complete successfully a minimum of six semester hours of approved foreign language or linguistics.

Courses satisfying this requirement are two semesters (six semester hours) of "introduction to" a foreign language (six semester hours) or two semesters of beginning French, German or Spanish (ten semester hours). There are separate "introduction to" courses in French, German, Italian, Russian and Spanish. Other languages such as Arabic, Chinese, Farsi, Japanese and Portuguese are taught when enrollment permits.

A student with an adequate background in a language may earn credit by successfully completing an achievement test during the first week of classes.

Those not desiring to study a foreign language have the alternative to complete one semester of FL 100: Introduction to Comparative Linguistics (three semester hours), plus SOCAN 106: Language, Thought and Culture (three semester hours). International students may substitute six semester hours of basic competency courses above ENG 109.

SECOND BACHELOR'S DEGREE

Students possessing a baccalaureate degree from an institutionally accredited college or university who desire a second baccalaureate degree in a specialized field may work toward the second degree provided they have the approval of the department from which the second degree is to be earned. Students must earn a minimum of 30 semester hours at the university in addition to the credit hours already earned for the first bachelor's degree before they can receive a second. A cumulative grade point average of at least 2.00 is required for all work completed at USC toward the second degree. The general education and institutional requirements are considered complete for students in this classification.

Candidates for second degrees are eligible for the Dean's List and for graduation with distinction.

CURRICULUM

The University of Southern Colorado does not offer all the classes listed within this catalog either each semester or each year.

The following pages provide brief descriptions of departmental offerings, and the career, professional or graduate opportunities open to students who complete degrees in each department's field.

A sample four-year program is outlined for a major in each department, followed by a list of course descriptions. Students should be aware that the program outlines are only examples and that many variations and specially planned programs are available. **Each student should contact a program adviser in the chosen major field as soon as possible and should locate a new adviser promptly in case of a change of major.**

Clock hour distribution and credits. In the course descriptions, the distribution of credit between lecture and laboratory, lecture-demonstration, or lecture-studio class hours per semester is indicated as follows: in the example below, the figure outside the parentheses in 4(2-4) indicates the number of total credits assigned to the course. Inside the parentheses, the first number indicates the clock hours spent in lectures per week and the second number indicates the clock hours spent in the laboratory, demonstration, or studio experiences per week. Two examples:

CET 311 Advanced Surveying I 4(2-4)
Civil Engineering Technology 311 carries four hours of credit and meets two hours per week in a lecture situation and four hours in required laboratory.

HIST 101 World Civilization to 1500 5(5-0)
History 101 carries five hours of credit, for which the class meets five hours per week in a lecture situation. No time is devoted to laboratory work.

One hour of lecture per week usually equals one credit hour per semester, while it takes two or three hours of laboratory per week to equal one semester credit hour.

Variable credit courses. (1-3 VAR) indicates variable credit; the minimum and maximum credit limitations per semester are shown. An example:

ART 494 Field Experience (1-5 VAR) (When appropriate.) Prerequisite Senior standing and permission of instructor.
Off-campus individual experience providing transition from classroom instruction to on-the-job experience. Supervised by instructor and job supervisor.

Prerequisites. A requirement which must be fulfilled before a student can enroll in a particular course. Permission of the instructor for a student to attend a class is implied when the student has met the prerequisites specified by the department.

Corequisites. A requirement which must be taken concurrently with another course of instruction.

Course numbering. Course numbering is based on the content level of material presented in the course, as follows:

100-299 Courses primarily for freshman and sophomore students
300-499 Courses primarily for junior and senior students
500-599 Courses primarily for students enrolled in master's degree programs or the equivalent. Senior students may enroll if they have submitted approved graduate planning sheets.

Course Cross-listing. Courses can be offered by either department. An example: AG 381 (BIOL 381) Entomology 2(2-0).

Course Prefixes. Courses offered by schools or departments are indicated by the following prefixes:

ACCTG	—Accounting
AG	—Agriculture
APSM	—Auto Parts Service Management
ART	—Art
BUSAD	—Business Administration

BBE	—Bilingual Bicultural Education
BIOL	—Biology
CET	—Civil Engineering Technology
CST	—Computer Science Technology
CHEM	—Chemistry
CS	—Chicano Studies
ECON	—Economics
ED	—Education
EET	—Electronic Engineering Technology
EN	—Engineering
ENG	—English
FIN	—Finance
FL	—Foreign Language
GEOG	—Geography
GEOL	—Geology
HIST	—History
IED	—Industrial Education
IDH	—Interdisciplinary Honors
MACOM	—Mass Communications
MATH	—Mathematics
MEDT	—Medical Technology
MET	—Mechanical Engineering Technology
MGMT	—Management
MILSC	—Military Science
MKTG	—Marketing
MUS	—Music
NSG	—Nursing
PE	—Physical Education
PHIL	—Philosophy
PHYS	—Physics
POLSC	—Political Science
PSYCH	—Psychology
RDG	—Reading
REC	—Recreation
SOCAN	—Sociology/Anthropology
SOCSC	—Social Science
SPCOM	—Speech Communication and Theatre
SW	—Social Work

ACCOUNTING

Faculty: Haskin, Hammond, Peterlin

The accounting program offered by the School of Business in the College of Professional Studies leads to the bachelor of science in business administration (BSBA) degree with a major in accounting. The primary objective is to provide an academic program that covers the conceptual basis of accounting as well as the application of accounting doctrine in current accounting practice. The programs of study are functional in that they provide the broad base of knowledge required by the accounting profession and allow the students to concentrate in their area of interest by selecting either the public accounting emphasis area or the industrial/governmental emphasis area.

The public accounting emphasis is designed for students seeking careers in public accounting and intending to sit for the national Certified Public Accountants (CPA) examination. The program is accredited by the Colorado State Board of Accountancy. Students completing it qualify under the education requirements of Colorado law for the examination, which they should plan to take during the last semester of their senior year.

The industrial/governmental emphasis is designed for students seeking accounting careers in industry and/or government. It provides basic competencies in financial and cost accounting, auditing, taxation, information systems, and management planning and decision techniques. Students completing this program are encouraged to sit for the Certified Management Accountants (CMA) examination or the Certified Internal Auditor (CIA) examination.

In addition to the academic program, various opportunities are available for students to gain some insight into the practical aspects of the accounting profession. Accounting majors are expected to participate in the National Association of Accountants student chapter's activities and the technical sessions scheduled throughout the school year. Student night programs are sponsored by the Colorado Society of Certified Public Accountants, the National Association of Accountants, and the American Society of Women Accountants. Student memberships are available in the National Association of Accountants, the American Accounting Association, and the American Society of Women Accountants. Tax students should participate in VITA (Volunteers in Tax Payers Assistance). For selected students an internship program is available.

Each year outstanding senior accounting students are recognized for their academic achievements through an awards program. Awards are presented by the Colorado Society of Certified Public Accountants—Gold Key Award, American Society of Women Accountants—Outstanding Woman Graduate, the National Association of Accountants and the Association of Governmental Accountants. Scholarships for accounting majors are available from these professional organizations. Other scholarships are available through the University.

School of Business policies. The standard semester course load for full-time students is 16 credit hours. Students must have permission to take courses in which they do not meet the required prerequisites, or they risk being withdrawn and/or losing credit for those courses.

To fulfill graduation requirements, students must obtain a minimum grade average of C (2.0 GPA) in the courses taken within the School of Business, earn C grades or higher in all courses within their major and in MATH 121. **A required course in the major area may only be repeated once.**

Students requesting credit for course work taken at another institution are advised that the program has a transfer policy and that students are responsible for having their credits approved according to the policy.

The School of Business **requires** for a baccalaureate degree in accounting that 20 of the last 32 hours just prior to graduation must be taken in residency. The program in accounting requires that a minimum of 18 semester hours of junior and senior accounting courses be taken in residency.

All courses applied toward the major must be approved by the student's adviser.

All students planning to major in the School of Business area are classified as Pre-business upon enrollment in the university. During the first two years of their academic program, students will satisfy all institutional requirements, a major portion of the general education requirements and the Pre-business core. The Pre-business core consists of computer and information systems, financial and managerial accounting, macro and micro economics, business statistics, business communications, business law and the institutional requirements. Upon completion of the Pre-business core, the student makes a formal application to the accounting program for admission to upper-division courses in the School of Business. Application forms are available in the program office. Students are responsible for adhering to Pre-business requirements.

MAJORS

The **required** accounting schedule is:

Freshman Year			Credits
BUSAD	160	Intro to Computers and Information Systems	3
ENG	110, 211	Composition I and II	6
MATH	121	College Algebra	4
SPCOM	101	Expository Speaking	2
		General Education	17
			32

Sophomore Year			Credits
ACCTG	201	Principles of Financial Accounting	4
ACCTG	202	Principles of Managerial Accounting	4
BUSAD	220	Principles of Business Law	3
BUSAD	260, 261	Business Statistics I and II	6
BUSAD	270	Business Communications	3
ECON	201	Principles of Macroeconomics	3
ECON	202	Principles of Microeconomics	3
		General Education	6
			32

PUBLIC ACCOUNTING

Junior Year			Credits
ACCTG	301	Int Acctg I	4
ACCTG	302	Int Acctg II	4
ACCTG	311	Fed Income Tax	4
ACCTG	320	Cost Acctg	4
ECON	310	Money and Banking	3
FIN	330	Corp Fin Mgmt	3
MGMT	310	Prin of Mgmt	3
MKTG	340	Prin of Mktg	3
		General Education	4
			32

INDUSTRIAL/GOVERNMENTAL ACCOUNTING

Junior Year			Credits
ACCTG	301	Int Acctg I	4
ACCTG	311	Fed Income Tax	4
ACCTG	320	Cost Acctg	4
CST	220	COBOL	4
ECON	310	Money and Banking	3
FIN	330	Corp Fin Mgmt	3
MGMT	310	Prin of Mgmt	3
MGMT	365	Mgmt Info Systems	3
MKTG	340	Prin of Mktg	3
		General Education	1
			32

Senior Year			Credits				Credits
ACCTG	401	Adv Fin Acctg	4	ACCTG	411	Oper Auditing	2
ACCTG	403	Acctg Theory	4	ACCTG	430	Actg Info Sys	4
ACCTG	404	CPA Law Review	3	ACCTG	440	Fund Acctg	4
ACCTG	410	Auditing	4	MGMT	366	Org Data Sys	3
ACCTG	440	Fund Acctg	4	MGMT	465	Oper Research	3
MGMT	485	Mgmt Strat/Policy	3	MGMT	485	Mgmt Strat/Policy	3
		General Education	6			General Education	10
		Electives	4			Electives	3
			32				32

Accounting majors may not retake a course offered by the accounting department more than once to improve their academic GPA or satisfy course prerequisites.

MINOR

A baccalaureate degree student may minor in accounting by completing 24 hours of approved accounting courses. ACCTG 201-202-301-and 302 are required. The remaining 8 hours of accounting courses must be approved by the student's adviser.

Accounting majors and minors note:

Prerequisite requirements are not fulfilled unless minimum grade of C is met in all accounting courses.

ACCTG COURSES

UNDERGRADUATE

ACCTG 201 Principles of Financial Accounting 4(4-0) Prerequisite Sophomore standing.
The accounting model, measurement and valuation processes involved, classification systems, and terminology of financial reporting along with selected tax implications essential to interpretation and use of financial statements.

ACCTG 202 Principles of Managerial Accounting 4(4-0) Prerequisite ACCTG 201.
Managerial uses of accounting information, including cost based decision making, differential accounting and responsibility accounting.

ACCTG 210 Taxes for Individuals 2(2-0)
Internal Revenue Code with analysis of political, economic and social ramifications of the law with problem material in tax return preparation solutions. For non business majors. No graduation credit for accounting majors. GEN. ED. IID.

ACCTG 301 Intermediate Accounting I 4(4-0) Prerequisite ACCTG 202.
Working capital items, non-current assets, equities and compound interest concepts.

ACCTG 302 Intermediate Accounting II 4(4-0) Prerequisite ACCTG 301.
Pensions, leases, bonds, price changes, presentation and interpretation of financial statements, accounting changes, consignments sales, segment reporting, interim reporting and EPS.

ACCTG 311 Federal Income Tax 4(4-0) Prerequisite ACCTG 202.
Rules and regulations of the tax law as applied to income recognition, exclusions from income, deductions from income and credits pertaining to individuals, partnerships and corporations.

ACCTG 320 Cost Accounting 4(4-0) Prerequisite ACCTG 202.
Accounting procedures applicable to industries with emphasis on job order, process costs, standard cost and profit planning including differential costs, internal profit and price policies and capital budgeting.

ACCTG 401 Advanced Financial Accounting 4(4-0) Prerequisite ACCTG 302.
Application of fundamental theory to partnerships, joint ventures, foreign operations, consolidated statements and business combinations.

ACCTG 403 Accounting Theory and Ethics 4(4-0) Prerequisite ACCTG 302, 320.
Accounting theory—current concepts and developments as indicated by APB, FASB—and the Code of Professional Ethics applied to the practice of public accounting.

ACCTG 404 CPA Law Review 3(3-0) Prerequisite Senior standing.
Business law as found in the Business Law section of the Uniform CPA examination.

ACCTG 410 Auditing 4(4-0) Prerequisite ACCTG 302.
Auditing standards, procedures, programs, working papers and internal control are covered conceptually and with practical case studies.

ACCTG 411 Operational Auditing 2(2-0) Prerequisite ACCTG 202.
Emphasis on the tools employed by the internal auditor to ensure the effective functioning of the organization.

ACCTG 430 Accounting Information Systems 4(4-0) Prerequisite ACCTG 301, CST 220.
Examination of accounting systems as a component of the total business information process. Particular attention given to the accountant's role in simplification, internal control and computerized systems.

ACCTG 440 Fund Accounting 4(4-0) Prerequisite ACCTG 202.
A study of the fund accounting methods employed in not-for-profit institutions, government and governmental agencies.

ACCTG 491 Special Topics (1-3 VAR)
Selected accounting topics which respond to specific and timely needs of students.

ACCTG 495 Independent Study (1-3 VAR) Prerequisite Senior accounting student with permission of student's adviser.

ACCTG 498 Internship (1-6 VAR) Prerequisite Junior status, accounting major, with permission of assistant dean, School of Business.
Supervised field accounting work in selected business, social and governmental organizations that will enhance the student's training in accounting; supplemented by written research and reports.

GRADUATE

ACCTG 510 Managerial Accounting 3(3-0) Prerequisite Graduate standing.
Accounting concepts and methods utilized in managerial planning, budgeting, controlling, and evaluating to optimize decision-making.

ACCTG 591 Special Topics 3(3-0)
Critical review and discussion of relevant accounting topics.

ACCTG 592 Research (1-6 VAR)
The student will work under the close supervision of a graduate faculty member in basic or applied research resulting in a thesis or report of high academic quality.

ACCTG 596 Thesis Research (1-6 VAR)
Research conducted under the direction of graduate faculty.

ANTHROPOLOGY *(see Sociology/Anthropology)*

ART

Faculty: Brassill, Hench, Jensen, Marino, Monteverde, Sajbel, Wands

The program in art offers courses leading to the degrees of bachelor of arts (BA) and bachelor of science (BS). An art education program is available for future teachers. The program also offers minors for students majoring in other disciplines and participates in the degree programs in education. Many art courses are specifically designed for non-art majors. Facilities include well-equipped studios, darkrooms, a small gallery and computer graphic equipment.

Graduates of art programs may pursue careers as studio or commercial artists, work in museums or galleries or combine several of these activities. They may also teach at the college level with further study in art and art history.

MAJORS

All art majors must complete the following foundation courses: Art 101, 102, 115, 116, 141, 142, 210 and 410 for a total of 18 semester hours.

Foundation courses are prerequisite to all other courses offered by the program for the BS and BA art majors, with the exception of ART 410 (which is taken in the senior year). Other exceptions may be approved by the art staff with consent of the instructor.

Art majors are assigned art program advisers with whom they must consult each semester before registration.

The BA program is designed for students in either studio art or art history and requires a minimum of 40 hours of art courses, 18 of which must be in the foundation courses and at least 6 of which must be in art history. Students in art education must take 48 hours in art to fulfill state certification requirements.

The BS program is designed for students seeking a higher level of professional training in the emphasis areas of art. All emphasis areas require a minimum of 48 hours in art courses, including the foundation courses. The program is designed for each student in consultation with the head of the program or an adviser for the chosen emphasis area.

The program offers four-year emphasis areas in ceramics, drawing, enameling, graphic design, art history/museum studies, jewelry, painting, sculpture, K-12 elementary and secondary art specialist and 7-12 secondary art specialist.

A typical art schedule is:

Freshman Year			**Credits**
ART	101, 102	Art Survey I and II	6
ART	115, 116	Design I and II	6
ART	141, 142	Beginning Drawing I and Figure Drawing II	4
ART	210	Career Art Orientation	1
ENG	110, 211	Composition I and II	6
PE	100	PE Orientation	2
RDG	120	College Reading	2
SPCOM	101	Expository Speaking	2
		General Education	3
			32

Sophomore Year			**Credits**
ART	276	Photography	3
ART	281	Introduction to Graphic Design	3
ART	274	Computer Imaging	3
ART	233	Sculpture	3
		Electives or Minor	9
		General Education	12
			33

Junior Year			**Credits**
ART	397	Studio (Graphic Design recommended)	4
ART	381	Graphic Design II	3
ART	382	Illustration	2
ART	475	Film Making	3
ART	374	Computer Imaging	3
		Electives or Minor	10
		General Education	9
			34

Senior Year			Credits
ART	410	Art Career Orientation	1
ART	495 or 494	Independent Study or Field Experience	3
		Electives (Upper Division)	22
		General Education	6
			32

The above sample schedule reflects a program leading to a BS degree with a graphic design emphasis. Changes would be required for other sequence areas. Majors should consult the art office for specific course requirements for each of the emphasis areas.

MINOR

A minor in art will include the foundation courses, ART 141, ART 115 or 116 and one art history course, plus an additional 16 hours of art selected in consultation with an art adviser. A total of 24 hours is required for an art minor.

ART COURSES

UNDERGRADUATE

ART 100 Introduction to Art 3(3-0)
Art forms, meaning and function across cultures and through time. GEN. ED. IA.

ART 101 Art History Survey I 3(3-0)
Development of style, iconography and function of art from Prehistoric times to Gothic. GEN. ED. IA.

ART 102 Art History Survey II 3(3-0)
Development of style, iconography and function of art from Gothic to present time. GEN. ED. IA.

ART 103 Art History Survey III 3(3-0)
Development of style, iconography and function of art in non-western cultures. GEN. ED. IA.

ART 115 Design I 3(1-5)
Basic course attempting to establish the foundations of visual order.

ART 116 Design II 3(1-5)
Basic course with emphasis on 3-dimensional.

ART 118 Art Non-Major 3(0-6)
Studio course for students interested in practicing specific areas of the arts, i.e. ceramics, drawing, film, jewelry, painting, photography, printmaking, sculpture and watercolor.

ART 141 Beginning Drawing I 2(0-4)
Introductory course developing an individual's perception and technical skills in rendering on a two-dimensional surface.

ART 142 Figure Drawing II 2(0-4)
Studio class in study of the human figure.

ART 145 Free Hand Descriptive Drawing 2(0-4)
One and two point perspective drawing. Free hand hard line drawings using various projections and illustrative techniques.

ART 201 Studio Materials 1(0-2)
As above, sections in clay, fiber, metal, wood and museum practices.

ART 202 Art Processes 1(0-2)
Similarities and differences within visual arts. Sections in sculpture, painting, ceramics, photography and criticism and theory.

ART 210 Art Career Orientation 1(1-0)
Guided development of individual job objectives.

ART 233 Sculpture I 3(0-6)
Basic problems in sculpture relating specific concerns of visual form and processes.

ART 234 Painting I 3(0-6) Prerequisite Foundation.
Application of materials and techniques to a visual idea through the use of color theories, surface awareness and compositional emphasis.

ART 235 Painting II 3(0-6) Prerequisite Foundation.
Continuation of above at higher level of technical and visual pursuit.

ART 236 Watercolor Painting 3(0-6) Prerequisite Foundation.
Water media as a specialized approach to painting.

ART 237 Collage 1(0-2) Prerequisite Foundation, or permission of instructor.
Paper collage and mixed media as an approach to painting.

ART 241 Drawing III 2(0-4) Prerequisite ART 141, 142.
Advanced course in pursuit of finished drawings.

ART 242 Figure Drawing IV 2(0-4) Prerequisite ART 142.
Continuation of ART 142 with expanded interpretational and compositional awareness.

ART 245 Ceramics I 3(0-6) Prerequisite Foundation.
Essential skills in ceramic processes. Emphasis on form and function as related to students' needs and creative intent.

ART 251 Fundamentals for Wood I 3(0-6) Prerequisite Foundation.
Techniques of hand and power tools for producing sculpture and useful forms in wood and related materials.

ART 255 Jewelry Techniques I 3(0-6) Prerequisite Foundation.
Fabrication and methods of jewelry construction. Use of a variety of techniques and of related materials leading to independent studio work.

ART 260 Weaving 3(0-6) Prerequisite Permission of instructor.
Techniques of loom and non-loom weaving.

ART 270 Relief Printmaking (1-3 VAR)
Basic processes of printing from raised surfaces.

ART 274 Computer Imaging (1-3 VAR)
Use of micro computers to develop visual images.

ART 276 Photography (1-3)
Photography as an art form in itself as well as an adjunct to other art media.

ART 281 Introduction to Graphic Design 3(1-4) Prerequisite Foundation.
Tools, design elements and processes that concern advertising and communication designers.

ART 282 Calligraphy (1-3 VAR)
Styles of hand lettering and layout of calligraphic forms.

ART 291 Special Topics (1-5 VAR)
Study and/or activity not covered by regular offerings.

ART 301 Art History: Southwest Native America 3(3-0) Prerequisite Permission of instructor.
Development of style, iconography and function of Indian art from Prehistoric to present time.

ART 302 Art History of Pre-Columbian America 3(3-0) Prerequisite Permission of instructor.
Development of style, iconography and function of art from Prehistoric times to arrival of Spanish in Middle and South America.

ART 303 Art History of Latin America 3(3-0) Prerequisite Permission of instructor.
Development of style, iconography and function of art from time of Spanish conquest of Latin America to present.

ART 332 Modeled Cast Sculpture 3(0-6) Prerequisite Foundation.
Techniques of producing three-dimensional form though modeling, mold-making and casting in a variety of materials.

ART 333 Sculpture II 3(0-6)
Processes for producing sculpture via the subtractive methods.

ART 341 Portrait Painting 1(0-2) Prerequisite ART 235.
Representational painting using portrait models.

ART 342 Figure Painting 1(0-2) Prerequisite ART 235.
Composition and environmental additions to the figure.

ART 343 Landscape Painting 1(0-2) Prerequisite ART 235.
Perception and interpretation of nature on location from sketches.

ART 345 Ceramics II 3(0-6) Prerequisite ART 245.
In-depth development of specific techniques concerning the nature of ceramics. Perfection of skills and personalization of style.

ART 346 Production Pottery 3(0-6) Prerequisite Permission of instructor.
Intensive experience in practical problems of production; emphasis on functional ware. Material, equipment, sales and procedure to establish a studio.

ART 351 Form in Wood II 3(0-6)
Sophisticated methods of working wood and related materials into sculpture and useful forms.

ART 355 Jewelry Techniques II 3(0-6) Prerequisite ART 255.
Various methods of constructing cast jewelry. In-depth course leading to independent studio work.

ART 356 Enameling Techniques I 3(0-6) Prerequisite ART 255.
Problems in limoges, champleve, cloisonne, as well as innovative approaches leading to independent studio work.

ART 357 Enameling Techniques II 2(0-4) Prerequisite Permission of instructor.
Applied jewelry design with emphasis on creativity and innovation. Brief coverage of the history of designing in jewelry and personal adornment.

ART 370 Advanced Relief Printmaking (1-3 VAR)
Basic processes of printing from raised surfaces.

ART 371 Intaglio (1-3 VAR) Prerequisite Foundation.
Basic processes of printing from raised and lowered surfaces.

ART 372 Lithography (1-3 VAR) Prerequisite Foundation.
Processes of planographic printing from drawings made on stone.

ART 373 Serigraphy (1-3 VAR) Prerequisite Foundation.
Processes of screen printing including preparation of photographic stencils.

ART 374 Computer Imaging (1-3 VAR)
Use of computers to develop visual images for advertising and commercial application.

ART 375 History of Art Film 3(3-0)
Significant art films illustrating the development of style, subject matter and techniques of film making from late 19th century to the present.

ART 376 Photography (1-3 VAR)
Photography as an art form in itself as well as adjunct to other art media.

ART 377 Principles of Elementary Art Education 2(2-0)
Lecture course dealing with the development of visual concepts within the child.

ART 378 Materials and Techniques in Art for the Elementary Schools 2(1-2)
Laboratory experience in use of art materials in the elementary classroom. To be taken simultaneously with Art 377.

ART 379 Principles of Secondary Art Education 2(2-0)
Lecture course dealing with theories and methods of art education beyond the elementary school.

ART 381 Graphic Design II 3(1-4) Prerequisite ART 281.
Layout and the preparation of camera-ready mechanicals.

ART 382 Illustration 2(0-4) Prerequisite ART 381.
Specialized course in the use of images rendered in varying techniques to express ideas.

ART 383 Exhibition Design 2(0-4) Prerequisite Permission of instructor.
Communication and design principles applied to the display of objects. Special attention to museum problems.

ART 384 Papermaking (1-3 VAR)
Techniques of making paperpulp, sheets of paper, various types of molds for paper casting.

ART 397 Studio Series 3(0-6) Prerequisite When appropriate.
Advanced studio offerings for students who have completed all other course offerings in that specific discipline. Scheduled concurrently with lower division studios. Repeatable once.

ART 401 Art History: Greek, Roman, Byzantine 3(3-0) Prerequisite Permission of instructor.
Development of style, iconography and function of art in Aegean and Mediterranean civilizations.

ART 405 Art History: Modern 3(3-0) Prerequisite Permission of instructor.
Development of style and iconography of 19th and early 20th century art in Europe and United States.

ART 406 Art History: Contemporary 3(3-0) Prerequisite Permission of instructor.
Development of style and iconography of contemporary art.

ART 407 Art History: Museum Training 3(3-0) Prerequisite Permission of instructor.
Curating, conservation or presentation and interpretation of art from various periods and cultures.

ART 410 Art Career Orientation 1(1-0) Prerequisite Senior standing.
Senior level evaluation of personal plans toward job objectives.

ART 420 Multi-Media 3(3-0)
Studio course in the creation of images and ideas through combined materials, and its special appropriateness as a technique in art.

ART 445 Glaze Calculation 1(0-2) Prerequisite Permission of instructor.
The simple necessities for forming glazes from earth oxides. Studio vesting, firing and practical application. Chemistry not a prerequisite.

ART 446 Kiln Construction 1(0-2) Prerequisite Permission of instructor.
Building and designing all types of kilns. Fuel and material sources. Practical experience by constructing a kiln.

ART 447 History of Ceramics 1(1-0) Prerequisite Permission of instructor.
World view of ceramics as related to the potters' tradition. Technical developments, style trends and related historical events.

ART 475 Film Making 3(1-4) Prerequisite Permission of instructor.
Film as a means of personal expression.

ART 478 Art Education Methods Application Lab 2(0-4) Prerequisite ART 377 or ART 379.
Laboratory situation in the application of theories and methods of art education.

ART 481 Communication Graphics 3(1-4) Prerequisite Permission of instructor.
Pursuit of the design of words and images into the world of motion in TV and film.

ART 491 Special Topics (1-5 VAR)
Study and/or activity not covered by regular offerings. Repeatable.

ART 494 Field Experience (1-5 VAR) (When appropriate.) Prerequisite Senior standing and permission of instructor.
Off-campus individual experience providing transition from classroom instruction to on-the-job experience. Supervised by instructor and job supervisor.

ART 495 Individual Projects (1-5 VAR) Prerequisite Junior or senior standing and permission.
On-campus individual experience in which the student works under tutorial arrangement with instructor and has regular conferences.

ART 496 Cooperative Education Placements (1-4 VAR) Prerequisite Permission of instructor.

ART 497 Studio Series 3(0-6) Prerequisite ART 397.
Further advanced sections of studio offerings. See Studio Series. Repeatable once.

GRADUATE

ART 500 Workshop (1-5 VAR) Prerequisite Permission of instructor and graduate standing.
Advanced course in new materials and techniques using multi-media sources. Concepts and ideas explored as an integral part of the workshop.

ART 591 Special Topics (1-3 VAR)
Study and/or special activity not covered by regular offerings. May include any offerings from the major emphasis areas in ceramics, drawing, enameling, graphic design, art history/museum studies, jewelry, painting and sculpture.

AUTOMOTIVE PARTS AND SERVICE MANAGEMENT

Faculty: Martinet, Mason, Wade

The automotive parts and service management program is a bachelor of science (BS) degree program designed to provide the student with an in-depth technical knowledge of the automobile and a broad range of management skills as applied in the modern automotive business. The program emphasizes personnel supervision, financial analysis, customer relations, warranty administration, sales promotions, techniques of technical problem-solving, service dissemination, marketing, merchandising and distribution methods used by the automotive aftermarket, automotive manufacturer and import industries. There are many opportunities for men and women in this field. The graduating candidate must have a grade of C or above in each course in the major area of study.

MAJOR

A typical automotive parts and service management schedule is:

Freshman Year			**Credits**
APSM	105	Introduction to the Parts and Service Industry	2
APSM	115	Automotive Engine Design and Operation	4
APSM	125/125L	Auto Suspension and Brake System and Lab	4
APSM	135/135L	Auto Fuel Systems and Exhaust Emissions and Lab	4
APSM	155	Automotive Jobber and Dealer Parts Operation	5
APSM	165	Industrial Equipment and Heavy Equipment Parts	2
PE	100	PE Orientation	2
RDG	120	College Reading	2
SPCOM	101	Expository Speaking	2
		General Education	6
			33

Sophomore Year			**Credits**
APSM	205	Automotive Jobber Distribution and Merchandising	5
APSM	215/215L	Automotive Power Trains and Drive Lines	4
APSM	245/245L	Automotive Electrical Systems/Lab	4
CHEM	111/111L	Principles of Chemistry	4
CST	102	Programming w/BASIC	3
ECON	201	Principles of Economics	3
ENG	110 or 115	Composition I or Tech and Scientific Comm I	3
ENG	211 or 216	Composition II or Tech and Scientific Comm II	3
MET	152	Applied Physical Metallurgy	3
Group	I	Humanities	1
Group	II	Social Sciences	3
			36

Junior Year			Credits
ACCTG	201	Principles of Financial Accounting	4
ACCTG	202	Principles of Managerial Accounting	4
APSM	235	Machine Shop Equipment and Operation	3
APSM	255/255L	Automotive Electrical Systems II and Lab	3
APSM	305	Auto Parts and Service Management	3
APSM	345	Advanced Automotive Systems	5
BUSAD	220	Principles of Business Law	3
ECON	202	Principles of Microeconomics	3
PHYS	100	Physical Science	3
Group	I	Humanities	6
Group	II	Social Sciences	1
			35

Senior Year			Credits
APSM	325	Fuels and Lubricant Production, Marketing and Conservation	3
APSM	335	Automotive Shop Practices	5
APSM	405	Automotive Sales Principles and Practices	5
APSM	415	Automotive Expense Control and Analysis	5
FIN	330	Corporate Financial Management	3
MGMT	310	Principles of Management	3
MGMT	318	Personnel Management	3
MGMT	414	Small Business Management	3
MKTG	340	Principles of Marketing	3
			33

APSM COURSES

APSM 105 Introduction to the Parts and Service Industry 2(2-0)
Introduction to the industry from the viewpoint of history, social impact, organization structure, manpower needs and future growth.

APSM 115 Automotive Engine Design and Operation 4(2-4)
Design and operation of internal combustion engines, two and four cycle, rotary, diesel, gas, turbine, steam fuel cell and other future automotive power concepts.

APSM 125 Automotive Suspension and Brake Systems 3(3-0)
Design and theory of front and rear automotive suspensions, steering and brake systems.

APSM 125L Automotive Suspension and Brake Systems Lab 1(0-2) Corequisite APSM 125.
Laboratory to accompany APSM 125.

APSM 135 Automotive Fuel Systems and Exhaust Emissions 3(3-0)
Design and theory of automotive fuel systems, carburetion, fuel injection, turbo charging and supercharging. Also functions and design of automotive emission systems.

APSM 135L Automotive Fuel Systems and Exhaust Systems Lab 1(0-2) Corequisite APSM 135.
Laboratory to accompany APSM 135.

APSM 155 Automotive Jobbers and Dealer Parts Operation 5(5-0)
Automotive replacement parts books, inventory control systems, stock control levels and planographing — to improve stock flow.

APSM 165 Industrial Equipment and Heavy Equipment Parts 2(2-0)
How to select the correct piece of industrial equipment to do the job for the customer; also the use of parts catalogs and microfilm in heavy equipment.

APSM 205 Automotive Jobber Distribution and Merchandising 5(5-0)
Channels of distribution and merchandising for the automotive jobber from the manufacturer to the ultimate user.

APSM 215 Automotive Power Trains and Drive Lines 3(3-0)
Design and theory of standard and automatic transmissions, clutches, drivelines, differentials and transaxles.

APSM 215L Automotive Power Trains and Drive Lines Lab 1(0-2) Corequisite APSM 215.
Laboratory to accompany APSM 215.

APSM 225 Power Mechanics 3(3-0)
Power sources including steam, atomic, internal combustion, turbines, engines, plus transmission of power. (Not required for APSM majors.)

APSM 235 Machine Shop Equipment and Operation 3(2-2)
Functions of automotive machine shop equipment and basic automotive machine shop management.

APSM 245 Automotive Electrical Systems I 3(3-0)
Design and theory of operation of automotive electrical circuits; ignition, starting, charging and accessory circuits, with study of diagnostic equipment used to diagnose system malfunctions.

APSM 245L Automotive Electrical Systems I Lab 1(0-2) Corequisite APSM 245.
Laboratory to accompany APSM 245.

APSM 255 Automotive Electrical Systems II 2(2-0) Prerequisite APSM 245/ 245L Corequisite APSM 255L 2(2-0).
Design and operational theory of solid state ignitions systems and computer controlled systems including engine, braking, transmission, emission and comfort systems.

APSM 255L Automotive Electrical Systems Lab II 1(0-2) Corequisite APSM 255.
Laboratory to accompany APSM 255.

APSM 296 Cooperative Education Placement (1-5 VAR)
For APSM freshmen and sophomores. Industrial cooperative education work experience under direction of field supervisor and APSM faculty member.

APSM 305 Auto Parts and Service Management 3(3-0)
The industry from a management standpoint; business operations, personnel management, inventory and expense controls.

APSM 325 Fuels and Lubricant Production, Marketing and Conservation 3(3-0) Prerequisite senior standing or permission of adviser.
Petroleum industry; basic production processes, marketing techniques, alternate fuel sources and conservation techniques.

APSM 335 Automotive Shop Practices 5(2-6) Prerequisite APSM 115, 125, 135, 245/245L, 255/255L and 345.
Diagnosis of electrical, fuel, engine, brake and transmission systems, plus study of service management and service writer duties.

APSM 345 Advanced Automotive Systems 5(3-4) Prerequisite Junior standing or permission of instructor.
Theory and lab experience on new concepts in automotive electrical, fuel and suspension systems.

APSM 405 Automotive Sales Principles and Practices 5(5-0)
Application of techniques and principles unique to wholesale selling of replacement parts and accessories.

APSM 415 Automotive Expense Control and Analysis 5(5-0) Prerequisite ACCTG 201 and 202.
Introduction to specialized automotive accounting and inventory control methods. Emphasis on analyzing expenses and cutting costs in the retail automotive business.

APSM 491 Special Topics (1-5 VAR) Permission of instructor and supervision provided.
For advanced students. Each student selects, outlines and pursues a project.

APSM 496 Cooperative Education Placement (1-5 VAR)
For APSM juniors and seniors. Industrial cooperative education work experience under direction of field supervisor and APSM faculty member.

BUSINESS ADMINISTRATION

Faculty: Abebe, Angus, Dhatt, Noreiko, Reinier

The business administration program offered by the School of Business in the College of Professional Studies leads to the bachelor of science in business administration (BSBA) degree with emphasis in finance, management and marketing, computers and information processing, personnel and industrial relations, agriculture and industrial management. The programs of study are designed to provide students with the theoretical and conceptual basis of management and marketing as well as application skills to assume leadership roles in industry, government and education. The School of Business also offers a graduate program leading to a master's degree in business administration (MBA).

The undergraduate management major permits the student to select one of the emphasis areas listed above. Students may specialize in the industrial or governmental area of their interest in order to qualify for specific employment opportunities. The marketing major is designed to prepare the student for a marketing career in retailing, wholesaling, industrial or not-for-profit organizations. Both majors prepare students to assume managerial positions relatively soon after entering the world of employment.

The MBA Degree. The degree of Master of Business Administration is granted for the completion of a graduate program which 1) includes knowledge of the various functions of the business organization, and 2) synthesizes that knowledge into the practice of management. Students are expected to achieve an advanced understanding of the function of the executive and to develop a high degree of competence in transferring that knowledge to the actual work situation. (See section on Graduate Studies.)

School of Business policies. The standard semester course load for fulltime students is 16 credit hours. Students must have permission to take courses in which they do not meet the required prerequisites, or they risk being withdrawn and/or losing credit for those courses.

In order to fulfill graduation requirements, students must obtain a minimum grade average of C (2.0 GPA) in the courses taken within the School of Business, earn C grades or higher in all courses within their major and in MATH 121. **A required course in the major area may only be repeated once.**

Students requesting credit for course work taken at another institution are advised that the program has a transfer policy and that students are responsible for having their credits approved according to the policy.

The School of Business **requires** for a baccalaureate degree in business administration that 18 of the last 32 hours just prior to graduation must be taken in residency.

All courses applied toward the major must be approved by the student's adviser.

All students planning to major in the School of Business area are classified as Pre-business upon enrollment in the university. During the first two years of their academic program, students will satisfy a major portion of the general education requirements and the Pre-business core. The Pre-business core consists of computer and information systems, financial and managerial accounting, macro and micro economics, business statistics, business communications, business law and institutional requirements. Upon completion of the Pre-business core, the student makes a formal application to the program for admission to upper-division courses in the School of Business. Application forms are available in the program office. Students are responsible for adhering to Pre-business requirements.

MAJOR

The **required** business administration schedule is:

Freshman Year			**Credits**
ENG	110, 211	Composition I and II	6
BUSAD	100	Introduction to Business	3
BUSAD	160	Intro to Computers and Info Systems	3
MATH	121	College Algebra	4
SPCOM	101	Expository Speaking	2
		General Education	7-14
			32

Sophomore Year			**Credits**
ACCTG	201	Principles of Financial Accounting	4
ACCTG	202	Principles of Managerial Accounting	4
BUSAD	220	Principles of Business Law	3
BUSAD	260, 261	Business Statistics I and II	6
BUSAD	270	Business Communications	3
ECON	201	Principles of Macroeconomics	3
ECON	202	Principles of Microeconomics	3
		General Education	6
			32

Junior Year			**Credits**
ECON	310	Money and Banking	3
FIN	330	Corporate Financial Management	3
MGMT	310	Principles of Management	3
MKTG	340	Principles of Marketing	3
		Emphasis and General Education	20
			32

Senior Year			**Credits**
MGMT	485	Management Strategy and Policy	3
		General Education and Electives	29
			32

BUSINESS ADMINISTRATION EMPHASIS AREAS

Junior and Senior Years:

General Management

			Credits
BUSAD	302	Law, Govt. and Bus	3
ECON	410	Managerial Econ. . .	3
MGMT	311	Prod/Oper Mgmt. . .	3
MGMT	318	Personnel Mgmt . . .	3
MGMT	320	Org'l Behavior.	3
MGMT	410	Ind'l, Rel Legis, **or**	
MGMT	411	Collective Bargaining	3
MGMT	414	Small Bus Mgmt . . .	3
School of Business 300 or 400 level Electives			12
			33

Computers and Information Systems

			Credits
CST	220	COBOL	4
MGMT	311	Prod/Oper Mgmt. . .	3
MGMT	362	Systems Analysis . .	3
MGMT	365	Mgmt Info Systems .	3
MGMT	366	Org'l Data Systems .	3
MGMT	415	Org'l and Mgmt Syst	3
MGMT	460	Computer Systems .	2
MGMT	465	Oper Res/Mgmt Sci	3
MGMT	469	Decision Support Syst	3
MGMT	470	Mg'l Decision Making.	3
Programming Elective			3
			33

Personnel and Industrial Relations

			Credits
BUSAD	302	Law, Govt. and Bus	3
ECON	402	Econ of Labor	3
MGMT	318	Personnel Mgmt . . .	3
MGMT	410	Ind'l Rel Legis	3
MGMT	411	Collective Bargaining	3
SOC	430	Industrial Sociology	3
School of Business 300 or 400 level Electives			15
			33

BUSAD Agriculture*

			Credits
ACCTG	201	Prin of Fin Acctg . . .	4
ACCTG	202	Prin of Mang Acctg .	4
BUSAD	160	Intro Comp Info Sys	3
BUSAD	220	Business Law	3
BUSAD	260	Business Stat I	3
BUSAD	261	Business Stat II	3
ECON	201	Prin of Macro	3
ECON	202	Prin of Micro	3
FIN	330	Financial Corp Mgmt	3
MGMT	310	Prin of Management.	3
MGMT	320	Organizational Beh .	3
MGMT	414	Small Bus Mgmt . . .	3
MKTG	340	Principles of Mark . .	3
MATH	221	Applied Calculus. . .	5
			46

*Required courses for agriculture emphasis area; see adviser in that area.

Industrial Management

			Credits
ECON	410	Managerial Econ. . .	3
EN	443	Qual Cont and Reliab	3
MGMT	311	Prod/Oper Mgmt. . .	3
MGMT	318	Personnel Mgmt . . .	3
MGMT	320	Org'l Behavior.	3
MGMT	362	Systems Analysis . .	3
MGMT	365	Mgmt Info Systems .	3
MGMT	411	Collective Bargain . .	3
MGMT	412	Meth and Time Analysis	3
MGMT	415	Org'l Mgmt Systems	3
MGMT	465	Oper Res/Mgmt Science	3
			33

Marketing

			Credits
ECON	410	Managerial Econ. . .	3
MKTG	341	Sales Mgmt	3
MKTG	342	Advertising	3
MKTG	343	Retailing	3
MKTG	344	Marketing Channels	3
MKTG	346	Sales Communication	3
MKTG	348	Consumer Behavior	3
MKTG	440	Marketing Research	3
MKTG	441	Marketing Strat	3
School of Business 300 or 400 level Electives			6
			33

FINANCE

			Credits
ACCTG	301	Intermediate Accounting I	4
ECON	301	Intermediate Macroeconomics	3
ECON	330	Public Finance	3
FIN	331	Managerial Finance Policy, Planning and Control	3
FIN	333	Investment Analysis	3
FIN	431	Financial Policy Analysis	3
At least two of the following courses:			
ACCTG	302	Intermediate Accounting II	4
FIN	335	Real Estate	3
FIN	337	Insurance	3
FIN	430	Financial Institutions and Markets	3
School of Business 300 or 400 level Electives			7-8
			33

MINOR

A baccalaureate degree student may minor in business administration by completing 23 hours of approved business administration courses. ACCTG 201, 202; ECON 201, 202; FIN 330; MGMT 310; and MKTG 340.

BUSAD COURSES

UNDERGRADUATE

BUSAD 100 Introduction to Business 3(3-0)
Introduction to the concepts and practices of business in a free enterprise system, including social requirements of business firms. Open to all students, but especially recommended to non-School of Business majors and all freshman. GEN. ED. IID.

BUSAD 114 Small Business Environment 3(3-0)
For non-business majors only. Study of the financial, accounting, management, marketing and legal problems in small businesses with special emphasis on recognizing and evaluating business opportunities.

BUSAD 160 Introduction to Computers and Information Systems 3(3-0)
Concepts, technology and applications of computers and computer-based information systems in business and government.

BUSAD 220 Principles of Business Law 3(3-0)
Law as it relates to business. Coverage includes contracts, sales, bailments and personal property.

BUSAD 260 Business Statistics I 3(3-0) Prerequisite MATH 121.
Statistical methods in business with programming, including descriptive statistics, probability distributions, sampling, theory, hypothesis testing, parameter estimation and sampling applications.

BUSAD 261 Business Statistics II 3(3-0) Prerequisite BUSAD 260.
Statistical methods used in the solution of modern business and economic problems, including analysis of variance, regression, correlation, nonparametric methods and sample survey techniques. Computer applications are used.

BUSAD 270 Business Communications 3(3-0) Prerequisite ENG 110 and 211.
Means of extending management capabilities through effective internal and external communications, including data organization and presentation.

BUSAD 296 Cooperative Education Placement (1-3 VAR)
Opened to qualified lower division students with approval of department chairperson. Supervised field work in selected businesses, not for profit, and governmental organizations, supplemented by written reports. (S/U grades)

BUSAD 302 Law, Government and Business 3(3-0) Prerequisite Junior standing.
Government influence on business activities, including legislation affecting the competitive character of systems protecting the consumer and employee.

BUSAD 305 Planning for Employment 1(1-0) Prerequisite Junior standing.
Preparation of resumes, jobs interviewing techniques and researching potential employers. (S/U grades.)

BUSAD 491 Special Topics (1-3 VAR)
Selected topics which respond to specific needs and requests.

BUSAD 494 Small Business Studies 3(3-0) Prerequisite Senior standing and permission of instructor.
Integrates prior studies toward solving problems of selected small business firms in the community and/or computer simulation of business cases.

BUSAD 495 Independent Study (1-3 VAR) Prerequisite Senior standing and permission of assistant dean, School of Business.
Individual research, directed readings, and/or special assignments.

BUSAD 498 Internship (1-6 VAR)
Open to qualified upper-division students with approval of department head. Supervised field work in selected business, social and governmental organizations that will enhance the student's training in management; supplemented by written reports. (S/U grades.)

GRADUATE

BUSAD 550 Quantitative Methods in Managerial Decision Making 3(3-0)
The application of mathematical, statistical and computer techniques in managerial decision-making are studied. Problems encountered with decisions in uncertain environments and the methodology of decision analysis are investigated. Topics include: decision diagramming, expected utility criteria, basics of probability manipulation, subjective probability assessment and value of information calculation.

BUSAD 551 Business, the Law, and Management Ethics 3(3-0)
Specific legal problems encountered by entrepreneurs and the role of ethics in managerial decision making are studied. Multiple, changing and often conflicting ethical traditions are investigated.

BUSAD 554 Seminar in Management of Non-Profit Organizations 3(3-0)
The study of the management of non-profit organizations. Discussions are based upon selected readings and individual and group research papers. Individual work of an advanced and investigative nature is stressed.

BUSAD 591 Special Topics 3(3-0)
Critical review and discussion of relevant business administration topics.

BUSAD 592 Research (1-6 VAR)
The student will work under the close supervision of a graduate faculty member in basic or applied research resulting in a thesis or report of high academic quality.

BUSAD 596 Thesis Research (1-6 VAR)
Research conducted under the direction of graduate faculty.

MGMT COURSES

UNDERGRADUATE

MGMT 301 Introduction to Leadership and Management 3(3-0) Prerequisite Sophomore standing.
Technique and practice in applied leadership in small groups and basic management skills. Includes leadership laboratories.

MGMT 310 (MILSC 310) Principles of Management 3(3-0) Prerequisite ENG 211.
Decision-making, communication and leadership principles in business and not-for-profit organizations.

MGMT 311 Production/Operations Management 3(3-0) Prerequisite BUSAD 261 and MGMT 310.
Techniques and procedures for efficient production and problem-solving.

MGMT 318 Personnel Management 3(3-0) Prerequisite MGMT 310.
Recruiting, testing, interviewing, training and evaluating workers; planning for personnel needs; establishing personnel functions; employment laws; establishing pay plans.

MGMT 320 Organizational Behavior 3(3-0) Prerequisite MGMT 310.
Behavior of individuals in organizational settings. Behavioral determinants, managerial style, social system analysis, motivation, communication and control processes.

MGMT 362 Systems Analysis 3(3-0) Prerequisite MGMT 310.
Tools of organizational process analysis and synthesis: investigation, requirements, definition, alternatives design, feasibility, systems proposal, definition of system inputs and outputs, detailed design, establishment and management of systems life cycle, system changeover.

MGMT 365 Management Information Systems 3(3-0) Prerequisite MGMT 310, 362.
Analysis and design of computer based management information systems to satisfy needs of functional areas of organizations such as finance, marketing, accounting, engineering, production and operations management.

MGMT 366 Organizational Data Systems 3(3-0) Prerequisite BUSAD 160 and CST 220.
Definitions and concepts of input/output file structures, study of file processing languages. Hands-on experience with the construction of computer based data structures and with commercial data base management systems.

MGMT 410 Industrial Relations Legislations 3(3-0) Prerequisite MGMT 318.
Federal and state legislation and execution and executive orders governing the employer-employee relationship; legal rights of organization and bargaining.

MGMT 411 Collective Bargaining 3(3-0) Prerequisite MGMT 318.
Strategies and methods involved in bargaining, administration of contracts, handling grievances, and arbitrating; content of contracts, employer-employee rights; costing of proposals.

MGMT 412 Methods and Time Analysis 3(3-0) Prerequisite MGMT 311.
Analysis of methods of performing operations and jobs to determine the most efficient manner and then establishing time standards.

MGMT 414 Small Business Management 3(3-0) Prerequisite ACCTG 202, MGMT 310 and MKTG 340.
The environment, management, marketing, accounting and legal considerations facing the small business manager and owner.

MGMT 460 Computer Systems 3(3-0) Prerequisite MGMT 365.
Examination of computer systems as they are designed to meet organizational needs. Equipment specification, selection and configuration. Comparative study of local systems. Management of the computer resource.

MGMT 465 Operations Research/Management Science 3(3-0) Prerequisite MGMT 310.
Examination of deterministic tools in managerial problem solving: mathematical programming methods, linear, quadratic, and network problems. The decision implications of structure. Computer solutions of structured business problems.

MGMT 467 Computer Simulation 3(3-0) Prerequisite BUSAD 261.
Stochastic approach to the solution of business problems. Recognition of problems suited for simulation solution. Construction and solution of simulation problems using computers. Interpretation of simulation solutions.

MGMT 469 Decision Support Systems 3(3-0) Prerequisite MGMT 365 and 366.
Conceptual and pragmatic summary of the evolving technology of business and technical decision support. Modular approach to decision models. Integration of data processing, MIS, OR/MSC and data base concepts. Introduction to decision support languages and to graphics.

MGMT 470 Managerial Decision Making 3(3-0) Corequisite MGMT 465.
Examination of modern managerial decision making processes in business and in related fields such as medicine, government, engineering, chemistry and sociology. The course stresses the complex nature of managerial decisions and the need for an integrated approach to problem solution using a varied array of tools and methods.

MGMT 475 Multinational Business 3(3-0) Prerequisite FIN 330, MGMT 310 and MKTG 340.
Opportunities and problems of multinational firms, including environmental factors and formulation of strategies and policies for all functional areas of business.

MGMT 480 Small Business Studies 3(3-0) Prerequisite Senior standing and permission of assistant dean, School of Business.
Integrating prior studies in business into a realistic approach to solve problems faced by selected firms in the community and/or computer simulation of business cases.

MGMT 485 Management Strategy and Policy 3(3-0) Prerequisite Senior standing in the School of Business and completion of all core courses.
Integration of all prior course work into a realistic and scientific approach to the solution of organizational problems and evaluation of opportunities. Case method used extensively.

MGMT 491 Special Topics (1-3 VAR)
Selected management topics which respond to specific and timely informational needs of students.

MGMT 495 Independent Study in Management (1-3 VAR) Prerequisite Senior standing in School of Business and permission of assistant dean, School of Business.
Individual research directed readings, and/or special assignments.

MGMT 498 Internship (1-6 VAR) Prerequisite Junior standing in School of Business and permission of assistant dean, School of Business.
Supervised field work in selected business, social and governmental organizations that will enhance the student's training in management; supplemented by written reports. (S/U Grades.)

GRADUATE

MGMT 520 Management Theory and Practice 3(3-0)
The examination of approaches currently used by behavioral science practitioners to assist organizations in achieving planned change. Specific focus is on the processes of behavioral change at the individual, group and organizational levels. In addition to traditional teaching methods, the concepts and practices of organizational development are examined through the use of cases.

MGMT 521 Corporate Strategy and Industrial Structure 3(3-0)
The important relationships between the structural characteristics of an industry and the performance of firms competing in the industry are explored. The nature of the competitive interaction among firms and the rules of the strategic game determined by the industry's structural characteristics are also studied.

MGMT 523 Strategic Management in Public Sector Companies 3(3-0)
The major objective of this course is to provide the participants with insights into the strategic and policy difference between service sector companies and organizations whose product is a tangible result of a manufacturing process. Emphasis will be placed upon overall strategy as viewed by the general manager as well as the interrelationships and conflicts between marketing, human resources, finance, and operations.

MGMT 560 Management Information Systems 3(3-0)
The development of an overall framework for analyzing the use of information by organizations is presented along with examples of different types of information systems. The analysis and design of information systems is stressed through case study and projects. The role of computing in information systems and the design of computer-based systems and decision support systems will be emphasized.

MGMT 561 Advanced Database Management Systems 3(3-0) Prerequisite MGMT 560.
Development of database management systems for specific managerial applications, e.g., control and operation of managerial functions. Focus on hierarchical, net-work, and relational models, data sublanguages, and query facilities, teleprocessing with database systems. Examination of the database environment at the organization and management of the database. Mainframe and micro system based software.

MGMT 585 Management Policy and Strategy 3(3-0)
The study of implementation of strategic decisions at differing managerial levels within a firm. Specific topics will include: operational planning and budgeting, resolving short and long-term tradeoffs, designing the organization (both structure and process), building a management team, bringing about strategic change and prioritizing actions among conflicting goals. The case method will be utilized.

MGMT 591 Special Topics 3(3-0)
Critical review and discussion of relevant management topics.

MGMT 592 Research (1-6 VAR)
The student will work under the close supervision of a graduate faculty member in basic or applied research resulting in a report of high academic quality.

MGMT 596 Thesis Research (1-6 VAR)
Research conducted under the direction of graduate faculty.

MKTG COURSES

MKTG 340 Principles of Marketing 3(3-0) Prerequisite ECON 201.
Roles of marketing in the fulfillment of the needs of consumers and industrial users, marketing functions and marketing institutions.

MKTG 341 Sales Management 3(3-0) Prerequisite MKTG 340.
Business planning, operating procedures and administration of sales force and its related activities.

MKTG 342 Advertising 3(3-0) Prerequisite MKTG 340.
Examines economic and social values of advertising as well as functions and use of advertising. Includes selection of media copy and layout.

MKTG 343 Retailing 3(3-0) Prerequisite MKTG 340.
Principles and practices of retail store operation, including buying, merchandising, advertising, sales promotion, service, supervision and control.

MKTG 344 Marketing Channels 3(3-0) Prerequisite MKTG 340.
Analysis of distribution channels used by firms engaged in marketing and manufacturing. Consideration of appropriate strategies for marketing channels management.

MKTG 346 Sales Communications 3(3-0) Prerequisite Junior standing.
Intensive investigation of the art of persuasive sales communication, with emphasis on selection, organization, and effective oral presentation of sales and promotional information.

MKTG 348 Consumer Behavior 3(3-0) Prerequisite MKTG 340.
Examines individual and group differences in consumer behavior and their effect on business strategies. Contemporary behavioral science concepts applied to specific business problems.

MKTG 440 Marketing Research 3(3-0) Prerequisite MKTG 340.
Modern research methods and techniques applied to problems of collection, interpretation, and presentation of data for marketing management decisions.

MKTG 441 Marketing Strategies 3(3-0) Prerequisite MKTG 340.
Marketing policy formulation and implementation. Emphasis on developing student's ability to analyze and solve marketing problems.

MKTG 480 Small Business Studies 3(3-0) Prerequisite Senior standing and permission of assistant dean, School of Business.
Integrating prior studies in business into a realistic approach to solve problems faced by selected firms in the community and/or computer simulation of business cases.

MKTG 491 Special Topics (1-3 VAR)
Selected marketing topics which respond to specific and timely needs of students.

MKTG 495 Independent Study (1-3 VAR) Prerequisite Senior standing and permission of assistant dean, School of Business.
Individual research, directed readings and/or special assignments.

MKTG 498 Internship (1-6 VAR) Prerequisite Junior standing in School of Business and permission of assistant dean, School of Business.
Supervised field work in selected business, social and governmental organizations to enhance the student's training in marketing, supplemented by written reports.

GRADUATE

MKTG 540 Marketing Management Strategies 3(3-0) Prerequisite Graduate standing.
The investigation of strategic decisions necessary to match organizational resources and objectives with market opportunities. The strategy areas of product development and diversification, pricing, communication through advertising and selling and distribution are examined separately and are also studied in their role in the overall marketing plan. The importance of understanding and forecasting market behavior is stressed as is the coordination of marketing with other managerial decisions. Emphasis is on the integration of theory and principles through the use of cases.

MKTG 541 Cases in Marketing Management 3(3-0) Prerequisite MKTG 540.
This course is designed to test the application skills of each student in legitimate, actual marketing situations faced by corporations large and small, product and service industries, profit as well as non-profit institutions. Logic and reasoning ability will be stressed rather than attempting to develop one, single, inflexible "right" answer.

MKTG 591 Special Topics 3(3-0)
Critical review and discussion of relevant marketing topics..

MKTG 592 Research (1-6 VAR)
The student will work under the close supervision of a graduate faculty member in basic or applied research resulting in a thesis or report of high academic quality.

MKTG 596 Thesis Research (1-6 VAR)
Research conducted under the direction of graduate faculty.

FIN COURSES

UNDERGRADUATE

FIN 330 Corporate Financial Management 3(3-0) Prerequisite ENG 211, 120, SPCOM 101, BUSAD 160, 261, ACCTG 202 and ECON 202.
Principles of finance involved in problems confronting business organizations. Techniques of financial decision making for liquidity management, financial forecasting, long-term and short-term financing.

FIN 331 Managerial Finance: Policy, Planning and Control 3(3-0) Prerequisite FIN 330.
Continuation of Corporate Financial Management; planning, policy formulation and financial decision making. Cash and capital budgeting, credit policy and accounts receivable management, cost of capital, mergers, acquisitions and investment banking.

FIN 333 Investment Analysis 3(3-0) Prerequisite FIN 330.
Analysis and forecasting of security markets, industry and company studies, portfolio selection and management.

FIN 335 Real Estate 3(3-0) Prerequisite ECON 101 or ECON 201.
Principles of real estate with emphasis on residential markets, including economics, governmental and locational factors, appraising, financing, and real estate transactions.

FIN 337 Insurance 3(3-0) Prerequisite ECON 101 or ECON 201.
Life, property, and health insurance from purchaser's point of view, emphasis on the operation and contributions of the insurance industry.

FIN 430 Financial Institutions and Markets 3(3-0) Prerequisite ECON 310.
Structure, operations and portfolio compositions of financial intermediaries, including commercial banks, savings and loans, life insurance companies, pension fund management, mortgage banking and consumer and federal credit agencies.

FIN 431 Financial Policy Analysis 3(3-0) Prerequisite FIN 331 and 333.
Analysis of financial policies in various organizations. Emphasis on managerial problems in long range planning, decision making under uncertainty, risk measurement and applications of capital markets.

FIN 480 Small Business Studies 3(3-0) Prerequisite Senior standing and permission of assistant dean, School of Business.
Integrates prior studies in business into a realistic approach to solve problems faced by selected firms in the community and/or computer simulation of business cases.

FIN 491 Special Topics (1-3 VAR) Prerequisite Permission of instructor.
Selected finance topics which respond to specific and timely informational needs of students.

FIN 495 Independent Study (1-3 VAR) Prerequisite Senior standing in School of Business and permission of assistant dean, School of Business.
Individual research, directed readings, and/or special assignments.

FIN 498 Internship (1-6 VAR) Prerequisite Junior standing in School of Business, and permission of assistant dean, School of Business.
Supervised field work in selected business, social and governmental organizations to enhance the student's training in finance; supplemented by written reports.

GRADUATE

FIN 530 Financial Management 3(3-0)
The foundations of business financial management and the valuation of the corporation. Topics include: financial analysis, fund-flow analysis, forecasting financial requirements, short-and intermediate-term financing, principles of valuation in perfect and imperfect markets, capital budgeting involving deterministic and risky investment projects and required rates of return for capital investments. Emphasis is on the integration of theory and methods through the use of cases.

FIN 531 International Financial Management 3(3-0)
Those aspects of international environment relevant for managers of internationally active businesses are explored. Topics include: foreign exchange transactions, exchange rate behavior, foreign exchange management (measuring and managing both financial and real variables), financing choices, risk-return concepts, valuation and capital budgeting in an international context and financial control. The application of theory to current problems such as commercial policy and international liquidity will also be emphasized.

FIN 532 Management of Financial Institutions 3(3-0)
General management and policies of financial institutions. Institutions included will be: commercial banks, investment banks, thrift institutions, insurance companies and other financial intermediaries.

FIN 533 Advanced Investment Portfolio Management 3(3-0) Prerequisite FIN 530.
Theory and practice in the construction and management of investment portfolios stressing security evaluation, portfolio analysis, capital asset pricing, capital market efficiency, performance evaluation, and investment strategy. The viewpoints of the individual and institutional investors are considered in the formulation of investment policy.

FIN 534 Loan and Risk Evaluation: A Case Approach 3(3-0) Prerequisite FIN 530.
A commercial bank's perspective is applied to analyze loan applications, consolidations, and participations. Consideration is given to problems of lead bank line of credit management. Creative finance is applied to develop financing for the increased risk of emerging high technology firms.

FIN 591 Special Topics 3(3-0)
Critical review and descussion of relevant finance topics.

FIN 592 Research (1-6 VAR)
The student will work under the close supervision of a graduate faculty member in basic or applied research resulting in a report of high academic quality.

FIN 596 Thesis Research (1-6 VAR)
Research conducted under the direction of graduate faculty.

CHEMISTRY

Faculty: Connelly, Druelinger, Hammer, Mahan, Saul, Smith, Wilkes

The program in chemistry is fully accredited and has been approved by the American Chemical Society. In addition to curricula for students who wish to pursue chemistry as a profession, programs can be designed for students in pre-professional programs such as pre-medicine, pre-dentistry, pre-veterinary medicine and pre-law. Minors and second majors are available in a variety of disciplines to provide educational versatility and mobility. While there is a core curriculum for the major, there are many options open to the student to combine his or her interests with a major in chemistry including an option providing a student with a BS degree in chemistry that is certified by the American Chemical Society.

Every student has access to individual consultation to ensure that he or she enrolls in the program best suited to his or her professional goals. All major and minor programs must be approved by the department. Through such consultation, personalized programs are developed.

Facilities. The classrooms, offices and laboratories of the program in chemistry are housed in the Chemistry-Geology building. The modern, spacious facility provides a pleasant workplace for both students and faculty. Modern laboratory facilities and instrumentation are available for teaching and research.

MAJORS

The following core of courses is required for all chemistry major options for the bachelor of science degree.

			Credits
CHEM	121/121L 122/122L	General Chemistry I, II and Labs	10
CHEM	301/301L 302/302L	Organic Chemistry I, II and Labs	10
CHEM	317/317L	Quantitative Analysis I, and Lab	4
CHEM	321, 322	Physical Chemistry I, II	6
CHEM	419/419L	Instrumental Analysis	4
CHEM	421	Advanced Inorganic Chemistry	3
CHEM	493	Seminar	1
			38

All options for the BS degree in chemistry are subject to university graduation requirements.

Bachelor of science degree chemistry major option. The minimum requirement for the BS degree, chemistry major option, is 44 semester hours including the 34 semester credit hour core, CHEM 323 and 318/318L, to total 44 semester credit hours.

Mathematics through two semesters of calculus, computer programming and two semesters of general physics complete the requirements. Transfer students are required to earn a minimum of 20 semester credit hours in approved chemistry courses from USC for graduation with a BS degree in chemistry.

A typical chemistry schedule is: (Modifications would be required for other options.)

Freshman Year			**Credits**
CHEM	121/121L	General Chemistry I and Lab	5
CHEM	122/122L	General Chemistry II and Lab	5
ENG	110, 211	Composition I and II	6
MATH	124	Pre-Calculus Math	3
MATH	126	Calculus and Analytical Geometry I	5
PE	100	PE Orientation	2
RDG	120	College Reading	2
		General Education	4
			32

Sophomore Year			Credits
CHEM	301/301L	Organic Chemistry I and Lab	5
CHEM	302/302L	Organic Chemistry II and Lab	5
MATH	224	Calculus and Analytical Geometry II	5
MATH	240/241	Introduction to Computer Programming	3
PHYS	221/221L	General Physics I and Lab	5
SPCOM	101	Expository Speaking	2
		General Education	7
			32

Junior Year			Credits
CHEM	317/317L	Quantitative Analysis I and Lab	4
CHEM	318/318L	Quantitative Analysis II and Lab	4
CHEM	321/322	Physical Chemistry I and II	6
FL	121/122	Introduction to German I and II (Recommended)	6
PHYS	222/222L	General Physics II and Lab	5
		General Education	4
		Electives	3
			32

Senior Year			Credits
CHEM	323	Experimental Physical Chemistry	2
CHEM	419/419L	Instrumental Analysis and Lab	4
CHEM	495	Independent Study (Research)	2
		Electives	18
CHEM	421	Advanced Inorganic	3
CHEM	493	Seminar	1
			30

Bachelor of science degree in chemistry, ACS certified option. Since the University of Southern Colorado is included on the List of Approved Colleges and Universities of the American Chemical Society, a student has the option of pursuing a slightly more rigorous curriculum that will result in a bachelor of science degree in chemistry certified by the American Chemical Society. In addition to the requirements for the basic chemistry major option cited above, the student will be required to complete CHEM 411 and one or two approved advanced electives. Also required is a minimum of one semester of independent study consisting of a laboratory based research project. The student will be required to complete a minimum of 65 clock hours in the laboratory, submit a paper and present a seminar on the findings of his or her research in order to fulfill this requirement.

Bachelor of science degree in chemistry, biochemistry option. A biochemistry option for the BS degree in chemistry is obtained by completing the 38 credit hour core plus CHEM 411, 412/412L and the same mathematics and physics requirements as the basic chemistry major. The biochemistry option requires a minor in biology that totals 23 semester hours. These BIOL- prefix courses must have adviser approval.

Double major option. While a wide variety of second majors are available, a second major in biology has been the most popular, particularly among pre-medical, pre-dental and other pre-professional students. Requirements for the double major option include completion of the 38 semester credit hour core, a year of college physics, a year of college calculus and completion of the requirements for the second major. Requirements for the second major are determined by the department of the second major.

Engineering/chemistry option. The engineering/chemistry option requires the 38 semester credit hour chemistry core plus 34 semester credit hours in approved engineering courses, two semesters of calculus, computer programming, and two semesters of general physics.

Pre-medicine/chemistry major option. While medical schools do not mandate any particular major for entering students, biology and chemistry have been the leading majors of students entering medical school. Biology is the leading major in terms of the absolute number of students and chemistry leads in the percentage of students admitted that applied. The requirements for a pre-medicine/chemistry major are the same as for the chemistry major option plus the student must complete specific courses required by the medical schools to which they are applying. It is recommended that pre-medical and other pre-professional students co-ordinate their programs with the appropriate pre-professional adviser as well as the chemistry adviser to make sure specific course requirements are completed.

Chemistry/teacher certification option. Students desiring to major in chemistry and be certified to teach science at the secondary level are required to complete the 34 semester credit hour chemistry core, at least one semester of calculus, a year of college physics and computer programming. Since the State Department of Education certification in secondary science requires broad training over all the science disciplines and mathematics, the student is required to complete additional course work in geology, biology, physics and mathematics in addition to the mathematics and physics already required for the chemistry major. The student is also currently required to complete 42 semester hours in professional education courses. Students seeking secondary science certification are supervised by the Teacher Education Committee as well as their major adviser.

MINOR

The chemistry minor requires a minimum of 20 semester credit hours in chemistry, among which must be included General Chemistry I, II and laboratory, and at least 10 semester credit hours in chemistry courses numbered 300 and above. Chemistry 101, 111/111L, and 112/112L may not be credited toward a chemistry minor. Transfer students must earn a minimum of 10 credit hours of the 20 semester credit hour requirement at USC.

CHEM COURSES

UNDERGRADUATE

CHEM 101 Chemistry and You 3(3-0)
Chemistry related to the everyday world. Drugs, food, pollution, pesticides, consumer products, energy, and home health. Principally for nonscience majors but open to all. GEN. ED. IIIB

CHEM 111 Principles of Chemistry 3(3-0) Prerequisite none. Corequisite CHEM 111L.
Fundamental laws, theories and principles of chemical reactions. Designed for students majoring in liberal arts, nursing, home economics and agriculture. Not open to chemistry majors and minors. GEN. ED. IIIB

CHEM 111L Principles of Chemistry Lab 1(0-2) Corequisite CHEM 111.
Experiments using common chemical equipment and techniques to aid the student in learning what occurs in the chemical laboratory. GEN. ED. IIIB

CHEM 112 Introduction to Organic and Biochemistry 3(3-0) Prerequisite CHEM 111 or permission of instructor.
Organic chemistry. Molecular structure, functional groups, carbohydrates, lipids, proteins, biochemistry.

CHEM 112L Introduction to Organic and Biochemistry Lab 1(0-2) Prerequisite CHEM 111L. Corequisite CHEM 205.
Organic laboratory techniques. Synthesis, purification and uses of organic compounds. Identification of functional groups.

CHEM 121 General Chemistry I 4(4-0) Prerequisite One year in high school algebra or equivalent, and one year high school chemistry or equivalent. Corequisite CHEM 121L.
For science, engineering and preprofessional curricula. Atomic theory, chemical bonding, periodic properties, states of matter, oxidation-reduction, stoichiometry, thermochemistry, inorganic nomenclature. GEN. ED. IIIB.

CHEM 121L General Chemistry Lab I 1(0-2) Corequisite CHEM 121.
Laboratory component to CHEM 121. GEN. ED. IIIB

CHEM 122 General Chemistry II 4(4-0) Prerequisite CHEM 121. Corequisite CHEM 122L.
Continuation of CHEM 121. Thermodynamics, kinetics, equilibria, nuclear chemistry, electrochemistry, acids and bases, solutions, descriptive inorganic chemistry. GEN. ED. IIIB

CHEM 122L General Chemistry Lab II 1(0-2) Corequisite CHEM 122.
Laboratory component to CHEM 121 including qualitative analysis. GEN. ED. IIIB

CHEM 291 Special Topics (1-5 VAR) Prerequisite Permission of instructor.
Topics will be considered which serve the interests of 10 or more students.

CHEM 301 Organic Chemistry I 3(3-0) Prerequisite CHEM 122. Corequisite CHEM 301L.
For majors and preprofessional students requiring a strong background in organic chemistry. Organic reactions and mechanisms are related to molecular structure.

CHEM 301L Organic Chemistry Lab I 2(0-6) Corequisite CHEM 301.
A laboratory course to accompany CHEM 301.

CHEM 302 Organic Chemistry II 3(3-0) Prerequisite CHEM 301. Corequisite CHEM 302L.
Continuation of CHEM 301.

CHEM 302L Organic Chemistry Lab II 2(0-6) Prerequisite CHEM 301L. Corequisite CHEM 302.
Laboratory course to accompany CHEM 302.

CHEM 317 Quantitative Analysis I 2(2-0) Prerequisite CHEM 122. Corequisite CHEM 317L.
Volumetric and gravimetric analysis integrated with instrumental analysis, both optical and electrometric methods.

CHEM 317L Quantitative Analysis Lab I 2(0-4) Corequisite CHEM 317.
Laboratory component to CHEM 317.

CHEM 318 Quantitative Analysis II 2(2-0) Prerequisite CHEM 317 or permission of instructor. Corequisite CHEM 318L.
Continuation of CHEM 317.

CHEM 318L Quantitative Analysis Lab II 2(0-4) Corequisite CHEM 318.
Laboratory component to CHEM 318.

CHEM 321 Physical Chemistry I 3(3-0) Prerequisite CHEM 122. Prerequisite or Corequisite MATH 224 and PHY 201 or 221.
Chemical thermodynamics, chemical dynamics, quantum chemistry, chemical structure and spectroscopy.

CHEM 322 Physical Chemistry II 3(3-0) Prerequisite CHEM 321.
Continuation of CHEM 321.

CHEM 323 Experimental Physical Chemistry 2(0-4) Prerequisite CHEM 321 or permission of instructor.
Laboratory techniques in thermodynamics, chemical equilibria, phase phenomena, kinetics, spectroscopy.

CHEM 377 Methods and Techniques of High School Teaching 2(2-0)
Instruction and experience in preparing for and conducting discussion sessions and laboratory exercises in high school chemistry.

CHEM 401 Advanced Organic Chemistry 3(3-0) Prerequisite CHEM 302, or permission of instructor. Corequisite CHEM 401L.
Topics of advanced organic chemistry, including organic reactions, mechanisms, natural products and spectroscopy.

CHEM 401L Advanced Organic Chemistry Lab 1(0-2) Corequisite CHEM 401.
Laboratory course to accompany CHEM 401. Molecular structure determination by chemical and instrumental methods.

CHEM 403 Polymer Chemistry 3(3-0) Prerequisite CHEM 302/302L.
Study of synthetic polymers including synthesis, mechanisms of formation, structure of elucidation, reactivity, properties and industrial application. Biopolymers will also be considered.

CHEM 411 Biochemistry I 3(3-0) Prerequisite CHEM 302 or permission of instructor.
Chemistry of constituents of living matter, including proteins, carbohydrates, nucleic acids and lipids. An introduction of enzymes and coenzymes.

CHEM 412 Biochemistry II 3(3-0) Prerequisite CHEM 311. Corequisite CHEM 412L.
Continuation of CHEM 411. Intermediary metabolism of carbohydrates, lipids, and amino acids. Bioenergetics.

CHEM 412L Biochemistry Lab II 1(0-2) Corequisite CHEM 412.
Laboratory course to accompany CHEM 412.

CHEM 419 Instrumental Analysis 2(2-0) Prerequisite CHEM 317, 321 or permission of instructor. Corequisite CHEM 419L.
Emission spectrography, atomic absorption, gas chromatography spectrophotometry, x-ray fluorescence, voltommetry, NMR, IR, etc.

CHEM 419L Instrumental Analysis Lab 2(0-5) Prerequisite CHEM 317, 321, or permission of instructor. Corequisite CHEM 419.
Laboratory component to CHEM 419.

CHEM 421 Inorganic Chemistry 3(3-0) Prerequisite CHEM 321 or permission of instructor.
Structure and bonding, coordination theory, periodic relations, equilibrium, kinetics, thermodynamics, descriptive chemistry.

CHEM 425 Environmental Chemistry 3(3-0) Prerequisite CHEM 321 or permission of instructor.
Chemical process in air, water and soil. Air, water analysis, and treatment, pollution.

CHEM 430 X-Ray Crystallography 3(3-0) Prerequisite Permission of instructor.
Theory and practice of powder method, x-ray fluorescence, single crystal method, space group symmetry; application to geoscience and chemical problems.

CHEM 431 Radiochemistry 2(2-0) Prerequisite CHEM 322 or permission of instructor.
Nuclear properties, interaction and detection of radiation, application to chemistry.

CHEM 491 Special Topics (1-5 VAR) Prerequisite Permission of instructor.
Topics are considered which serve the interests of 10 or more students.

CHEM 493 Seminar 1(1-0) Prerequisite Permission of head of the program.
Seminar for majors and minors concerning current or unusual topics in chemistry. Speakers may include guests, faculty, or students. May be repeated for a maximum of two credits. (S/U grades).

CHEM 495 Independent Study (1-7 VAR) Prerequisite Permission of instructor.
To be arranged by the student with the instructor of the student's choice.

GRADUATE

CHEM 591 Special Topics (1-5 VAR) Prerequisite Permission of instructor.
Topics are considered which serve the interests of 10 or more students.

CHICANO STUDIES *(see History/Chicano Studies)*

CIVIL ENGINEERING TECHNOLOGY

Faculty: Hirth, Holderness, Rao, Womack

The program in civil engineering technology offers a bachelor of science in Civil Engineering Technology (BSCET) degree. The program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology. The program is designed to produce competent field engineering technologists, surveyors, soil, water and concrete technologists who have managerial and supervisory capabilities. The curriculum places emphasis on surveying, construction design, estimating and water supply systems. The upper-division courses provide a broader and more in-depth understanding in areas such as land surveying, water supply systems, architectural drafting and civil design projects. Managerial and supervisory capabilities are developed in courses such as estimating, business law and construction contracting and supervision.

MAJORS

Students seeking a degree in this program should have a mathematics/science background including algebra, geometry and trigonometry. Students who have an associate in applied science (AAS) degree in a similar program from an accredited institution may transfer to this program and earn the baccalaureate degree with at least two additional years of study.

The BS degree candidate must complete a minimum of 135 semester hours, with a 2.00 cumulative grade point average in major area of study.

A typical civil engineering schedule is:

Freshman Year			**Credits**
CET	101	Introduction to Civil En Technology	2
CET	102, 103	Surveying I and II	8
CET	105	Construction Materials	2
CET	106/106L	Concrete Mix Design and Lab	2
ENG	115, 216	Technical and Scientific Comm I and II	6
MATH	131, 132	Math for Engineering Technology I and II	8
MET	111	Technical Drafting I	3
PE	100	PE Orientation	2
			33

Sophomore Year			**Credits**
CET	104	Map Drafting	3
CET	202	Statics	3
CET	203	Strength of Materials	3
CET	311, 312	Advanced Surveying I and II	8
EN	105	FORTRAN	2
MATH	233	Math for Engineering Technology	5
PHYS	201/201L	Principles of Physics I and Lab	4
PHYS	202/202L	Principles of Physics II and Lab	4
RDG	120	College Reading	2
SPCOM	101	Expository Speaking	2
			36

Junior Year			**Credits**
CET	302	Structural Analysis	3
CET	303	Construction Contracting and Supervision	3
CET	304	Construction Cost Estimating I	3
CET	305	Construction Cost Estimating II	3
CET	315/315L	Soil Mechanics Tech and Lab	3
CET	404	Fundamental Structural Design	3
CHEM	111	Principles of Chemistry	3
	or		
GEOL	101	Earth Science	
		General Education	9
		Approved business Elective	3
			33

Senior Year			Credits
CET	401	Land Surveying	3
CET	411	Hydraulics	3
		General Education	9
		Approved CET Electives	12
		Approved business Elective	6
			33

CET COURSES

CET 101 Introduction to Civil Engineering Technology 2(2-0)
Acquaints CET students with USC and the engineering profession. Mathematics laboratory for practical applications of algebra, geometry and trigonometry as used in civil engineering technology.

CET 102 Surveying I 4(2-4)
Beginning course in plane surveying. Covers proper chaining techniques, care and use of engineering levels and transits and traversing.

CET 103 Surveying II 4(2-4) Prerequisite CET 102 or permission of instructor. Corequisite CET 104.
Introduction to land, topographic and construction surveying.

CET 104 Map Drafting 3(0-6) Prerequisite CET 102, MET 111 or permission of instructor. Corequisite CET 103.
Introductory course in plotting traverses, plainmetric maps, topographic maps, profiles and highway design.

CET 105 Construction Materials 2(2-0)
Properties and uses of building materials as they apply to the construction industry.

CET 106 Concrete Mix Design 1(1-0)
Properties of portland cement concrete and its ingredients, concrete mix design, placing and finishing.

CET 106L Concrete Lab 1(0-2) Corequisite CET 105.
Testing concrete materials using the ASTM concrete specification as a guideline.

CET 202 Statics 3(3-0) Prerequisite MATH 132 or permission of instructor.
Theory and application of action and reaction forces, moments as applied to structures.

CET 203 Strength of Materials 3(3-0) Prerequisite CET 202.
Basic stress-strain relationships resulting from compression, tensile, shear, bending loads, center of gravity and moments of inertia.

CET 211 Structural Detail Drafting 3(0-6) Prequisite MET 111.
Introduction to the detailing of steel, wood and concrete structural drawings for fabrication.

CET 212 Subdivision Design 3(0-6) Prerequisite CET 103, 104.
Basics of subdivision design, preliminary and final plat preparation and horizontal coordinate geometry.

CET 296 Cooperative Education Placement (1-5 VAR)
Industrial cooperative education work experience under the director of a field supervisor and faculty member.

CET 302 Structural Analysis 3(3-0) Prerequisite CET 203.
Analysis of statically determinate structures. Beams, trusses, arches and frames, stress resultants, deflections, influence lines. Introduction to computer methods in structural analysis.

CET 303 Construction Contracting and Supervision 3(3-0) Prerequisite Junior standing or permission of instructor.
Job specifications, organization, bonding, contracts, insurance, labor relations and planning and scheduling.

CET 304 Construction Cost Estimating I 3(3-0) Prerequisite CET 105 or permission of instructor.
Estimating related to building construction industry. Quantity take-off, labor and materials costs, records and assembling a general contractor's bid.

CET 305 Construction Cost Estimating II 3(3-0) Prerequisite Junior standing or permission of instructor.
Estimating relating to heavy and highway construction. Covers heavy equipment selection, use and production rates.

CET 311 Advanced Surveying I 4(2-4) Prerequisite CET 103 and MATH 132.
Develops professional skill in surveying, triangulation, state plane coordinates and engineering astronomy.

CET 312 Advanced Surveying II 4(2-4) Prerequisite CET 103, MATH 132.
Highway and route surveys, horizontal and vertical curves, grades, slope staking and earthwork.

CET 313 Architectural Drafting I 3(0-6) Prerequisite MET 111.
Preparation of a complete set of working drawings for a modern residential building.

CET 314 Architectural Drafting II 3(0-6) Prerequisite CET 313.
Introduction to architectural design, design sketches and working drawings for a light commercial building.

CET 315 Soil Mechanics Technology 2(2-0) Prerequisite MATH 132. Corequisite CET 315L.
Basic principles of soil mechanics and foundation design as they apply to design and construction.

CET 315L Soil Mechanics Technology Lab 1(0-2) Corequisite CET 315.
Basic engineering soil field lab tests using the ASTM manual as standard guide for conducting tests.

CET 401 Land Surveying 3(3-0) Prerequisite CET 103 or permission of instructor.
Boundary control, property descriptions, deeds, subdivisions. Emphasizes the legal aspects of land lay and surveying.

CET 402 Civil Design Projects 3(0-6) Prerequisite Senior CET or permission of instructor.
Practical, realistic project relating to civil engineering technology is selected for development, design and reported. This is an independent study course.

CET 404 Fundamental Structural Design 3(3-0) Prerequisite CET 302.
Structural steel design of beams, columns, girders and trusses to AISC standards.

CET 405 Reinforced Concrete Design 3(3-0) Prerequisite CET 302.
Design of reinforced concrete beams, columns, girders and floor systems to conform to current ACI code.

CET 411 Hydraulics 3(3-0) Prerequisite CET 203.
Introductory course in the study of non-compressible fluids at rest and in motion. Includes the flow of water in pipes and open channels.

CET 412 Hydrology 3(3-0) Prerequisite CET 411.
Hydrologic cycle including precipitation, streamflow, groundwater runoff and the preparation of hydrographs and frequency analysis.

CET 413 Indeterminate Structures 3(3-0) Prerequisite CET 302.
Introductory course in analysis of statically indeterminate structures. The solution of continuous beams and rigid frames by moment distribution and other methods.

CET 421 Architectural Solar Heating 3(3-0) Prerequisite Junior standing.
Passive and active solar heating of building spaces and water.

CET 491 Special Topics (1-6 VAR) Prerequisite Permission of instructor.
Special interest topics or projects not covered in existing technology courses.

CET 496 Cooperative Education Placement (1-5 VAR) Prerequisite Junior or senior standing.
Industrial cooperative education work experience under the direction of a field supervisor and faculty member.

COMPUTER SCIENCE TECHNOLOGY

Faculty: Baldauf, Borton, Cook, Chandler, Knight, May, Padgett, Sathi, Schlegel, Smith, Tappen

The program in computer science technology offers courses leading to the bachelor of science (BS) in computer science technology. The BS program is designed to meet a variety of student needs, as well as the increasing demand for computer scientists. Students are prepared for careers as computer programmers, in systems analysis and as specialists in computer hardware architecture and software design.

The program also devises suitable minors for students who wish to combine knowledge about computers with majors in other fields. In addition, the program offers courses which are open to all students.

The objectives of the program are to provide quality education in state-of-the-art computer science so that graduates are productive upon employment and to provide students with an education which will articulate with a variety of graduate programs. No grades below C in computer science technology are accepted toward the degree or minor.

MAJORS

Students enter the four-year BS program as new freshmen, or transfer students from other colleges, universities or community colleges. Each student follows a curriculum in one of three option areas and upon successful completion is awarded the bachelor of science degree. Each option includes specific core requirements related to the area of emphasis, as well as selected major (CST) coursework. Each option includes a minor or emphasis area and one or more required related courses plus a number of elective hours.

All options follow the recommended curriculum of the Association for Computing Machinery (ACM) for small colleges and universities. Each student selecting Option 1 must complete an adviser-approved minor of at least 20 hours. Option 2 requires an emphasis of 26 hours of specialized mathematics. Option 3 requires a minimum of 27 hours of specific electronics engineering technology course work.

Successful completion of the program qualifies the student to seek employment in such computer fields as business and scientific applications programming, programmer/analyst, systems programmer, or employment requiring a combination of digital electronics and logic, combined with computer programming in software design skills.

A typical schedule of coursework for Option 1 (Application Programming) is:

Freshman Year			**Credits**
CST	115	Operating Systems I	1
CST	121	Introduction to Computer Science	3
CST	122	Structured Prog. w/Pascal	3
ENG	110, 211	Compositon I and II (115, 216 substitute)	6
MATH	121	College Algebra	4
RDG	120	College Reading	2
		Elective (Computer Language)	3
		General Education	9
			31

Sophomore Year			**Credits**
ACCTG	201	Principles of Financial Accounting	4
ACCTG	202	Principles of Managerial Accounting	4
CST	222	Data Structures w/Pascal	3
CST	210	Intro. to Assembler Lang	3
CST	230, 231	COBOL I and II	6
CST	240	Systems Analysis I	3
MATH	156	Intro. to Statistics	3
MATH	245	Intro. to Discrete Math	3
SPCOM	101	Expository Speaking	2
		General Education	3
			33

Junior Year			**Credits**
CST	341	Systems Analysis and Des. II	3
CST	350	Data Base Systems I	3
CST	360	Digital Computing Concepts	3
CST		Upper Division Elective	3
		Coursework in Approved Minor	12
		General Education	9
			33

Senior Year			**Credits**
CST	416	Operating Systems II	3
CST	470	File Structures	3
CST		Upper Division Electives	6
		Coursework in Approved Minor	8
		General Education	5
		Free Electives	6
			31

Computer Science (Option 2)

A typical schedule of coursework for Option 2 (Systems Programming) is:

Freshman Year			**Credits**
CST	115	Operating systems I	1
CST	121	Introduction to Computer Science	3
CST	122	Structured Programming W/Pascal	3
ENG	110, 211	Composition I and II	6
MATH	126	Calculus I	5
RDG	120	College Reading	2
		General Education	9
			32

Sophomore Year			**Credits**
CST	210	Intro. to Assembler Language	3
CST	222	Data Structures w/Pascal	3
CST	240	Systems Analysis I	3
MATH	224	Calculus II	5
MATH	245	Discrete Mathematics	3
PHIL	205	Deductive Logic	3
SPCOM	101	Expository Speaking	2
		General Education	9
			31

Junior Year			Credits
CST	321	Data Structures II	3
CST	330	Programming Languages	3
CST	350	Data Base Systems	3
CST	360	Computer Concepts	3
CST		Upper Division Elective	3
MATH	307	Linear Algebra	3
MATH	325	Calculus III	4
		General Education	9
			31

Senior Year			Credits
CST	416	Operating Systems II	3
CST	418	Compiler Construction I	3
CST	470	File Processing	3
CST		Upper Division Electives	6
MATH	342	Numerical Analysis	3
MATH	350	Probability	3
		Free Electives	13
			34

Computer (Hardware/Software) Systems (Option 3)

NOTE: Option 3 has very **different requirements.** Students should obtain these from an adviser.

MINOR

A minimum of 20 semester hours of computer science technology course work will be arranged when a student desires to minor in this area. Any student desiring a minor should consult with a CST faculty member so that a suitable minor program can be arranged on an individual basis. Arrangements for a minor should be made early in the student's education plan. At least six (6) hours must be taken from CST upper division course work.

CST COURSES

CST 101 Computers and You 3(3-0) (Non-majors only)
Computers, information and technological change. The information revolution and its impact. Orientation to computer systems and their objectives organizations, influences on society, individuals, positive and negative impacts, uses in society and tomorrow's outlook. GEN. ED IIIC.

CST 102 Programming w/BASIC 3(3-0) (Non-majors only).
Introduction to computer languages, computer awareness and fundamental skills with use and expression of computer languages. Focus on interactive person-machine exchanges, a programming language (BASIC), and the operating system commands (JCL). GEN. ED. IIIC.

CST 105 FORTRAN 3(3-0) Corequisite MATH 120 or equivalent. (for majors)
Principles of FORTRAN-77 programming with problem-solving for science and business. Topics: language specifications, functions, arrays and subroutine subprograms.

CST 115 Operating Systems I 1(1-0) Corequisite CST 122 or equivalent.
Concepts of a disk operating system including supervisor functions, job control, editing, libraries and virtual storage. Systems service software such as utilities and sort/merge function.

CST 121 Introduction to Computer Science I 3(3-0) Corequisite (for majors) CST 121 may be waived.
Fundamentals of computer science theory. Topics include computers, problem-solving, implementation, software, data, structured programming, data structures. Subjects covered include variables, constants, repetition, selection, subalgorithms, software design, records, stacks, strings, and arrays.

CST 122 Structured Programming with Pascal 3(3-0) Corequisite CST 121.
Concepts of algorithmic processes and problem solving. Language: Pascal. Topics: pseudocode, computation, character manipulation, top-down structured programming, sequential files, subroutines, functions, sorting and searching.

CST 200 Micro-Computer Software Applications 3(3-0) Prerequisite Any CST course or permission of instructor.
Utilization of microcomputers for common applications. Emphasis will be placed on the most current software available in an MS-DOS environment. Subjects include word processing, data bases, spreadsheets, operating systems and graphics.

CST 210 Introduction to Assembler Language 3(3-0) Prerequisite CST 105 or equivalent and CST 122.
Introductory concepts of assembler programming for instruction formats, I/O definition, arithmetic operations and output editing as well as integer data handling.

CST 222 Data Structures w/Pascal 3(3-0) Prerequisite CST 122, Corequisite MATH 245.
Continuation of CST 102 for computer science majors. Programming discipline — syntle, expression, debugging, testing. Algorithmic development and analysis. Topics include searches, sorts, data structures, strings and recursion. Advanced features of Pascal.

CST 230 COBOL Programming I 3(3-0) Prerequisite CST 122.
ANSI COBOL programming principles for basic business applications. Topics: general program development, coding, execution and debugging.

CST 231 COBOL Programming II 3(3-0) Prerequisite CST 220.
ANSI COBOL programming for business applications. Advanced topics: magnetic tape, sequential disk, direct access and indexed sequential access methods, language concepts of sort and report generator.

CST 240 Systems Analysis and Design I 3(3-0) Prerequisite CST 105, 210, 220, or EN 106.
Systems analysis and design process, actual systems design layout work and integrated business systems analysis.

CST 290 Special Projects (1-5 VAR) Prerequisite Sophomore standing (Consent of faculty).
Selected projects in computer programming in cooperation and interaction with local business and industry. Maintaining industrial standards in programming and documentation mandatory.

CST 291 Special Topics 3(3-0) Prerequisite CST 122 and one programming language.
Selected topics in computer science technology, mini/micro computer systems, industrial standards of excellence. Selection based on demonstrated need and student interest.

CST 296 Cooperative Education Placement (1-5 VAR)
For freshmen and sophomores. Industrial cooperative education work experience under the direction of a field supervisor and faculty member.

CST 310 PL/1 Programming 3(3-0) Prerequisite CST 122.
Problem solving and structured programming techniques are presented using PL/I as a vehicle. Topics include structured pseudocode, text processing problems, and PL/I syntax including procedures.

CST 311 Unix/C 3(3-0) Prerequisite CST 202 and 210.
A comprehensive study of the C-Language and Unix operating system. Emphasis will be placed on the use of each in modern software design and implementation.

CST 321 Data Structures II 3(3-0) Prerequisite CST 210, 222 and MATH 245.
A continuation of CST 222 including trees and graphs and their applications, algorithms for sorting and searching of advanced data structures.

CST 330 Programming Languages 3(3-0) Prerequisite CST 222.
Fundamental issues of programming language design. Topics: syntax, semantics, grammars, control structures, data types, procedures and parameters, nesting and scope, higher level control structures, functions and recursion, exception handling and parallel processing.

CST 341 Systems Design and Analysis II 3(3-0) Prerequisite CST 240.
Major projects applying principles of design and analysis as developed in CST 240. Emphasis on design and implementation of computer-based systems.

CST 350 Data Base Systems 3(3-0) Prerequisite CST 222 or equivalent.
Design, implementation and use of data base management systems; comparison of available software packages; concepts of Query Languages and security considerations.

CST 360 Digital Computer Concepts 3(3-0) Prerequisite MATH 245 and junior CST standing.
Includes computer organization and components. Other topics are number systems and algorithms, codes, Boolean algebra, algorithms for arithmetic methods of component integration into computer systems. Computer logic principles and addressing schemes will be discussed.

CST 405 Computer Graphics I 3(3-0) Prerequisite CST 105, MATH 126 or permission of instructor.
Introduction to the theory and applications of computer graphics. Topics include mathematical principles, DISSPLA, hidden line problem and special projects. Graphics images will be produced in two and three dimensional representations.

CST 410 Data Communications Systems 3(3-0) Prerequisite CST 210.
Telecommunication, teleprocessing monitor systems and practical applications; software and hardware considerations, including real time and time-sharing systems. Terminal usage and access methods.

CST 416 Operating Systems II 3(3-0) Prerequisite CST 115, 210 and MATH 245.
Theory and design of supervisors, concepts of job tasks and data management, scheduling, queueing, multi-programming.

CST 418 Compiler Construction I 3(3-0) Prerequisite CST 321 and 330.
A project oriented course in which students write the Lexical analyzer of a simplified PASCAL compiler.

CST 419 Compiler Construction II 3(3-0) Prerequisite CST 418.
A project oriented course in which students write the Syntax analyzer and code generator.

CST 420 Artificial Intelligence 3(3-0) Prerequisite CST 330.
The LISP and PROLOG languages will be used in understanding problems in the area of machine learning, language comprehension, expert systems, tutoring, problem-solving, heuristics, searching, pattern matching, machine vision.

CST 424 Software Engineering and Ada Programming I 3(3-0) Prerequisite CST 321 or permission of instructor.
A presentation of the major features of the ADA programming language and their relevance to software engineering.

CST 425 Ada and Software Engineering II 3(3-0) Prerequisite CST 424.
A continuation of CST 424 emphasizing a large student written project.

CST 450 Advanced Database Structures 3(3-0) Prerequisite CST 350, or permission of instructor.
Investigation and study of data modeling, system development and data technology. Topics include database engineering and design, hardware, student projects, administration and selection.

CST 460 Computer Systems Architecture I 3(3-0) Prerequisite CST 210, 360 and senior standing.
Architecture of modern computers. Arithmetic and logic units, microprogrammable control units, architecture of micro, mini, commercial and maxi computers, parallel and pipeline processing.

CST 464 Computer Systems Fundamentals I 3(3-0) Prerequisite CST 210, 360 or equivalent.
Exploration and comparison of common CPU systems (microcomputers), particularly instruction sets, solutions to computer problems, elementary software, and methods of programming common interfaces.

CST 464L Computer Systems Fundamentals Lab I 1(0-2)
Laboratory supporting course CST 464. Laboratory exercises addressing operating systems, machine language and assembly language of currently manufactured microprocessor computers.

CST 470 File Processing 3(3-0) Prerequisite CST 221, 222 or knowledge of advanced FORTRAN concepts.
Provide foundation for applications of data structures and file processing techniques. Particular topics include sequential access, data structures, random access storage and file input and output.

CST 490 Special Projects (1-5 VAR) Prerequisite Permission of department head.
Allows students to earn credit independently under the guidance of a faculty member.

CST 491 Special Topics 3(3-0) Prerequisite Junior or senior standing.
Timely or important concepts in computer science. Topic normally announced in schedule of classes. May be repeated for credit.

CST 496 Cooperative Education Placement (1-5 VAR)
For juniors and seniors. Industrial cooperative education work experience under the direction of a field supervisor and faculty member.

ECONOMICS

Faculty: Askwig, Sadler, Sarver

The economics program offered by the School of Business in the College of Professional Studies, leads to the bachelor of science in business administration (BSBA) degree with a major in economics. The programs of study are designed to provide students with the theoretical and conceptual basis of economics and finance as well as the application skills to assume leadership roles in industry, government and education.

Economics provides an excellent preparation for graduate and professional training in economics, management, banking and law. The finance emphasis area prepares students for financial institutions, insurance, real estate, investments and financial management careers.

School of Business policies. The standard semester course load for full-time students is 16 credit hours. Students must have permission to take courses in which they do not meet the required prerequisites, or they risk being withdrawn and/or losing credit for those courses.

In order to fulfill graduation requirements, students must obtain a minimum grade average of C (2.0 GPA) in the courses taken within the School of Business, earn C grades or higher in all courses within their major and in MATH 121. **A required course in the major area may only be repeated once.**

Students requesting credit for course work taken at another institution are advised that the program has a transfer policy and that students are responsible for having their credits approved according to the policy.

The School of Business **requires** for a baccalaureate degree in economics that 18 of the last 32 hours just prior to graduation must be taken in residency.

All courses applied toward the major must be approved by the student's adviser.

All students planning to major in the School of Business area are classified as Pre-business upon enrollment in the university. During the first two years of their academic program, students will satisfy a major portion of the general education requirements and the Pre-business core. The Pre-business core consists of computer and information systems, financial and managerial accounting, macro and micro economics, business statistics,

business communications, business law and institutional requirements. Upon completion of the Pre-business core, the student makes a formal application to the major program for admission to upper-division courses in the School of Business. Application forms are available in the program office. Students are responsible for adhering to Pre-business requirements.

MAJOR

The **required** economic schedule is:

Freshman Year			**Credits**
BUSAD	160	Intro to Computers and Info Systems	3
ENG	110, 211	Composition I and II	6
MATH	121	College Algebra	4
SPCOM	101	Expository Speaking	2
		General Education	7-17
			32

Sophomore Year			**Credits**
ACCTG	201	Principles of Financial Accounting	4
ACCTG	202	Principles of Managerial Accounting	4
BUSAD	220	Principles of Business Law I	3
BUSAD	260, 261	Business Statistics I and II	6
BUSAD	270	Business Communications	3
ECON	201	Principles of Macroeconomics	3
ECON	202	Principles of Microeconomics	3
		General Education	9
			35

Junior Year			**Credits**
ECON	310	Money and Banking	3
FIN	330	Corporate Financial Management	3
MGMT	310	Principles of Management	3
MKTG	340	Principles of Marketing	3
		Departmental Major and General Education	20
			32

Senior Year			**Credits**
MGMT	485	Management Strategy and Policy	3
		General Education and Electives	29
			32

Economics Major

Junior and Senior Years:			**Credits**
ECON	301	Intermediate Macroeconomics	3
ECON	302	Intermediate Microeconomics	3
ECON	410	Managerial Economics	3
ECON		300 or 400 level Economics courses	9
ACCTG, FIN, MGMT, and/or MKTG		300 or 400 level courses and/or 300 or 400 level ECON courses	15
			33

MINOR

A baccalaureate degree student may minor in economics by completing 24 hours of approved economics courses. A minor in economics enhances degree programs in many areas such as accounting, management, marketing, history, political science, the social sciences and mathematics. ECON 201 and 202 are required. (With adviser approval, ECON 101 may be substituted for ECON 201.) The remaining 15 hours must include either ECON 301 or 302.

ECON COURSES

UNDERGRADUATE

ECON 101 Introduction to Economics 3(3-0)
Studies the broad aspects of today's economy and stresses problems of general interest. Not open to School of Business majors. GEN. ED. IID.

ECON 201 Principles of Macroeconomics 3(3-0)
Study of fundamental principles with emphasis on macroeconomics. GEN. ED. IID.

ECON 202 Principles of Microeconomics 3(3-0) Prerequisite ECON 201.
Study of fundamental principles with emphasis on microeconomics. GEN. ED. IID.

ECON 291 Special Topics (1-3 VAR) Prerequisite Permission of instructor.
Selected topics dealing with current economic affairs are treated.

ECON 301 Intermediate Macroeconomics 3(3-0) Prerequisite ECON 202, ENG 211, 120 and SPCOM 101.
Economic theory and policy using the national income approach to explain income, employment and growth.

ECON 302 Intermediate Microeconomics 3(3-0) Prerequisite ECON 202, ENG 211, 120, SPCOM 101, BUSAD 160, 261 and ACCTG 202.
Study of price system and theory of the firm under varying market structures.

ECON 307 Current Economic Issues 3(3-0) Prerequisite ECON 101 or 202.
Analytical survey of significant problems of current economic policy and application of economic analysis to important social issues.

ECON 310 Money and Banking 3(3-0) Prerequisite ECON 202.
Relationships of banks to the Federal Reserve system and Treasury Department and to money.

ECON 330 Public Finance 3(3-0) Prerequisite ECON 202.
Principles and issues of government revenue and expenditure policies.

ECON 340 Comparative Economic Systems 3(3-0) Prerequisite ECON 202.
Contending ideologies which shape economic systems in determining what, how, for whom and the rate of economic growth.

ECON 360 Business Cycles Analysis and Forecasting 3(3-0) Prerequisite ECON 202.
Examines market economy in a systematic way to reveal the nature of economic instability.

ECON 402 Economics of Labor 3(3-0) Prerequisite ECON 202.
Study of labor and management relations, operations of labor markets, determination of wages and distribution of income.

ECON 408 Urban Economics 3(3-0) Prerequisite ECON 202.
Theories and methods of economic analysis of urban problems.

ECON 410 Managerial Economics 3(3-0) Prerequisite ECON 202 and senior standing.
Practical application of well-known principles to economic problems of managers.

ECON 420 History of Economic Thought 3(3-0) Prerequisite ECON 202.
Economic thought of important contributors from the past to the present.

ECON 450 Econometrics 3(3-0) Prerequisite ECON 202 and MATH 121.
Treatment of theory, mathematics and statistics necessary for serious quantitative analysis of economic phenomena with a focus upon practical application in dealing with uncertainty in problem-solving.

ECON 480 Small Business Studies 3(3-0) Prerequisite Senior standing and permission of assistant dean, School of Business.
Integrates prior studies toward solving problems faced by selected firms in the community and/or computer simulation of business cases.

ECON 491 Special Topics (1-3 VAR) Prerequisite Permission of instructor.
Selected topics of economic issues and economic analysis are treated.

ECON 495 Independent Study (1-3 VAR) Prerequisite Senior standing in School of Business and permission of assistant dean, School of Business.
Individual research, directed readings, and/or special assignments.

ECON 498 Internship (1-6 VAR) Prerequisite Junior standing in School of Business and permission of assistant dean, School of Business.
Supervised field work in selected business, social, and governmental organizations; supplemented by periodic seminars and written reports.

GRADUATE

ECON 501 Managerial Economics 3(3-0) Prerequisite Graduate standing.
The application of analytical economic decision-making methods to managerial problems involving productivity, supply and demand, cost, price, profit and volume.

ECON 591 Special Topics 3(3-0)
Critical review and discussion of relevant economics topics.

ECON 592 Research (1-6 VAR)
The student will work under the close supervision of a graduate faculty member in basic or applied research resulting in a report of high academic quality.

ECON 596 Thesis Research (1-6 VAR)
Research conducted under the direction of graduate faculty..

EDUCATION

Faculty: Gutierrez, Hostetler, McCanne, Miller, Strader, Trujillo, Whitmer

In cooperation with other academic programs, the teacher education program in the School of Education, College of Professional Studies, offers courses leading to certification as an elementary teacher; a bilingual elementary teacher; a secondary teacher in selected subject area endorsements; a K-12 teacher in art, music or physical education; or a school nurse. Minors are offered in bilingual education and reading. Graduate courses for teachers are offered for the renewal of teaching certificates.

USC's education program is accredited by the Colorado Department of Education and the National Council for the Accreditation of Teacher Education. The program is rated highly in the Colorado Department of Education's survey of first- and third-year teachers.

GRADUATE PROGRAMS

The education program offers graduate courses in support of a masters of arts degree (MA) for secondary industrial education teachers. Details are described in the Graduate Studies Program section of this catalog.

Through a consortium arrangement with Adams State College, USC offers a master of arts degree in elementary education. The two-year cyclical program is designed for certified elementary teachers. Courses are offered in the evening during the school year, and daily during summer semesters. See the Graduate Studies Program section of this catalog for details.

TEACHER CERTIFICATION

Programs approved for teacher certification by the Colorado Department of Education are offered for the following endorsements: elementary education (grades K-6); linguistically different - bilingual bicultural emphasis; secondary education (grades 7-12) in art, English, foreign language, industrial education, mathematics, music, physical education, science, social studies and speech; a K-6 endorsement in music and K-12 endorsements in art and physical education. A school nurse endorsement is offered in cooperation with the department of nursing program. Endorsement programs are open to approved undergraduate or graduate students. For undergraduate students the teacher education sequence (except school nurse category which required only one education course) may be designated as an area of concentration for the baccalaureate degree.

Admission to the teacher education program is based upon a second-level of admission. Criteria required for admission includes experience with children or youth, a 3.0 grade point average or better in certain courses, a 2.5 grade point average or better overall, and passing scores on state-required teacher competency examinations. Detailed requirements are described in a **Teacher Education Handbook** which is available at the USC Bookstore. Students are required to meet admission criteria and follow the endorsement program in effect at the time of their admission to the teacher education program. Since the criteria and program change from time-to-time, it is important that teacher certification candidates consult an education adviser and an adviser in the area of the major each semester. Applications for admission, worksheets showing the sequence of courses required for teaching certificate endorsements, and names and appointment times of advisers are available at the program office, LW 331, phone 549-2681.

MINOR

Academic minors are offered in bilingual education and in reading. The minors are not certification programs, but may be chosen by teacher certification candidates at either the elementary or secondary level.

ED COURSES

UNDERGRADUATE

ED 102 Teaching as a Career 1(1-1)
Orientation to teaching and teacher education. Class sessions and classroom observation required.

ED 110 Teacher Aid Field Experience 1(0-3) Prerequisite Initial testing in basic competencies.
Work in a public school as teacher aid under the supervision of a classroom teacher and an education department instructor.

ED 202 Foundations of Education 3(3-0) Prerequisite ED 102.
Historical, philosophical and sociological dimensions of education including legal and financial challenges associated with the institution of education.

ED 210 Human Growth and Development for Educators 3(3-0) Prerequisite PSYCH 101, 102 and ED 102.
Physical, mental, social and emotional growth of the individual; provides perspective on the elementary and secondary school student as needed by teachers.

ED 325 Early Field Experience with the Atypical Learner (1-3 VAR) Prerequisite ED 324 and initial testing in basic competencies.
Development and implementation of principles introduced in ED 324 with a tutorial situation.

ED 400 Workshop (1-3 VAR) Prerequisite Admission to teacher education program or permission of instructor.
Designed for special activity-oriented experiences to be conducted in short sessions. Each workshop has a subtitle and no subtitle may be repeated for credit.

ED 412 Teaching the Special Child 3(2-3) Prerequisite PSYCH 351 and initial testing in basic competencies. Admission to teacher education program or permission of instructor.
Establishing baseline skills, identifying behaviors, planning, adapting materials and measuring progress for the atypical learner in the mainstream.

ED 413 Teaching Social Studies 2(1.5-1.5) Prerequisite Initial testing in basic competencies. Admission to teacher education program or permission of instructor.
Methods of teaching social studies in elementary school. Part of elementary field experience block.

ED 414 Teaching Elementary Science and Health 2(1.5-1.5) Prerequisite Admission to teacher education program or permission of instructor and initial testing in basic competencies.
Methods of teaching health and science in the elementary school. Part of elementary field experience block.

ED 415 Kindergarten Education 2(1.5-1.5) Prerequisite Initial testing in basic competencies. Admission to teacher education program.
Philosophy and methods of teaching kindergarten. Required for student teaching in kindergarten or first grade. Part of elementary field experience block.

ED 417 Teaching Mathematics in Elementary School 2(1.5-1.5) Prerequisite MATH 361, admission to teacher education program.
The scope and sequence of elementary school mathematics are examined. Instructional methods are considered in terms of both the content and the cognitive developmental rates and other individual differences of children.

ED 420 Computer Based Education 2(1-2) Prerequisite Admission to teacher education program.
Survey of computer use in education. Brief history, potential benefits and limitations, current microcomputer applications in the classroom and principles for evaluation of educational software.

ED 435 Classroom Management 3(2-3) Prerequisite Admission to teacher education program.
Five-week course to be taken during student teaching semester except K-12 students, who take it one semester before student teaching. Includes general teaching methods and strategies; learning theories applied to teaching; discipline; curriculum; educational measurement and evaluation, school organization and school law applicable to classroom teachers. Field experience required.

ED 460 Laboratory in Education 3(2-3) Prerequisite Admission to teacher education program.
Five-week course to be taken during student teaching semester except K-12 students, who take it one semester before student teaching. Preparation and use of audiovisual materials, equipment and use of computers in instruction. Field experience required.

ED 461 Atypical Students in the Secondary School 2(1.5-1.5) Prerequisite PSYCH 351 and initial testing in basic competencies. Admission to teacher education program.
Individual differences as they affect the learning process and instructional alternatives for meeting individual needs. Emphasis on mainstreamed students. Field experience required.

ED 487 Student Teaching Elementary (1-15 VAR) Prerequisite Admission to teacher education program.
Elementary level. Application must be submitted one full semester prior to the semester in which student teaching will commence. (S/U grades.)

ED 488 Student Teaching Secondary (1-15 VAR) Prerequisite Admission to teacher education program.
Secondary level. Application must be submitted one full semester prior to the semester in which student teaching will commence. (S/U grades.)

ED 489 Student Teaching K-12 (1-15 VAR) Prerequisite Admission to teacher education program.
K-12 level. Available for art, music and physical education majors. Application must be submitted one full semester prior to the semester in which student teaching will commence. (S/U grades.)

ED 491 Special Topics (1-3 VAR)
Designed to meet expressed needs of students. Each topic course has a subtitle and no subtitle may be repeated for credit.

ED 494 Field Experience (1-10 VAR)
Field experience in an educational setting. Not applicable to teacher certification.

ED 495 Independent Study (1-3 VAR)
Individual education projects and problem-solving experiences designed to meet a student's special needs.

GRADUATE

ED 500 Workshop (1-3 VAR) Prerequisite Graduate standing.
Design for activity-oriented experiences to be conducted in short summer sessions. Each workshop has a subtitle and no subtitle may be repeated for credit.

ED 501 Research 2(2-0) Prerequisite Graduate standing.
Skills and techniques for locating, analyzing and evaluating educational research.

ED 505 Education Across Cultures 2(2-0) Prerequisite Graduate standing.
Analysis of multiculturalism and how the educational process can be adapted to children of diverse cultural backgrounds.

ED 512 Teaching the Special Child 3(2.5-1.5) Prerequisite Graduate standing plus PSYCH 351 or ED 555.
Establishing baseline skills, identifying behaviors, planning, adapting materials and measuring progress for the atypical learner in the mainstream.

ED 520 Computer Based Education 2(1-2) Prerequisite Graduate standing.
Survey of computer use in education. Brief history, potential benefits and limitations, current microcomputer applications in the classroom and principles of evaluating educational software.

ED 522 Issues in Education 2(2-0) Prerequisite Graduate standing.
Contemporary problems in education, their historical development and philosophical implications.

ED 524 Advanced Techniques of Teaching Elementary Social Studies 2(2-0) Prerequisite Graduate standing.
Analysis of techniques for conceptual approaches to teaching; teaching socialization skills, critical thinking and inquiry skills; and helping children develop healthy attitudes and values.

ED 525 Advanced Techniques of Teaching Elementary Science and Health 2(2-0) Prerequisite Graduate standing.
Emphasis on the newest concepts, techniques and materials for teaching elementary school science and health.

ED 526 School Health Curriculum 2(2-0) Prerequisite Graduate standing.
Training (by grade level) in the use of "Growing Healthy" — the Primary Grades Health Curriculum Project and the School Health Curriculum Project. This is lateral spread training only, by agreement with the Rocky Mountain Regional Training Center.

ED 530 Instructional Programming I 2(2-0) Prerequisite Graduate standing.
Principles of curriculum design, educational goals, instructional objectives, developing long, middle and short-range plans. For elementary and secondary teachers.

ED 542 Contemporary Techniques of Classroom Management 2(2-0)
What research and professional practice say about organizing students, space, information, and resources; motivating, goal setting, communicating, and problem solving with student; handling disruptions and behavior problems.

ED 549 Child Advocacy 3(2-3) Prerequisite Graduate standing.
Research study of international child advocacy programs, national movement and local adaptations. Requires the analysis of a model operating in agency or institution of student's choice.

ED 555 Foundations of Learning Disorders 3(3-0) Prerequisite Graduate standing.
Exceptionalities; emphasis on high incidence handicaps. Includes recent legislation and identification, referral, staffing and placement procedures. Major intervention strategies examined.

ED 560 Teacher Effectiveness Training (2-3 VAR) Prerequisite Graduate standing.
Stresses skill-building in classroom interaction between teacher and students. Skills include active listening, "I" messages and problem solving.

ED 561 Atypical Students in the Secondary School 2(1.5-1.5) Prerequisite Graduate standing plus PSYCH 351 or ED 555.
Individual differences as they affect the learning processes. Instructional alternatives for meeting individual needs in regular classes are explored with emphasis on mainstreamed students. Basic principles of behavior modification and contingency contracting are included.

ED 591 Special Topics (1-3) Prerequisite Graduate standing.
Designed to meet the expressed needs of students. Each topic course has a subtitle and no subtitle may be repeated for credit.

ED 592 Research (1-3 VAR) Prerequisite Graduate standing and permission of graduate adviser.
Action research in a teacher's classroom supervised by a graduate faculty member. Proposals must be negotiated prior to class enrollment.

ED 595 Independent Study (1-2 VAR) Prerequisite Graduate standing and permission of graduate adviser.
Qualified graduate students may negotiate an independent study plan with a member of the graduate faculty for one or two credits.

ED 596 Thesis Research (1-6 VAR)
Research conducted under the direction of graduate faculty.

BBE COURSES

UNDERGRADUATE

BBE 363 Multicultural Education 2(2-0)
Review of significant historical events, sociocultural characteristics and value orientations of the people of the Southwest.

BBE 400 Workshop (1-3 VAR)
Development of classroom materials/curriculum in bilingual education.

BBE 401 Teaching the Limited English Proficient Student 2(1.5-1.5) Prerequisite Admission to teacher education program.
Methods and techniques of teaching English to children of linguistically and culturally different backgrounds.

BBE 403 Teaching Elementary Subjects in Bilingual Education 3(2-3)
Practice in teaching principles of subject matter in bilingual education.

BBE 460 Survey of Language/Cultural Tests in Bilingual Education 2(2-0)
Introduction to current language/cultural instruments for the prospective bilingual education teacher of the elementary school.

BBE 487 Student Teaching Bilingual (1-15 VAR) Prerequisite Admission to the teacher education program.
For students in elementary bilingual program. Department approval required before enrollment. Application for student teaching must be submitted one full semester prior to enrollment. (S/U grades.)

BBE 495 Independent Study (1-2 VAR)
Special research for the student specializing in bilingual education.

GRADUATE

BBE 500 Workshop (1-3 VAR) Prerequisite Graduate standing.
In-depth practicums in the development of classroom materials/curriculum in bilingual education.

BBE 505 Education Across Cultures 2(2-0) Prerequisite Graduate standing.
Analysis of multiculturalism in education and how the educational process can be adapted to children of diverse cultural backgrounds.

BBE 541 Survey of Research in Bilingual Education 2(2-0) Prerequisite Graduate standing and BBE 412.
Review of research related to bilingual education.

BBE 595 Independent Study (1-2 VAR) Prerequisite Graduate standing.
Special research for the student specializing in bilingual education.

RDG COURSES IN EDUCATION

UNDERGRADUATE

RDG 301 Reading and Language Arts in the Elementary School 3(3-0) Prerequisite Initial testing in basic competencies.
Foundations of reading and language arts including psychology of reading, oral language development, reading readiness, word attack, comprehension strategies, vocabulary, handwriting, spelling, written and oral language skills.

RDG 310 Current Approaches to Reading and Writing Instruction 3(3-0) Prerequisite RDG 201.
Various approaches in teaching reading including research finding and classroom application, basal readers, phonics, centers, psycholinguistics, and technology.

RDG 360 Practicum (1-3 VAR) Prerequisite RDG 201 or 425.
Work under a reading teacher in the public school preparing materials, lessons and working with small groups and individual pupils. Applies to both elementary and secondary schools depending upon the instructor's assignment.

RDG 425 Teaching Reading in Content Areas 2(2-0)
Reading skills, strategies and activities to improve comprehension of textual material in mathematics, science, literature, social sciences, industrial arts and other subjects.

RDG 431 Developing Creative Centers 1(1-0) Prerequisite RDG 201.
Involves, planning, developing and implementing the use of creative learning centers in the classroom. In addition to presentations on uses of centers to individualize instruction; students will develop centers, record-keeping and scheduling systems.

RDG 436 New Directions in Reading Comprehension 2(2-0) Prerequisite Admission to teacher education program.
Exploration of and simulations of research based strategies to increase students comprehension of reading in elementary and secondary classes.

RDG 437 Newspapers as a Teaching Resource 1(1-0)
Strategies and procedures for using the newspaper as a supplementary resource in content area classrooms at all grade levels (K-12).

RDG 442 Reading Across Cultures 2(2-0) Prerequisite RDG 201.
Techniques of adapting reading instruction for the linguistically and culturally different child. Problems of many minority groups are analyzed.

RDG 450 Diagnosis and Remediation of Reading Problems 3(2-3) Prerequisite RDG 201.
Diagnostic and evaluation procedures used in reading techniques for remediation of problems and individualized instruction. Appropriate for elementary and secondary teachers.

RDG 491 Special Topics (1-2 VAR)
Special interest course for reading minors and teachers.

RDG 495 Independent Study (1-2 VAR)
Individual projects and problem solving experiences designed to meet student's special needs. With instructor's permission, certain program requirements may be completed through independent study.

GRADUATE

RDG 510 Foundations of Reading Instruction 3(3-0) Prerequisite Graduate standing.
Basic course for other graduate reading courses, including reading skills, sequence, materials, psychology of reading and relationship to other language arts.

RDG 525 Teaching Reading in the Content Area 2(2-0) Prerequisite Graduate standing.
Reading skills specifically used in mathematics, science, social studies and literature, including specific techniques for teaching.

RDG 531 Developing Creative Centers 1(1-0) Prerequisite Graduate standing.
Students will investigate various types of learning centers and means of successful implementation in the classroom. Development of materials, lesson plans and record-keeping systems which will result in a complete reading center. Investigation into research on effectiveness of learning centers.

RDG 536 New Directions in Reading Comprehension 2(2-0) Prerequisite Graduate standing.
Current research based theory and practical classroom strategies and procedures for increasing comprehension of reading in elementary and secondary content area. Emphasis on open-ended higher order thinking skills.

RDG 537 Newspapers as a Teaching Resource 1(1-0)
Strategies and procedures for using the newspaper as a supplementary resource in content area classrooms at all grade levels (K-12).

RDG 542 Reading Across Cultures 2(2-0) Prerequisite Graduate standing.
Problems and solutions in reading instruction for the linguistically or culturally different child.

RDG 550 Diagnosis and Remediation of Reading Problems 3(2-3) Prerequisite A beginning reading course and teacher certification or initial testing in basic competencies.
Formal and informal diagnostic procedures for the classroom teacher including standardized testing, informal inventories, cloze, criterion-referenced testing and Reading Miscue Inventory. Prescriptions based on diagnosis; remediation strategies applied by students.

RDG 552 Psycholinguistic Views of Reading: Process to Practice 2(1-3) Prerequisite Beginning course in reading and teacher certification or initial testing in basic competencies.
Introduction to psycholinguistic perspectives through analysis of oral reading errors. Reading Miscue Manual as an instrument for investigating reader's strengths and weaknesses. Strategies for remediating poor quality miscues.

RDG 560 Practicum 2(0-6) Prerequisite RDG 201 or 425 and teacher certification or initial testing in basic competencies.
Work under a reading teacher in public schools preparing materials, lessons and working with small groups and individual pupils. Applies to both elementary and secondary schools depending on the instructor's assignment.

RDG 591 Special Topics (1-2 VAR) Prerequisite Graduate standing.
Innovations and current concerns in reading. Designed to meet expressed needs of students. Each topics course will have a subtitle and no subtitle may be repeated for credit.

RDG 595 Independent Study 1(0-2) Prerequisite Beginning course in reading.
Special projects in reading relative to needs of advanced students. Research special topics, curriculum development under close supervision.

ELECTRONICS ENGINEERING TECHNOLOGY

Faculty: Cottrell, Hill, Jenkins, Perkins, Reiff, Warfield

The program in electronics engineering technology offers courses leading to the degree of bachelor of science in electronics engineering technology (BSEET). This program is accredited by the Technology Accrediting Commission of the Accreditation Board for Engineering and Technology (ABET).

The engineering technologist is prepared to function at the appropriate level of skill and theory as an integral member of a team of engineers, scientists, and technicians in areas of electronics/computer development, design, manufacturing, testing, research, installation and maintenance.

Job opportunities have been numerous over recent years, and the United States bureau of labor statistics continues to project that technologists will be sought after by industry, government and other prospective employers through the 1980's.

Students considering engineering technology majors should realize that the programs are rigorous, demanding and oriented toward problem solving. A suitable high school background includes at least a two-year sequence in mathematics, including algebra, and at least one year in a physical science such as physics or chemistry. Students without this background should expect to take longer than normal to complete this program.

MAJORS

The four-year baccalaureate degree program prepares graduates for positions in the electronics industry. Basic design concepts, as well as construction, testing, analysis, and computer applications are included in the program. Specifically, theory and laboratory work cover: design, construction, testing, analysis and computer applications of conventional or state-of-the-art circuits and systems. Creative design relating to the more routine circuits and systems involving both discrete components and integrated circuits is included as part of the course work in the junior and senior years. This program also increases the student's academic background as necessary for many advanced positions in the electronics industry.

Transfer students entering the program must have a minimum 2.5 grade point average overall and a minimum 2.0 grade point average in mathematics, physics and electronics.

The BSEET degree candidate must complete, with a minimum 2.0 cumulative grade point average in electronics, at least 134 semester credit hours of work as determined by the program requirements and approved by the adviser.

A typical electronics engineering schedule is:

Freshman Year			**Credits**
EET	121, 122	DC Circuits and AC Circuits	8
EET	143	Electronics I	5
EET	161, 162	Circuits Lab I and II	2
EET	163	Electronics Lab I	1
ENG	115, 216	Technical and Scientific Writing I and II	6
MATH	131, 132	Math for Engineering Technologists	8
PE	100	PE Orientation	2
		General Education	3
			35

Sophomore Year			**Credits**
EET	251	Electronics II	4
EET	252	Linear Integrated Circuits	4
EET	254	Introduction to Digital Systems	4
EET	255	Introduction to Microcomputers	4
EET	263	Manufacturing Techniques	2
EN	245	PASCAL Computer Programming	3
MATH	233	Math for Engineering Technologists	5
PHY	201/201L	Principles of Physics I and Lab	4
	202/202L	Principles of Physics II and Lab	4
		General Education	2
			36

Junior Year			**Credits**
EET	331	Electronic Circuits	3
EET	353	Software Development	4
EET	354	Computer Architecture and Design	3
EET	356	Advanced Integrated Circuits	3
EET	361	Electronics Circuits Lab	2
EN	341	Engineering Economy	3
RDG	120	College Reading	2
		General Education	6
		Approved EET Elective	3
		Approved Math Elective	3
			32

Senior Year			Credits
EET	411	Linear Systems Analysis	3
EET	412	Communication Systems	3
EET	452	Advanced Microcomputer Systems	3
EET	455	Introduction to Control Systems	4
SPCOM	101	Expository Speaking	2
		General Education	9
		Approved EET Elective	3
		Approved Technical Electives	5
			32

Computer design emphasis. In response to industries' critical need for engineering technologists with a computer design background, the electronics engineering technology department offers this option in the junior and senior years. It allows the student to complete a total of 29 semester hours of computer courses in fulfillment of the requirements for a bachelor of science degree in electronics engineering technology. Only one additional semester hour is required over the regular EET program total semester hour requirements. Students electing this option must consult an adviser before registering for the junior year.

EET COURSES

EET 108 Basic Electronic Principles I 2(0-4) Prerequisite MATH 105.
Fundamentals of electric circuits, batteries, magnetism, motors, generators, transformers and test equipment. GEN. ED. IIIC.

EET 109 Basic Electronic Principles II 2(0-4) Prerequisite EET 108.
Basic study of diodes, transistors, tubes, integrated circuits, basic amplifying circuits, power supplies and oscillators. GEN. ED. IIIC.

EET 121 DC Circuits 5(5-0) Corequisite MATH 131.
DC circuits, energy, power, resistance, capacitance, inductance, electromagnetism, loop and nodal network analysis, Thevenin's and Norton's theorems.

EET 122 AC Circuits 3(3-0) Prerequisite EET 121. Corequisite MATH 132.
AC circuit analysis, RMS values, impedance, admittance, phasors, network theorems, resonance, transformers, polyphase systems, power, and power factor.

EET 143 Electronics I 5(5-0) Corequisite EET 122 and MATH 132.
Semiconductor physics, diodes, power supplies, analysis and design of transistor circuits, biasing, equivalent circuits, multi-stage amplifiers, frequency effects, power stages, field effect transistors.

EET 161 Circuits Lab I 1(0-2) Corequisite EET 121.
Use of electronic instruments and practical experience relating to specific principles of DC circuits, capacitance, inductance and electro-magnetism.

EET 162 Circuits Lab II 1(0-2) Prerequisite EET 161. Corequisite EET 122.
Effects of AC on RLC circuits, impedances, inductance, resonance, transformers and use of the oscilloscope.

EET 163 Electronics Lab I 1(0-2) Corequisite EET 143 and 162.
Use of oscilloscope and transistor curve tracer. Design of diode rectifier and zener regulator circuits, analysis and test of elementary and cascaded transistor amplifier circuits.

EET 251 Electronics II 4(3-2) Prerequisite EET 122, 143, 162 and 163. Corequisite MATH 233.
Feedback effects, oscillators, frequency spectra, harmonics. Transistor and diode switches. Linear waveshaping; multivibrator, Schmitt trigger, and time base circuits. AM and FM communications.

EET 252 Linear Integrated Circuits 4(3-2) Prerequisite EET 251.
Applications of linear integrated circuits such as operational amplifiers, power supply regulators and active filters. Includes instrumentation amplifiers, comparators, timers and switching IC's.

EET 254 Introduction to Digital Systems 4(3-2) Prerequisite EET 122.
Digital techniques, including binary codes, Boolean Algebra, gates, flip-flops, counters, shift registers and arithmetic operations.

EET 255 Introduction to Microcomputers 4(3-2) Prerequisite EET 254.
Analysis of microcomputer systems including both hardware and software considerations, with emphasis on machine language programming. Includes microcomputer design project.

EET 263 Electronic Manufacturing Techniques 2(0-4)
Industrial practices, including schematic and printed circuit drafting, sheet metal fabrication, hand soldering, resistance welding, printed circuit board production, wave soldering.

EET 296 Cooperative Education Placement (1-5 VAR)
For freshman and sophomores. Industrial cooperative education work experience under direction of field supervisor and faculty member.

EET 321 Solid State Theory 3(3-0) Prerequisite EET 252, MATH 233 and PHYS 202/202L.
Physical electronics of solid state with applications to design and fabrication of current devices and integrated circuits. Crystal growth and structure, energy band theory, transport phenomena, surface effects, device structures and manufacturing techniques.

EET 331 Electronic Circuits 3(3-0) Prerequisite EET 251 and MATH 233.
Analysis and design of active circuits. Includes piecewise linear synthesis, transistor bias stability, large signal power amplifiers, applied design of feedback in integrated circuit applications.

EET 350 Electric Motors and Controls 3(2-2) Prerequisite EET 108 or 122 and MATH 233.
Analysis and operation of AC and DC motors and generators, including both single phase and three phase AC machines.

EET 353 Software Development 4(3-2) Prerequisite EN 245 or equivalent.
Electronics technology applications programming using structured programming techniques with PASCAL.

EET 354 Computer Architecture and Design 3(2-2) Prerequisite EET 143, 255, and EN 245.
Computer architecture, with emphasis on operation and design of both microprogrammed and randomly designed control units. Students must complete an extensive laboratory project which required the design, instruction and testing of an operational computer.

EET 356 Advanced integrated Circuits 3(2-2) Prerequisite EET 252.
Analysis of the inter-connection of integrated circuits into systems. Also covers design principles of systems.

EET 361 Electronic Circuits Lab 2(0-4) Corequisite EET 331.
Laboratory to verify and expand upon the design principles presented in Electronics Circuits theory course.

EET 411 Linear Systems Analysis 3(3-0) Prerequisite MATH 233, EET Junior or senior standing.
Analysis of analog and digital systems using Laplace and Z-transforms. Solution of differential equations as applied to electronic systems.

EET 412 Communication Systems 3(3-0) Prerequisite EET 411.
Conventional AM, FM analog systems and applications of the Fourier Series. Modern digital systems such as PAM, PCM, PDM, PPM and Delta Modulation are stressed.

EET 452 Advanced Microcomputer Systems 3(2-2) Prerequisite EET 255 and EN 245.
Advanced microcomputer systems, including the use and application of system development tools such as macro-assemblers and relocation utilities, and the comparative study of state-of-the-art 16/32 bit processors.

EET 455 Introduction to Control Systems 4(3-2) Prerequisite EET 411.
Block diagrams, transfer functions, practical systems, the Z transform, digital systems, frequency response techniques, Bode plots as applied to control systems. Includes robots.

EET 456 Design Projects 3(2-2) Prerequisite Junior or senior standing in EET.
Application of theory to practical design of electronic circuits and systems. The student designs, builds, tests and writes a technical report for his or her project.

EET 457 Computer Interface Design 3(2-2) Prerequisite EET 255.
Design and implementation of computer interfaces to input-output devices and other systems.

EET 458 Computer Communications 3(3-0) Prerequisite EET 255.
Computer communication techniques and computer networks including topics such as topology, protocols, routing and reliability analysis.

EET 459 Interactive Computer Systems 3(2-2) Prerequisite EET 353 or equivalent.
Pictorial communications with computers, graphics programs and specialized input/output devices.

EET 491 Special Topics (1-5 VAR) Prerequisite Permission of department head.
Topics in electronics not now included in other courses.

EET 493 Seminar (1-5 VAR) Prerequisite Qualified junior or senior students.
Participation by electronics students and presentation of recent developments in the electronics field.

EET 494 Field Experience (1-5 VAR) Prerequisite Permission of department head.
Off-campus practical work experience in electronics supervised by member of the department and on-the-job supervisor.

EET 495 Independent Study (1-5 VAR) Prerequisite Permission of department head.
Individual assignments under supervision of a staff member of the department.

EET 496 Cooperative Education Placement (1-5 VAR)
For juniors and seniors. Industrial cooperative education work experience under direction of field supervisor and faculty member.

ENGINEERING

Faculty: Cheng, Freark, Massey

The engineering program offers the degree of bachelor of science in industrial engineering (BSIEN) and provides courses for the completion of the first two years of the four-year BS degree requirements in civil, electrical and mechanical engineering for potential transfer students. It also provides upper-division courses for the engineering options in chemistry, geology and physics.

A student interested in an engineering career should begin preparation in high school by taking college preparatory courses in mathematics, chemistry and physics. Students without this background who are strongly motivated can enter the program but will have to complete some courses whose credits will not count toward the degree.

Industrial engineering. Industrial engineering is concerned with the design, improvement and installation of integrated systems of people, materials and equipment. It draws upon specialized knowledge and skill in the mathematical and physical sciences, together with the principles and methods of engineering analysis and design, to specify, predict and evaluate the results to be obtained from such integrated systems. Industrial engineering is a major branch of engineering concerned with physical systems and the people that design and operate them.

The activities of industrial engineers include work measurement, operations research, plant layout, applied statistics, ergonomics, materials handling, production planning and control, quality control, manufacturing operations and management consulting. The computer has significant applications among the techniques utilized by the industrial engineer.

Transfer requirements: Students transferring to industrial engineering must have earned a minimum 2.5 grade point average in all mathematics and science courses attempted, a minimum 2.5 grade point average in all engineering courses attempted and an overall 2.5 grade point average. Transfer students may be subject to examination at the discretion of the department.

Prerequisite courses. Students attempting any engineering course shown as being required for the four-year industrial engineering program must have completed all prerequisite courses with a minimum grade of C or they risk being withdrawn and/or losing credit for the course being attempted.

Graduation Requirement. A minimum grade of C in all industrial engineering program courses is required for graduation in addition to those requirements specified for all USC degrees.

The **required** industrial engineering schedule is:

Freshman Year			**Credits**
CHEM	121/121L	General Chemistry I and Lab	5
EN	106	FORTRAN Computer Programming	3
EN	107	Engineering Graphics	2
ENG	110, 211	Composition I and II	6
MATH	126, 224	Calculus and Analytic Geometry I and II	10
PE	100	PE Orientation	2
PHYS	221/221L	General Physics I and Lab	5
RDG	120	College Reading	2
			35

Sophomore Year			**Credits**
EN	211, 212	Engineering Mechanics I and II	6
EN	231/231L	Circuit Analysis and Lab	5
EN	324/324L	Mechanics of Materials and Lab	4
MATH	337	Differential Equations I	3
MATH	350	Probability	3
PHYS	222/222L	General Physics II and Lab	5
SPCOM	101	Expository Speaking	2
*Group	I or II	General Education	6
			34

Junior Year			**Credits**
BIOL	223	Human Physiology and Anatomy I	3
EN	301	Fluid Mechanics	4
EN	312/312L	Materials Science and Lab	3
EN	315	Introduction to Organization and Operations	3
EN	321	Thermodynamics I	3
EN	340	Principles of Industrial Engineering	3
EN	342	Manufacturing Processes I	3
EN	343	Industrial Engineering Economy	3
EN	456	Applied Statistics I	3
MATH	301	Problem Solving	1
*Group	I or II	General Education	5
			34

Senior Year			Credits
EN	442	Manufacturing Processes II	3
EN	443	Quality Control and Reliability	3
EN	471	Engineering Operations Research	3
EN	473	Production and Computer-Aided Engineering	3
EN	475	Engineering Systems Analysis and Design	3
EN	477	Operations Planning and Control	3
EN	488	Industrial Engineering Design Project	3
*Group	I or II	General Education	9
		Approved Elective	3
			33

*See departmental list of acceptable Group I and II courses.

Engineering transfer program. Students planning to transfer to Colorado State University, Ft. Collins, should adhere to the program shown below. Students planning to transfer to the University of Colorado, Boulder, Denver or Colorado Springs; or Colorado School of Mines, Golden, should consult an engineering adviser for program variations.

Engineering transfer program requirements for Colorado State University are:

Freshman Year			Credits
CHEM	121/121L	General Chemistry I and Lab	5
EN	106	FORTRAN Computer Programming	3
EN	107	Engineering Graphics	2
ENG	110	Composition I	3
MATH	126, 224	Calculus and Analytic Geometry I and II	10
PE	101-188	Physical Education	2
PHYS	221/221L	General Physics I and Lab	5
*Group	I or II	General Education	3
			33

Sophomore Year			
EN	211, 212	Engineering Mechanics I and II	6
EN	231, 231L	Circuit Analysis I and Lab	5
EN	232	Circuit Analysis II	4
EN	321	Thermodynamics	3
MATH	325	Intermediate Calculus	4
MATH	337	Differential Equations I	3
PHYS	222/222L	General Physics II and Lab	5
*Group	I or II	General Education	3
			33

*See departmental list of acceptable Group I and II courses.

1) Students should consult an engineering adviser for program variations in agricultural and chemical engineering.
2) Transfer students should have a grade point average of 2.5 or better with 60 S.H. credit or more and a grade point average of 3.0 or better with less than 60 S.H. credit.
3) Applications must be received by Feb. 1 to qualify for priority consideration.
4) Students who have grades of D in any of the pre-engineering courses will be considered on an individual basis.

Engineering Options. Engineering options in chemistry, geology or physics offer students in each of these majors an opportunity to achieve specific employment or graduate educational goals. These options have been cooperatively designed by chemistry, geology, physics and engineering faculty to include selected upper-division engineering courses and provide a broad background in science and engineering.

The program requirements for the individual engineering options are described in the chemistry, geology or physics sections of this catalog.

EN COURSES

EN 103 Introduction to Engineering 2(2-0)
Introduction to the solution of engineering problems. Application of algebraic, trigonometric and calculus techniques to engineering problems. GEN. ED. IIID.

EN 104 Introduction to BASIC Programming in Engineering 2(2-0)
Computer programming using BASIC, examples from various engineering disciplines.

EN 105 FORTRAN 2(2-0)
Introduction to FORTRAN computer programming with examples drawn from various engineering technology disciplines. GEN. ED. IIID.

EN 106 FORTRAN Computer Programming 3(3-0)
FORTRAN language computer programming using examples and numerical techniques chosen from mathematics, science and engineering. GEN. ED. IIID.

EN 107 Engineering Graphics 2(0-4)
Introduction to the preparation of engineering drawings using freehand sketching, drafting instruments and graphics of software.

EN 211 Engineering Mechanics I 3(3-0) Prerequisite MATH 126, PHYS 221 or permission of instructor.
Introduction to the relationship between forces and moments acting on an object that is in equilibrium.

EN 212 Engineering Mechanics II 3(3-0) Prerequisite EN 211.
Introduction to the relationship between forces and moments acting on rigid objects and the motion of the objects.

EN 223 Engineering Surveying I 3(2-2) Prerequisite MATH 122.
Basic course in surveying including use of tape, compass, transit and level in plane and geodetic surveying and introduction to triangulation and trilateration.

EN 231 Circuit Analysis I 4(4-0) Prerequisite MATH 224. Corequisite EN 231L, PHYS 222.
Circuit concepts, conventions and network equations. Initial conditions and classical method of obtaining transient and steady-state solutions.

EN 231L Circuit Analysis Lab I 1(0-2) Corequisite EN 231.
Observation and analysis of electrical circuits and transients involving resistance, inductance and capacitance.

EN 232 Circuit Analysis II 4(4-0) Prerequisite EN 231. Corequisite EN 232L.
Continuation of EN 231 including waveform synthesis, network theorems. Fourier series, pole-zero diagrams and two-port network theory. Introduction to Laplace transform.

EN 232L Circuit Analysis Lab II 1(0-2) Prerequisite EN 231. Corequisite EN 232.
Continuation of EN 231L Lab.

EN 242 Computer Engineering 3(2-2) Prerequisite EN 106 or equivalent and MATH 121.
Computer architecture, logic design, microprocessors, microcomputers, assembly language programming, and applications.

EN 245 Pascal Computer Programming 2(2-0)
Computer programming using Pascal language, applications in engineering and science areas, practical programming exercises.

EN 270 Material and Energy Balances 3(3-0) Prerequisite CHEM 121, PHYS 221 and MATH 126.
Material and energy balances with or without chemical reactions in chemical engineering applications.

EN 291 Special Topics (1-5 VAR)
For students who have a special interest in some area of engineering not covered by existing courses.

EN 296 Cooperative Education Placement (1-5 VAR)
For freshmen and sophomores. Work experience under direction of a field supervisor and faculty member.

EN 301 Fluid Mechanics 4(4-0) Prerequisite EN 212.
Introduction to the relationship between the forces applied to a fluid, the motion of the fluid, and the mechanical properties of the fluid.

EN 312 Materials Science 2(2-0) Prerequisite PHYS 221. Corequisite EN 312L.
The nature of engineering materials, emphasizing the relationship between macroscopic and atomic and microscopic structures.

EN 312L Materials Science Lab 1(0-2) Corequisite EN 312.
Experimental studies of material properties, characteristics and microstructures. Effects of plastic deformation and heat treatment.

EN 315 Introduction to Organization and Operations 3(3-0)
Engineering viewpoints of the principles of organization for production and the operations applicable to accomplishing organizational responsibilities.

EN 321 Thermodynamics I 3(3-0) Prerequisite PHYS 202 or 221 or equivalent.
Introduction to energy equations and flows, entropy, kinetic theory and statistical mechanics.

EN 322 Thermodynamics II 4(4-0) Prerequisite EN 321.
Application of laws of thermodynamics to chemically reacting thermodynamic systems, vapor cycles, gas engine cycles, propulsion systems, refrigeration and air-water vapor mixtures.

EN 323 Engineering Surveying II 3(2-2) Prerequisite EN 223.
State-plane coordinates and celestial observation. Theory and practice in horizontal and vertical curves. Earthwork problems.

EN 324 Mechanics of Materials 3(3-0) Prerequisite EN 211. Corequisite EN 324L.
Stress-strain relationships, fundamentals of elasticity, torsional loading, flexural loading, combined stresses.

EN 324L Mechanics of Materials Lab 1(0-2) Prerequisite EN 211. Corequisite EN 324.
Measurements of stress-strain and other destructive or non destructive testing.

EN 331 Electronics I 3(3-0) Prerequisite EN 231. Corequisite EN 331L.
Analysis, design and applications of semiconductor diodes, transistors, amplifiers, feedback, and integrated circuits.

EN 331L Electronics Lab I 2(0-4) Corequisite EN 331.
Laboratory to verify experimentally the theories presented in Electronics I.

EN 333 Computer Components Engineering 3(3-0) Prerequisite EN 231 and 312.
Engineering design and fabrication of silicon-based, bipolar, MOS microcircuits and other computer elements. Microcircuit design and layout.

EN 340 Principles of Industrial Engineering 3(3-0) Prerequisite EN 315, MATH 350 and industrial engineering junior standing.
Principles and techniques of work measurement and production standards; human performance in man-machine systems.

EN 341 Engineering Economy 3(3-0) Prerequisite Junior standing.
Economic and financial aspects of investments in engineering projects.

EN 342 Manufacturing Processes I 3(3-0) Prerequisite EN 312/312L.
Materials and processes for manufacturing including machining, casting, and forming processes: design, modeling and control.

EN 343 Industrial Engineering Economy 3(3-0) Prerequisite EN 106, Math 224 and 350.
Modeling, analysis and decision making involving time value of money, depreciation and taxation effects. Optimization and replacement analysis.

EN 351 Heat Transfer 3(3-0) Prerequisite EN 321.
Steady and unsteady conduction of heat. Convection heat transfer in boundary layer and duct flows. Forced and free convection. Thermal radiation.

EN 421 Structural Analysis 3(3-0) Prerequisite EN 324.
Analysis of indeterminate beams, frames and trusses by methods of moment of distribution, slope deflection, real work, virtual work and least work.

EN 423 Engineering Highway Design 3(3-0) Prerequisite EN 323.
Highway planning, geometric design of modern highways, horizontal and vertical alignment, cross-sections, subgrade structure drainage systems of highways, interchanges and intersections.

EN 435 Microprocessor Control Systems 3(2-2) Prerequisite EN 331.
Components of a microprocessor control system, digital processing, survey of state-of-the-art microprocessor control systems.

EN 436 Computer Systems Engineering 3(3-0) Prerequisite EN 333 and MATH 337.
Analysis, mathematical modeling and design of integrated control and physical systems used in product and process design engineering.

EN 442 Manufacturing Processes II 3(3-0) Prerequisite EN 342 and MATH 350.
Materials and processes for manufacturing including sheet metal forming, welding machining, and advanced manufacturing processes.

EN 443 Quality Control and Reliability 3(3-0) Prerequisite EN 456.
Control charts, acceptance sampling, rectifying inspection, standard sampling plan. Failure time distribution models, reliability estimation, hazard function, reliability of systems.

EN 451 Engineering Hydrology 3(3-0) Prerequisite EN 301 or permission of instructor.
Occurrence and distribution of water, precipitation, evaporation, transpiration, infiltration, streamflow, groundwater and well flows, runoff and drainage and hydrography analysis.

EN 456 Applied Statistics I 3(3-0) Prerequisite MATH 224 and 350.
Probability space, discrete and continuous random variables; distributions; mathematical expectation; sampling; statistical inference; Bayesian rule; and linear regression.

EN 461 Engineering Hydraulics 3(3-0) Prerequisite EN 301 or permission of instructor.
Steady and unsteady flow in pipes, open-channel flow, hydraulic measurements, critical depth and hydraulic jump, and design of spillways.

EN 471 Engineering Operations Research 3(3-0) Prerequisite EN 340, 456 and MATH 350.
Application of mathematical models to engineering problems. Linear and dynamic programming, optimization and queuing theory and probablistic models.

EN 473 Production and Computer-Aided Engineering 3(3-0) Prerequisite EN 340, 342 and MATH 337, 350.
Engineering design, modeling and applications in production: automated flow lines, numerical control and computer usage in manufacturing.

EN 475 Engineering Systems Analysis and Design 3(3-0) Prerequisite EN 442, 471, 473 and MATH 350.
Engineering systems design, planning and control: engineering analysis and design applications in resource utilization.

EN 477 Operations Planning and Control 3(3-0) Prerequisite EN 442, 471, 473 and MATH 350.
Engineering analysis and design in the planning and control of operations in production systems.

EN 488 Industrial Engineering Design Projects (1-5 VAR) Prerequisite/ Corequisite EN 475, 477 and MATH 350.
Application of industrial engineering principles to a design project.

EN 491 Special Topics (1-5 VAR) Prerequisite Junior standing.
Special interest topics not covered in existing engineering courses.

EN 495 Independent Study (1-5 VAR) Prerequisite Junior Standing.
Independent study for engineering courses.

EN 496 Cooperative Education Placement (1-5 VAR)
For juniors and seniors. Work experience under direction of field supervisor and faculty member.

ENGLISH AND FOREIGN LANGUAGE

Faculty: Bassein, Bright, Croxton, Dille, Garcia, Gloe, Griffin, Illick, Milne, Olin, J. Senatore, M. Senatore, Taylor, Vincent, Whitsitt.

English. The program offers courses leading to the degree of bachelor of arts (BA). Offerings in literature, the English language and writing prepare professional and pre-professional majors for many careers. The program's offerings combine with those provided by the program in education for secondary teacher certification in English. (For required education courses see education: Secondary Teacher Certification.)

The English program offers instruction in written communication to meet the educational needs of students and to meet the institutional basic competency requirements of six credit hours in English composition. (Courses marked with an asterisk are designed to meet special student interests and needs; they cannot be used to fulfill the university basic competency requirements.)

An open laboratory with professional staffing supplements course work for both English and foreign language and is available to all students at USC.

MAJOR

An English major requires completion of 36 semester credit hours of courses in English, 14 of which must be those numbered 300 or above. The student must verify choice of courses with an adviser in English.

A typical English schedule:

Freshman Year			**Credits**
ENG	110, 211	Composition I and II	6
ENG	210, 212	American Literature I and II	6
PE	100	PE Orientation	2
RDG	120	College Reading	2
SPCOM	101	Expository Speaking	2
		General Education	14
			32

Sophomore Year			
ENG	221, 222	Western World Literature I and II	6
ENG	231, 232	Literature of England I and II	6
		General Education	16
		Foreign Language or Linguistics	6
			34

Junior Year			**Credits**
ENG	443	Linguistics	3
		Upper Division Electives	9
		General Electives	21
			33

Senior year			**Credits**
ENG	341	History of English Language	3
ENG	493	Seminar	3
ENG		Upper Division Electives	3
		General Electives	23
			32

Secondary Teacher Certification: English Endorsement

			Credits
ENG	340	Advanced Composition	3
ENG	304	Language Awareness	3
ENG	315 or 316	Creative Writing I or II	3
ENG	341	History of English	3
ENG	342	Syntax and Usage	2
ENG	412	Literature for Adolescents	2
ENG	377	Materials and Techniques	3
		Other literature courses	15
			34

In addition, a joint major, Speech-English (see p. 312), and a composite major, MACOM (see p. 221) are offered.

MINORS

To earn a minor in English, a student is required to complete 20 semester hours. Minors such as literature, language, writing, and professional communication are designed to meet the needs of individual students majoring in other disciplines. Many courses are open to students wanting general education credit or wanting to enjoy and to become familiar with well-known literature and to improve their writing. The students must verify choice of courses with an adviser in English.

ENG COURSES

UNDERGRADUATE

ENG 109 Fundamentals for College English 3(3-0)
Development course for students whose placement test scores indicate a need for instruction in basic language skills. ACT Verbal score below 16 or SAT Verbal score below 336. (S/U grades).

ENG 110 Composition I 3(3-0)
Beginning course in expository writing, emphasizing skills of written expression, organization, and presentation, ACT Verbal score of 16 or higher or SAT Verbal score above 336 required.

ENG 115 Technical and Scientific Communication I 3(3-0)
Course for technology students placing emphasis upon vocabulary, grammar, sentence structure, outlining and written expression. Equivalent to ENG 110. ACT Verbal score of 16 or higher or SAT Verbal score above 336 required.

ENG 120 Literature, the Creative Writing Experience 3(3-0)
Use of models from recent poets, short story writers and novelists to stimulate creative and analytical writing skills. Weekly writing assignments prompted by class discussion and analysis of the readings lead to the writing of articulate prose and poetry as a means of self-definition and self-discovery.

ENG 121 The Writer's Response: Evaluating Literature 3(3-0) Prerequisite ENG 120 or permission of instructor.
Explication of literary texts. Use of evidence in forming evaluations and conclusions about novels, poems and short stories. Several short papers and a term paper required.

ENG 130 Introduction to Fiction 1(1-0)
Introduces short stories and novels from varying times and places; for students who have not been exposed to much literature. GEN. ED. IC.

ENG 131 Introduction to Plays 1(1-0)
Literature from varying times and places with emphasis on artistry; especially desirable for the student who has not been exposed to much literature. GEN. ED. IC.

ENG 132 Introduction to Poetry 1(1-0)
Introduces verse and poetry from varying times and places; for students who have not been exposed to much literature. GEN. ED. IC.

ENG 150 Spelling Review 1(1-0) Prerequisite ENG 110 or 115, or permission of instructor.
Five-week module of spelling conventions such as phonetic principles, prefixes, plural forms and compounds.

ENG 152 Punctuation Review 1(1-0) Prerequisite ENG 110 or 115, or permission of instructor.
Five-week module on punctuation convention such as comma use, apostrophes, colon, cash, italics and other signals.

ENG 153 Correct Sentences 1(1-0) Prerequisite ENG 110 or 115, or permission of instructor.
Five-week module of sentence correctness in using clauses and phrases effectively.

ENG 157 Paragraph Development 1(1-0) Prerequisite ENG 110 or 115, or permission of instructor.
Five-week module of methods of paragraph organization and development.

ENG 161 Careers for English majors 1(1-0)
Identifies career options and presents employment opportunities for students majoring in English.

ENG 210 American Literature I 3(3-0)
Literature from colonial times to Civil War, including the growth of naturalism and the rise of the New England school. GEN. ED. IC.

ENG 211 Composition II 3(3-0) Prerequisite ENG 110 or 115.
Sequential course to provide intensive consideration of paragraph and essay development and to introduce procedures and techniques in preparing the referenced paper. It is recommended that this course be completed during the sophomore year.

ENG 212 American Literature II 3(3-0)
Literature from Whitman to the present; emphasis on the influence of westward expansion, growth of regionalism, literature of social protest, and post-World War II writing. GEN. ED. IC.

ENG 216 Technical and Scientific Communication II 3(3-0) Prerequisite ENG 110 or 115.
Writing course specializing in those composition skills which benefit students in technical and scientific areas. It is recommended that this course be completed during the sophomore year.

ENG 221 Western World Literature I 3(3-0)
Historical and thematic sides of major writers from ancient Greece to the Renaissance. GEN. ED. IC.

ENG 222 Western World Literature II 3(3-0)
Continuation of Eng 221; literature from the Renaissance to the present. GEN. ED. IC.

ENG 231 Literature of England I 3(3-0)
Literature and literary history of England from the Anglo-Saxon period to 1750. GEN. ED. IC.

ENG 232 Literature of England II 3(3-0)
Literature and literary history of England from 1750 to the present. GEN. ED. IC.

ENG 254 Science Fiction 3(3-0)
Imaginative literature of fact and fiction; reading, lectures, movies, and television. GEN. ED. IC.

ENG 260 Women in Literature 3(3-0)
Examines female stereotypes deeply carved in literature and developments toward breaking up these stereotypes; opens the study of literature to feminist thinking; treats both female and male authors. GEN. ED. IC.

ENG 291 Special Topics (1-3 VAR)
Variety of subjects including individual authors, themes, or areas of language development.

ENG 296 Cooperative Education Placement (1-4 VAR) Prerequisite Permission of instructor.
Arrangements between employers and faculty members to provide students with an opportunity to earn academic credit and monetary reimbursement for on-the-job training in their field of study.

ENG 304 (SPCOM 304) Language Awareness and Human Behaviors 3(3-0)
Incidents and patterns of language in participants' lives to explore humans-as-semantic-reactors who can deceive, coerce or nurture with their forms of language.

ENG 305 Technical and Scientific Report Writing 3(3-0) Prerequisite ENG 211 or 216, or permission of instructor.
Study an application of technical writing in the student's major. Emphasis on discrete professional formats and styles in writing manuals, proposals, government contracts and reports and journal articles. For upperclassmen or special students in technical and professional fields; open only to students who have completed the basic competencies requirements.

ENG 315 Creative Writing: Poetry 3(3-0) Prerequisite ENG 110, 211 and ENG 340, or permission of instructor.
Introduction to writing poetry; opportunity to write in a self-fulfilling way with some practice on form.

ENG 316 Creative Writing: Fiction 3(3-0) Prerequisite ENG 110, 211 and ENG 340, or permission of instructor.
Introduction to creating character, situation, and overall structure; emphasis on imaginative and real-life portrayal.

ENG 331 Development of the Novel I 3(3-0) Offered alternate years.
Emphasis on social problems and European influences; focus on trends coming to full development in the 20th century. Includes recent works.

ENG 335 Writing for Publication 3(3-0)
Focuses on developing writing techniques and styles applied to periodical publications.

ENG 340 Advanced Composition (1-3 VAR) Prerequisite ENG 211 or permission of instructor.
Advanced forms of non-fiction writing; essays, articles and reports with attention given to needs of students.

ENG 341 History of the English Language 3(3-0)
English language from Anglo-Saxon period to present; emphasis on history of linguistic and structural changes.

ENG 342 English Syntax and Usage 2(2-0)
English usage and language systems; emphasis on forms and functions of language analysis.

ENG 351 Children's Literature 2(2-0)
Options for the person selecting literature for children, including the meaningful, the pleasurable, and that which is keyed to a variety of learners.

ENG 363 17th Century British Literature 3(3-0)
Representative and major authors and movements.

ENG 364 18th Century British Literature 3(3-0)
Dryden, Swift, Defoe, Boswell, Johnson, Pope, Fielding, Blake, Austen, Radcliffe, and/or other major writers.

ENG 365 19th Century British Literature 3(3-0)
Arnold, Tennyson, E. Browning, R. Browning, Eliot, Ruskin, Carlyle, Mill and the poetry of women writers.

ENG 377 Materials and Techniques in Teaching English 3(3-0)
Materials and teaching/learning systems for literature, language, composition.

ENG 381 Drama of Shakespeare 3(3-0)
Shakespeare's dramaturgy and developments of Shakespearean criticism; major histories and tragedies.

ENG 391 Special Topics (1-3 VAR) Prerequisite ENG 110 or 211 and/or permission of instructor.
Explores a variety of subjects including rhetorical techniques, language conventions, or language learning.

ENG 412 Literature for Adolescents 2(2-0)
Literature suitable for adolescents, including classical and contemporary authors, and issues in selection and evaluation.

ENG 441 Chaucer and His Age 3(3-0)
Chaucer and his contemporaries in their cultural setting.

ENG 443 Linguistics 3(3-0)
Theorists, systems, analyses, and studies of language.

ENG 461 Careers for English Majors 1(1-0)
Identify and explore graduate school and employment opportunities.

ENG 481 Literary Criticism 3(3-0)
Great critics and critical movements from Aristotle to Samuel Johnson.

ENG 491 Special Topics (1-3 VAR)
Individual authors, themes, or areas of language development. An extensive term paper in addition to work done for ENG 291.

ENG 493 Seminar 3(3-0)
Examines specific topics, themes and works in American, English or world literature and poetry.

ENG 494 Field Experience (1-5 VAR)
A semester-long internship. Student performs professional duties and English-related skills required by the cooperating commercial business or public service agency.

ENG 495 Independent Study (1-3 VAR)
Directed, intensive study and guidance in studying major literary figures or movements; arranged with the head of the program.

ENG 496 Cooperative Education Placement (1-4 VAR) Prerequisite Permission of instructor.
Arrangements between employers and faculty members to provide students with an opportunity to earn academic credit and monetary reimbursement for on-the-job training in their field of study.

GRADUATE

ENG 511 Seminar: American Literature 2(2-0) Prerequisite Graduate standing.
Selected American classics, emphasizes critical reading skills, basic techniques of evaluation, and practices in writing responses to literature.

ENG 512 Literature for Adolescents 2(2-0) Prerequisite Graduate standing.
Literature suitable for adolescents, including classical and contemporary authors as well as issues in selection and evaluation.

ENG 578 Workshop in the Teaching of Writing 2(2-0) Prerequisite Graduate standing.
Theories of composition, methods, sources and resources, for teachers of writing.

ENG 591 Special Topics (1-3 VAR) Prerequisite Graduate standing.
Individual authors, themes, or areas of language development.

ENG 595 Independent Study 2(2-0) Prerequisite Graduate standing.
Directed, intensive study and guidance for studying major literary figures or movements; arranged with the head of the program.

Foreign Language. The program in foreign languages offers a major in Spanish and minors in French and Italian. Programs leading to the bachelor of arts (BA) degree in a foreign language prepare students for public school teaching and certification, for admission to graduate school, for careers in international organizations, government and businesses. The program offers courses relating to various fields to increase occupational opportunities.

MAJOR

The requirements for the major consist of a minimum of 46 credit hours, 16 hours of which must be upper-division courses, plus one year's college study of a second foreign language.

The combination of 40 hours of a foreign language with another academic program other than foreign language may constitute a possible major.

Note: Advanced placement may reduce the number of credit hours required for majors and minors.

All majors and minors in foreign languages must complete the core curriculum and the additional requirements of the chosen foreign language program.

The core curriculum consists of:

ENG	130, 131, 132	Introduction to Fiction, Plays and Poetry
HIST	101	World Civilization to 1500
	or	
HIST	102	World Civilization since 1500

Beginning Courses: 10 hours of beginning language courses or equivalent.

Intermediate Courses: All second year courses of the language studied.

Spanish

FL	385	Advanced Spanish Grammar
FL	386	Advanced Spanish Composition
plus		Approved Spanish elective courses numbered 300 or above.

Teacher Certification

All students planning to teach foreign languages in public school need:

FL	388	Materials and Techniques in Teaching Foreign Languages.

Specific courses within the major are also required. Consult a program adviser for a list of these requirements.

MINORS

A minor in French, Italian or Spanish requires satisfactory completion of 32 credit hours, including the courses listed below for each language.

French

FL	308, 309	French Civilization I and II
FL	404, 405	French Culture Today I and II

Italian

Twenty-six credit hours of Italian (including first year courses).

Spanish

FL	385	Advanced Spanish Grammar and Conversation
FL	386	Advanced Spanish Composition and Conversation
plus		Approved Spanish elective course numbered 300 or above.

FL COURSES

UNDERGRADUATE

FL 100 Introduction to Comparative Linguistics 3(3-0)
Basic concepts in linguistics. Classification and comparison of languages. GEN. ED. IB.

FL 111 Beginning Spoken French I 5(5-1)
Grammar and pronunciation with aural-oral training to develop skills in understanding and speaking. Written exercises to develop reading and writing skills. Introduction to French culture. GEN. ED. IB.

FL 112 Beginning Spoken French II 5(5-1) Prerequisite FL 111 or equivalent. GEN. ED. IB.

FL 125 Beginning Spoken German I 5(5-1)
Pronunciation and grammar with oral-aural training. Easy reading and conversation. GEN. ED. IB.

FL 126 Beginning Spoken German II 5(5-1) Prerequisite FL 125 or equivalent. GEN. ED. IB.

FL 137 Foreign Language for Travel 1(1-0)
Fundamental vocabulary for basic tourist communication.

FL 146 Introduction to Italian I 3(3-1)
Pronunciation and grammar with oral-aural training. Easy reading and conversation. GEN. ED. IB.

FL 147 Introduction to Italian II 3(3-1) Prerequisite FL 146 or equivalent. GEN. ED. IB.

FL 161 Introduction to Russian I 3(3-1)
Pronunciation, conversation, grammar. Alphabet, easy reading and writing. GEN. ED. IB.

FL 162 Introduction to Russian II 3(3-1) Prerequisite FL 161 or equivalent. GEN. ED. IB.

FL 171 Introduction to a Critical Foreign Language I 3(3-0)
Study of a critical foreign language not offered regularly. Different languages are offered when enrollment permits.

FL 172 Introduction to a Critical Foreign Language II 3(3-0) Prerequisite FL 171 or permission of instructor.
Study of a critical foreign language not offered regularly. Different languages are offered when enrollment permits.

FL 181 Introduction to Spanish: Reading/Culture I 3(3-1)
Introduction to culture and language. Emphasis on correct pronunciation and reading skills. Comparison of grammatical structures and vocabulary of English and Spanish. GEN. ED. IB.

FL 182 Introduction to Spanish: Reading/Culture II 3(3-1) Prerequisite FL 181 or equivalent. GEN. ED. IB.

FL 191 Beginning Spoken Spanish I 5(5-1)
Oral-aural training, also some reading and writing; introduction to Hispanic culture. GEN. ED. IB.

FL 192 Beginning Spoken Spanish II 5(5-1) Prerequisite FL 191 or equivalent.
Students are placed by the department. Practice in oral, aural, reading and writing experiences. GEN. ED. IB.

FL 212 Intermediate French I 5(5-0) Prerequisite FL 112 or equivalent.
Grammar review, idioms and writing of compositions. Selected readings with oral and written exercises.

FL 213 Intermediate French II 5(5-0) Prerequisite FL 212 or equivalent.

FL 222 Intermediate German I 5(5-0) Prerequisite FL 126 or equivalent.
Review and expansion of first-year grammar. Compositions, reading and discussion of contemporary German life.

FL 223 Intermediate German II 5(5-0) Prerequisite FL 222 or equivalent.

FL 246 Intermediate Italian I 5(5-0) Prerequisite FL 147 or equivalent.
Reading and conversation in Italian, review of grammar, study of idioms, theme writing in Italian.

FL 247 Intermediate Italian II 5(5-0) Prerequisite FL 246 or equivalent.

FL 250 Foreign Language Field Trip (2-6 VAR) Prerequisite Permission of instructor.
Communication, lectures by writer, artists, political leaders and specialists. Visits to museums. Attendance at movies, theatre and excursions.

FL 261 Russian Conversation 2(2-0) Prerequisite FL 162 or equivalent.
Intensive practice.

FL 271 Intermediate Russian I 5(5-0) Prerequisite FL 162 or equivalent.
Advanced grammar and vocabulary. Reading of short stories, oral and written reports.

FL 272 Intermediate Russian II 5(5-0) Prerequisite FL 271 or equivalent

FL 281 Readings in Hispanic Civilizations I 3(3-0) Prerequisite one year college Spanish or equivalent.
Reading and discussion based on cultures of Spain. GEN. ED. IB.

FL 282 Readings in Hispanic Civilizations II 3(3-0) Prerequisite one year of college Spanish or equivalent.
Reading and discussion based on Hispanic America. GEN. ED. IB.

FL 286 Intermediate Spanish Conversation I 2(1-2) Prerequisite one year college Spanish or equivalent.
Conversation in small groups divided according to students' fluency.

FL 287 Intermediate Spanish Conversation II 2(1-2) Prerequisite one year college Spanish or equivalent.

FL 288 Spanish Grammar and Composition I 3(3-0) Prerequisite one year college Spanish or equivalent.
Intermediate review of grammar plus practice in writing compositions.

FL 289 Spanish Grammar and Composition II 3(3-0) Prerequisite FL 288.
Further study of grammar, increased emphasis on composition.

FL 291 Special Topics (1-3 VAR)
An aspect of a foreign language not contained in regular courses.

FL 296 Cooperative Education Placement (1-4 VAR) Prerequisite Permission of instructor.
Arrangements between employers and faculty members to provide students with an opportunity to earn academic credit and monetary reimbursement for on-the-job training in their field of study.

FL 301 Advanced French Conversation I 2(2-0) Prerequisite FL 202, 212, 213 or consent of instructor.
Emphasis on acquisition of vocabulary and idiomatic expressions. Advanced oral practice.

FL 302 Advanced French Conversation II 2(2-0) Prerequisite FL 301, or permission of instructor.

FL 303 French Phonetics and Diction 2(2-0) Prerequisite Intermediate French or permission of instructor.
French pronunciation, theory, correction and practice of diction and intonation. Phonetic transcription and remedial exercises. Required for teacher certification.

FL 306 Masterpieces of French Literature 2(2-0) Prerequisite Two years of college French or equivalent.
Close study of outstanding French works with emphasis on literary forms, critical methods and techniques.

FL 308 French Civilization I 3(3-0) Prerequisite Intermediate French or equivalent.
Geography, art, architecture, economics and social problems, correlated with history from the origins to contemporary French. Required for teachers certification.

FL 309 French Civilization II 3(3-0) Prerequisite FL 308 or permission of instructor.
Required for teacher certification.

FL 312 Advanced French Grammar I 3(3-0) Prerequisite Intermediate French or equivalent.
Systematic review of grammar; presentation of the more sophisticated syntactical patterns to enable students to write correctly. Required for teacher certification.

FL 322 Advanced German Grammar I 3(3-0) Prerequisite FL 222 or equivalent.
Linguistic analysis, vocabulary building and composition.

FL 323 Advanced German Grammar II 3(3-0) Prerequisite FL 322 or equivalent.

FL 326 German Civilization I 3(3-0) Prerequisite FL 222 or equivalent.
German geography, culture and history from the beginning to the present.

FL 327 German Civilization II 3(3-0) Prerequisite FL 326 or equivalent.

FL 344 Italian Civilization I 3(3-0) Prerequisite FL 246 or equivalent.
Italian geography, culture and history from the beginning to the present.

FL 345 Italian Civilization II 3(3-0) Prerequisite FL 344 or equivalent.
Italian geography, culture and history from the beginning to the present.

FL 346 Advanced Italian Grammar I 3(3-0) Prerequisite FL 246 or equivalent.
Linguistics analysis, vocabulary building and composition.

FL 347 Advanced Italian Grammar II 3(3-0) Prerequisite FL 346 or equivalent.
Linguistics analysis, vocabulary building and composition.

FL 361 Advanced Russian Conversation 2(2-0) Prerequisite FL 162 or 271 or equivalent.
Intensive practice.

FL 375 Russian Short Story 2(2-0) Prerequisite FL 271 or equivalent.
Selected short stories. Discussion of ideas, or art and of authors. Stress on both oral and written work.

FL 380 Masterpieces of Spanish American Literature 3(3-0) Prerequisite Two years of college Spanish or equivalent.
Major works of Spanish America with emphasis on cultural aspects of 20th century literature.

FL 381 Masterpieces of Spanish Literature 3(3-0) Prerequisite Two years of college Spanish or equivalent.
Major literary works of Spanish literature from its beginnings to 1680. Essential techniques of literary criticism using a cultural approach.

FL 382 19th Century Spanish Literature 3(3-0) Prerequisite Two years college Spanish or equivalent.
Literature of 1808 to 1898. Emergence of romanticism in Spain and its gradual development toward costumbrismo and realism.

FL 383 The Spanish American Short Story 2(2-0) Prerequisite Two years of college Spanish or equivalent.
Major works of Spanish Americans with emphasis on cultural aspects of 20th century literature.

FL 384 Spanish American Novel 2(2-0) Prerequisite Two years of college Spanish or equivalent.
Outstanding Spanish American novels, concentrating on their artistic and social significance.

FL 385 Advanced Spanish Grammar and Conversation 3(3-0) Prerequisite FL 289.
Required of all Spanish majors.

FL 386 Advanced Spanish Composition and Conversation 3(3-0) Prerequisite FL 289.
Required of all Spanish majors.

FL 387 Contemporary Hispanic America 3(3-0) Prerequisite Two years of college Spanish or equivalent.
Sociology, geography, internal and external politics, economics, and the role of the U.S. in Spanish America and Brazil.

FL 388 Materials and Techniques in Teaching Foreign Languages 2(2-0)
Preparation of materials and techniques of teaching foreign languages in grades K-12. Teacher's aid training and applied linguistics.

FL 450 Problems in Teaching Foreign Language 3(3-0) Prerequisite Five semesters' study of FL or equivalent.
Analysis of Spanish phonology, morphology and syntax related to cultural patterns for effective teaching of Spanish.

FL 482 Hispanic Thought 3(3-0) Prerequisite Two years of college Spanish or equivalent.
Essays in Spanish.

FL 484 Mexican Literature 2(2-0) Prerequisite Two years Spanish or equivalent.
Main currents of Mexican literature, primarily of the 20th century.

FL 485 Studies in Latin American Literature 1(1-0) Prerequisite Two years of college Spanish or equivalent.
Reading, analysis and discussion of contemporary Latin American literature. May be repeated for credit as content changes.

FL 486 Cervantes: Don Quixote 2(2-0) Prerequisite Two years of college Spanish except no prerequisite when class is conducted in English.
Primarily the novel Don Quixote; literary and cultural analysis of the characters Don Quixote and Sancho Panza and their environment.

FL 487 Studies in Spanish Literature 1(1-0) Prerequisite Two years of college Spanish or equivalent.
Reading, analysis and discussion of contemporary Spanish literature. May be repeated for credit as content changes.

FL 488 Studies in Spanish Linguistics I 1(1-0) Prerequisite Two years of college Spanish or equivalent.
Sound patterns of Spanish contrasted and compared with English sound patterns.

FL 489 Studies in Spanish Linguistics II 1(1-0) Prerequisite Two years of college Spanish or equivalent.
Review of the most recent research in linguistics.

FL 494 Field Experience (1-7 VAR) Prerequisite Two years of college study in the language of the country or countries visited.
Communication, lectures by writers, artists, political leaders and specialists. Visits to museums, attendance at movies, theatres and excursions.

FL 495 Independent Study (1-3 VAR)
Specific themes which address particular problems of literature or civilization. May be repeated for credit with approval of major adviser. (S/U grades.)

FL 496 Cooperative Education Placement (1-4 VAR) Prerequisite One year of college FL study.
Arrangement between employers and faculty members to provide students with an opportunity to earn academic credit and monetary reimbursement for on-the-job training in their field of study. Two placements must occur in academic semesters and one in a summer session for the equivalent of at least 12 months employment. The student must re-enroll each placement term. Twelve credits maximum allowed toward graduation.

GRADUATE

FL 591 Special Topics (1-3 VAR)
Advanced work in a foreign language, variably dealing with literature, culture, language or pedagogy. Content will have prior approval of the program.

FOREIGN LANGUAGE *(see English/Foreign Language)*

GEOGRAPHY

Geography offers a series of lower and upper division and graduate courses. In addition, courses for general education, cultural enrichment, support for social science majors and background for such vocations as: military and civilian intelligence, commodity and regional analysis, weather forecasting, urban and regional planning, logistics and resource and geoscience

management are offered. There is course work support for the public school teacher and those interested in travel and tour careers. This gives the student a strong background on man's spatial relationships with his physical and natural environment.

Ordinarily, on a demand basis, only one geography course is offered each semester.

GEOG COURSES

UNDERGRADUATE

GEOG 102 Principles of Geography 3(3-0)
Landforms, climate, agriculture, population, manufacturing, resources and urbanization. Emphasis on interrelationships and spatial variations. GEN. ED. IIID.

GEOG 103 World Geography 3(3-0)
Geographic structure of the major physical and cultural realms of the world. Characteristics and interrelationships of regional environmental patterns. GEN. ED. IIID.

GEOG 113 Geography of Food and Hunger 2(2-0)
Analysis of the world's food and consumption patterns; emphasis on increasing production and improving food distribution to meet the requirements of a rapidly growing population. GEN. ED. IIC.

GEOG 201 Economic Geography 3(3-0)
Areal variations on the earth's surface in man's activities related to producing, exchanging and consuming resources. GEN. ED. IIC.

GEOG 210 Cultural Geography 3(3-0)
Description, distinction and significance of cultural differentiation based upon language, religion, political organization, urbanization and population. GEN. ED. IIC.

GEOG 250 Field Trip (1-7 VAR) Prerequisite Permission of instructor.
Intensive experience in historical, physical, economic or cultural geography leading to insights and skills in data gathering and group leadership. Requirements include pretrip preparatory planning and instruction sessions, a prescribed journal and post-trip major written report.

GEOG 281 Geography of the Rocky Mountains 3(3-0)
Analysis of the cultural and physical environment, distribution of population and economic activity in the region. GEN. ED. IIID.

GEOG 431 Historical Geography 2(2-0) Prerequisite HIST 101 or 201.
Reconstruction of past environments and social systems of the great civilizations; policies, life styles, internal development and national aspirations.

GEOG 450 Field Trip (1-7 VAR) Prerequisite Permission of instructor.
Intensive research in physical, economic or cultural geography, domestic or foreign, leading to insights, experience in leadership and skill in group management.

GEOG 461 Political Geography 2(2-0)
Factors affecting the internal and external affairs of state. Physical basis of power, elements of the state, environmental determiners of national policy.

GRADUATE

GEOG 531 Historical Geography 2(2-0) Prerequisite HIST 101 or HIST 201.
Reconstruction of past environments and social systems of the great civilizations; policies, life styles, internal development and national aspirations.

GEOLOGY

The following courses in geology are offered.

GEOL COURSES

GEOL 101 Earth Science 4(3-2)
Classification and origin of rocks and minerals. Weathering. mass-wasting, running water, glaciers and crustal structure, elementary oceanography, planetary geology, geodesy and geomagnetism. GEN. ED. IIID.

GEOL 123 Historical Geology 4(3-2) Prerequisite GEOL 101, 105 or 122.
Genesis of rock formations throughout geologic time, paleogeology of North America, identification and classification of fossils. GEN. ED. IIID.

GEOL 204 Introduction to Soil Science 4(3-2) Prerequisite CHEM 111 or 121.
Formation, properties and management of soils emphasizing soil conditions that affect plant growth.

HISTORY AND CHICANO STUDIES

Faculty: Daxton, Eagan, Sandoval

History. The history minor complements the liberal arts core at USC and helps to prepare undergraduate students for careers and/or graduate studies in teaching, law, government, private enterprise, or other specialized fields. The minor broadens the student's perspective on human development through time and provides a strong background on the relationships of people and nations.

MINOR

Twenty hours of history are required, with three options of core courses: 1) HIST 102, 202, 211, (10 hrs.); or HIST 202, 211, 185 (10 hrs.); or HIST 101, 102, 185 (12 hrs.). The remaining courses are to be chosen by the student with the adviser's approval.

No grade below C is acceptable in the minor. If the student receives a lower grade, the course must be repeated, or the adviser will assign additional hours in consultation with the student.

Chicano Studies. The Chicano Studies minor complements majors and careers in law, sociology, social work, languages, education, government, business and other disciplines. Courses offer unique undergraduate preparation for those who seek entrance to graduate studies in law, humanities or the social sciences.

Students who plan to live and work in the American Southwest or aspire to careers that involve relations in the Western Hemisphere are likely to be well-served by Chicano Studies courses. The interdisciplinary approach emphasizes history and cultural studies, and selected courses provide the student with indepth knowledge of specific aspects of the Chicano community.

MINOR

A minimum of 21 semester hours is required. Twelve semester hours of required courses are supplemented by 9 semester hours of electives chosen by the student with the approval of the Chicano Studies coordinator. The student may select from at least two disciplines and is required to select an elective that addresses the status of Chicanas in American society.

The minor requires CS 101, 201, CS/HIST 440, and CS 493 (21 hrs.). Electives may be selected from designated courses.

HIST COURSES

UNDERGRADUATE

HIST 101 World Civilization to 1500 5(5-0)
Cultural and political growth of civilizations from prehistoric times to 1500; emphasis on the unique contributions of independent cultures to world history. GEN. ED. IIC.

HIST 102 World Civilization since 1500 5(5-0)
Cultural and political interaction of civilizations from 1500 to the present; emphasis on common problems and goals of mankind. GEN. ED. IIC.

HIST 185 Research in History 2(2-0)
Enhances general knowledge of all students by developing skills to evaluate historical data. GEN. ED. IIC.

HIST 201 The United States to 1865 3(3-0)
United States from founding of British North American colonies through the Civil War. GEN. ED. IIC.

HIST 202 The United States since 1865 3(3-0)
United States from Reconstruction era to the mid-twentieth century. GEN. ED IIC.

HIST 211 Colorado History 2(2-0)
History, government and economic factors important to the settlement and development of Colorado. GEN. ED. IIC.

HIST 301 U.S. Emergence: Building a Nation 3(3-0)
The trends, events and people involved in the shaping of the United States and its national character.

HIST 305 Development of a World Power (1850-1920) 3(3-0)
The growth of U.S. power, politically, economically and socio-culturally into a major power.

HIST 306 20th-Century America 3(3-0)
United States from the New Deal to the present.

HIST 311 History of United States Foreign Policy 3(3-0)
United States foreign policy from the founding of the republic to the present.

HIST 313 American West 3(3-0) Prerequisite Permission of instructor.
Role of the individual and the group in the development of the frontier into the twentieth century.

HIST 321 (POLSC 321) American Constitutional Development 3(3-0) Prerequisite HIST 202 or POLSC 101.
Origin, development, broadening of the American Constitution by legal decisions, customs, political parties, executive agreements, legislative interpretation.

HIST 362 History of Russia 3(3-0)
Cultural and political development of Russian and Soviet history from 800 to the present; emphasis on impact of the Bolshevik revolution on history.

HIST 389 History of the Southwest 3(3-0)
History of the Mexican cession to the United States from its Indian and Hispanic origin to the present.

HIST 401 (MILSC 401) The American Military Experience 3(3-0)
Origins and development of the armed forces in American society; six themes: the democratic revolution, the industrial revolution, the managerial revolution, the mechanical revolution, the scientific revolution and the social revolution. Themes developed in chronological sequence.

HIST 415 Historical Biography 2(2-0)
Introduction to biography as a form of history. Students select, study and critique the lives of great men and women.

HIST 440 History of Mexico 3(3-0)
Political, cultural and economic development of Mexico from pre-conquest civilizations to the present.

HIST 446 History of Empires (500-1500) 3(3-0)
Survey of the rise of great empires of the world, including Arab, Gupta, T'ang, Sung and Yuan empires to 1500.

HIST 447 History of the Decline of Empires (1500-Present) 3(3-0)
Survey of the decline of empires and the impact of European conquest in all areas of the world. WWI and WWII are included in this course.

HIST 458 20th-Century Europe 3(3-0)
Events and personalities from World War I to the present.

HIST 491 Special Topics (1-3 VAR) Prerequisite Junior or senior status with adequate preparation and permission of instructor.
Independent study involving seminars and research.

GRADUATE

HIST 501 U.S. Emergence: Building a Nation 3(3-0) Prerequisite Graduate standing.
The trends, events and people involved in the shaping of the United States and its national character.

HIST 513 American West 3(3-0) Prerequisite Graduate standing.
Role of the individual and the group in the development of the frontier into the twentieth century.

HIST 540 History of Mexico 3(3-0) Prerequisite Graduate standing.
Political, cultural and economic development of Mexico from preconquest civilizations to the present.

HIST 558 20th-Century Europe 3(3-0) Prerequisite Graduate standing.
Events and personalities from World War I to the present.

HIST 589 History of the Southwest 3(3-0) Prerequisite Graduate standing.
History of the Mexican cession to the United States from its Indian and Hispanic origin to the present.

CS COURSES

CS 101 Introduction to Chicano Studies 3(3-0)
Overview of the historical, political and socio-cultural experience in the Chicano. GEN. ED. IIE

CS 201 Aztlán: Genesis to Today (3-0)
A survey of Spanish and indigenous origins with concentration on Aztec and Spanish institutions as well as emphasis on the historical, political and socio-cultural experience of the Chicano in the United States. GEN. ED. IIE.

CS 202 Contemporary Chicano Movement 3(3-0)
Examination and analysis of the political, socio-economic and cultural significance of the Chicano movement. GEN. ED. IIE

CS 210 La Chicana 3(3-0)
Social, cultural and historical overview of the Chicana experience and contributions. GEN. ED. IIE

CS 220 Survey of Chicano Literature 3(3-0)
Survey of outstanding contemporary Chicano works. Literature deals with Chicano themes including analysis of folklore and myth. GEN. ED. IJ.

CS 230 Chicano: Social and Psychological Study 3(3-0)
Social and psychological forces faced in the Chicano community. GEN. ED. IIE

CS 291 Special Topics (1-3 VAR)
Topics of interest in Chicano studies, identified by student/faculty interest. Prior work in Chicano studies desirable.

CS 296 Cooperative Education Placement (1-4 VAR) Prerequisite Permission of instructor.
Arrangements between employers and faculty members to provide students with an opportunity to earn academic credit and monetary reimbursement for on-the-job training in their field of study.

CS 303 Chicano Labor History in the United States 3(3-0)
Chicano experience in the American labor market beginning 1848 to the present.

CS 316 Minorities and the Law 3(3-0)
Broad survey of legal systems in relation to the Chicano.

CS 333 The Media and the Minority 3(3-0)
Chicano experience with media. Also discussion on methods and techniques of various media.

CS 335 Health in the Chicano Community 3(3-0)
Health care traditions and current health care systems in the barrio.

CS 440 History of Mexico 3(3-0)
Political, cultural and economic development of Mexico from preconquest civilization to the present.

CS 493 Seminar (1-3 VAR) Prerequisite CS 101.
Various problems within the realm of Chicano studies. In-depth integrated approach.

CS 495 Independent Study (1-3 VAR) Prerequisite CS 101.
Special topics dealing with the Chicano and society.

CS 496 Cooperative Education Placement (1-4 VAR) Prerequisite Permission of instructor.
Arrangements between employers and faculty members to provide students with an opportunity to earn academic credit and monetary reimbursement for on-the-job training in their field of study.

GRADUATE

CS 540 History of Mexico 3(3-0) Prerequisite Graduate standing.
Political, cultural and economic development of Mexico from preconquest civilization to the present.

HONORS PROGRAM

Program adviser: J. Senatore

The university offers an honors program for academically excellent and gifted students. Any student may enroll in the honors courses, but admission to the program is selective. After completing six hours of honors (IDH) courses, a USC student with an overall grade-point average of 3.2 or higher may apply to the Honors Council. Those accepted as candidates for graduation with honors must complete an additional six hours of IS coursework and other requirements.

The honors provides interdisciplinary experiences to help those in technical fields prepare for non-technical responsibilities, and to help those in the social sciences and humanities understand critical choices posed by the technologies. Special opportunities are offered for creative and critical thinking; independent and integrative study, thought and behavior; access to new ideas; and leadership.

Graduation with distinction or with special distinction is based on a student's grade point average. Graduation with honors means the student has been admitted to and successfully completed the honors program.

Further information and application materials required to enter the program are available from adviser.

IDH COURSES

IDH 101 Global Persons 3(3-0)
Problems of contemporary persons in a technological and developing world society. GEN. ED. IIF. (S/U Grades.)

IDH 102 Technologic Persons 3(3-0)
Historical background of technologic societies, their manifestations and problems, their possible and probable futures. GEN. ED. IIF. (S/U Grades.)

IDH 201 Creative Persons 3(3-0)
Why persons create, the creative processes, and known systems for deliberately increasing creativity. GEN. ED. IK. (S/U Grades.)

IDH 202 Inquisitive Persons 3(3-0)
Examines various methodological approaches applied to the human search for knowledge. GEN. ED. IIIG. (S/U Grades.)

IDH 291 Special Topics (1-3 VAR)
Inter-disciplinary courses designed to be topical, issue-centered, exploratory and experimental. (S/U Grades.)

IDH 301 Social Persons 3(3-0) Prerequisite Four hours previous honors work.
Explores the major paradigms for human relations and the consequences of operating from the paradigms. (S/U Grades.)

IDH 302 Possible Persons 3(3-0) Prerequisite Four hours previous honors work.
Reviews the paradigms used to look at self and the world; emphasizes formation of new paradigms; examines trends; introduces future studies as a means for viewing co-creation of a world that works for everyone. (S/U Grades.)

IDH 401 Honors Project 3(3-0) Prerequisite Four hours previous honors work.
Individual, directed, independent study; focuses on applying what has been introduced and learned in Honors courses. (S/U Grades.)

IDH 402 Unifying Persons 3(3-0) Prerequisite Four hours previous honors work.
Reviews, updates, and integrates information and knowledge to identify and clarify contemporary persons' problems, challenges and opportunities in a global society. (S/U Grades.)

IDH 491 Special Topics (1-3 VAR)
Inter-disciplinary courses designed to be topical, issue-centered, exploratory and experimental. (S/U Grades.)

HUMANITIES

The following courses in humanities are offered.

HUM COURSES

HUM 100 Film: Art and Technology 3(3-0)
Study of developing of style and subject matter of a significant art form which reflects the impact of technology on the film industry. GEN. ED. I-I.

HUM 150 Humanistic Traditions: From the Hand of Man 3(3-0)
Study of the historical interrelationship between the fine arts and the humanities and contemporaneous social and technological developments from antiquity to the late classical period. GEN. ED. IK.

HUM 151 Humanities and Technology 3(3-0)
Study of the historical interrelationship between the fine arts and the humanities and contemporaneous social and technological developments from late classical period to the present. GEN. ED. IK.

INDUSTRIAL EDUCATION

Faculty: Bottini, Morgan, Tedrow

The program in industrial education in the School of Education offers the master of arts (MA) and bachelor of science (BS) degrees in industrial education. Both programs are suitable preparation for students who wish to teach industrial subjects in the secondary schools. The master's program is also appropriate preparation for those wishing to teach in a community college or vocational school. In addition, the baccalaureate degree includes an industrial option for students who seek careers in construction, insurance, govern-

ment, manufacturing, public service, retail business, service management, planning, estimating or inspection. Students electing this option are **required** to complete a minor outside the College of Professional Studies and/or to complete two areas of specialization within the college.

Facilities consist of large laboratories which are exceptionally well equipped, in many cases surpassing the recommendations of public schools and industry. The professional staff have both academic and practical industrial experience as well as strong teaching backgrounds, and are well qualified to prepare teachers for today's and tomorrow's schools.

MAJORS

Master of Arts. The master's degree with a major in industrial education is designed to meet the specific needs of each student. The student's background, experience and professional aspirations are important factors in designing each student's course of study. The degree is designed to meet the needs of secondary and post-secondary teachers who are teaching industrial education and of vocational educators. (See section on Graduate Studies Program).

Bachelor of Science — Teaching Option. This program is designed for individuals who wish to qualify to teach industrial education in private and public schools. Certification requirements may be accomplished by completing the industrial education program listed below and the professional education requirements of the state. See certification under the program of **education.**

All students are required to complete a major emphasis in one of the following: automotive, drafting, electronics, metals or woodworking, hours to be approved by the adviser. Students may elect to fulfill the requirements for a combination concentration by completing one-half the requirements in any two of the above areas. Approval by the head of the industrial education program is required.

Industrial Option. This program is designed for individuals who wish to enter industry. Students complete a core of courses selected from automotive, drafting, electronics, metals, and woodworking.

Students must take additional courses and specialize in one of the core areas above, and complete a minor outside of the College of Professional Studies (business recommended), and/or a second area of specialization. The minor and option must have approval of the head of the program.

A typical industrial education schedule is:

Freshman Year			**Credits**
ENG	110, 211	Composition I and II	6
or			
ENG	115, 216	Technical Writing I and II	
IED	101	Beginning Woodworking	3
IED	102	Machine Woodworking and Lab	6
IED	120	Philosophy of Industrial Education	2
MET	104	Welding Technology	3
MET	111, 112	Technical Drafting I and II	6
RDG	120	College Reading	2
SPCOM	101	Expository Speaking	2
		General Education	6
			36

Sophomore Year			**Credits**
APSM	225	Power Mechanics	3
ED	202	Foundation of Education	3
ED	210	Human Growth and Development	3
IED	202	Crafts	3
IED	221	Sheet Metal	2
MET	103	Machining Technology	3
PSYCH	101, 102	General Psychology I and II	6
		General Education	9
		Concentration Elective	6
			38

Junior Year			**Credits**
CET	313	Architectural Drafting I	3
IED	302	Construction and Manufacturing Tech I	3
IED	312	Cabinet and Furniture Making	3
IED	320	Pattern Making and Foundry	3
IED	331	Ornamental Iron and Art Metal	3
IED	345	Career Education	2
IED	377	Materials and Techniques of Teaching Industrial Ed.	3
PSYCH	351	Psychology of the Exceptional Individual	3
		General Education	6
		Elective in major	6
			35

Senior Year			Credits
ED	435	Classroom Management	3
ED	460	Laboratory in Education	3
ED	461	Atypical Students in the Secondary Schools	2
ED	488	Student Teaching	15
IED	455	Curriculum Development and Evaluation in Industrial Ed.	3
IED	457	Organization and Administration in Industrial Ed.	3
RDG	425	Teaching Reading in Content Area	2
			31

NOTE: The industrial option is individually designed with an adviser.

MINOR

A minor in industrial education may be earned by completing the following courses: Auto 2 credits, Drafting 6 credits, Metals 6 credits, Wood 9 credits, Welding 3 credits, IED 377 3 credits, IED 455 3 credits. Total 32 credits.

IED COURSES

UNDERGRADUATE

IED 101 Beginning Woodworking 3(0-6)
Basic skills in designing and layout. Hand and machine woodworking tools and equipment are used.

IED 102 Machine Woodworking 6(2-8) Prerequisite IED 101. Corequisite IED 102L.
Projects while using selected power woodworking machines. Safety in the use and care of machines is emphasized.

IED 103 Advanced Woodworking 6(2-8) Prerequisite IED 102.
Intensive study of the woodworking industry as it relates to materials, production, and construction.

IED 106 Fundamentals of Carpentry I 3(0-6)
Tools and types of building materials which are essential in planning and building houses and furniture are investigated.

IED 120 Philosophy of Industrial Education 2(2-0)
Philosophical foundations of industrial education in a modern society. European and American men who have influenced the development of industrial education in America.

IED 130 Period and Modern Architecture 3(3-0)
Identification of European and American architectural masterpieces. Particular emphasis on functional aspects of structure. Some field experience may be required. GEN. ED. I-I.

IED 135 Period and Modern Furniture Design 3(3-0)
The history and practical application of period and modern styles of furniture. GEN. ED. I-I

IED 202 Crafts 3(0-6)
For students who teach crafts. Selection, composition, design and fabrication of plastics, leather and art metals.

IED 203 Wood Turning 3(0-6)
Basic skills in wood turning and the use of the lathe to supplement bench and machine woodworking.

IED 214 Industrial Finishing 3(0-6) Prerequisite IED 101 or equivalent.
Spraying, brushing and padding finishing techniques, traditional and new finishing materials are used.

IED 221 Sheet Metal 2(0-4)
Sheet metal shear, brake, rolls. Joining of sheet metal by seaming, riveting and soldering.

IED 296 Cooperative Education Placement (1-5 VAR)
For freshmen and sophomores. Work experience under direction of a field supervisor and faculty member.

IED 302 Construction and Manufacturing Technology I 3(0-6)
Products and procedures as used in the construction industry. Students simulate industrial practices in laboratory.

IED 305 World of Construction and Manufacturing II 2(0-4) Prerequisite IED 106.
Cognitive and psychomotor skills and attitudes in manufacturing practice experiments.

IED 310 Cabinet and Furniture Making I 2(2-0) Prerequisite IED 102.
Laboratory course in cabinet making and furniture construction.

IED 311 Cabinet and Furniture Making II 6(2-8) Prerequisite IED 310.
Laboratory experience in advanced cabinet making practices, millwork and furniture making.

IED 312 Cabinet Making and Furniture Making III 3(0-6) Prerequisite IED 311.
Individual projects using innovative construction methods and techniques in industry.

IED 320 Pattern Making and Foundry 3(2-4) Prerequisite IED 301.
Pattern and core design, draft, shrinkage, finish and operation of basic woodworking tools and machinery.

IED 331 Ornamental Iron and Art Metal 3(0-6)
Hot and cold iron worked into ornamental objects using various forming tools. Bending, cutting, riveting, welding, layout and design work.

IED 345 Career Education 2(2-0) Prerequisite ED 202.
Design, implementation and conducting of career education programs. Selection and preparation of teaching materials for career education programs.

IED 346 Problems in Career Education 2(2-0) Prerequisite ED 202.
Students develop instructional materials, design teaching aids, and collect occupational information. Review of facilities, equipment and supply needs of career educational programs.

IED 361 Advanced Cabinet and Furniture Making 3(0-6) Prerequisite IED 300.
Innovative materials, designs, construction techniques, tools, and machines used in school and industry explored and utilized.

IED 377 Materials and Techniques of Teaching Industrial Education in the Secondary Schools 3(3-0) Prerequisite IED 120.
Practical methods and techniques of teaching industrial education classes.

IED 455 Curriculum Development and Evaluation in Industrial Education 3(3-0) Prerequisite IED 120.
Practical methods and techniques of organizing curriculum and evaluative materials.

IED 457 Organization and Administration in Industrial Education 3(3-0) Prerequisite IED 120.
Laboratory organizational patterns, administrative duties of the teacher, and safety regulations.

IED 490 Special Projects (1-5 VAR)
For advanced students. Each student selects, outlines and pursues a project. Instructor approval and supervision provided. May be repeated.

IED 493 Seminar (1-5 VAR)
Individual and small-group activities. Individual experimentation and expertise development in industrial education. May be repeated.

IED 495 Independent Study (1-5 VAR)
For advanced students. Each student selects, outlines and pursues a project. Instructor approval and supervision provided. May be repeated.

IED 496 Cooperative Education Placement (1-5 VAR)
For juniors and seniors. Work experience under direction of field supervisor and faculty member.

GRADUATE

IED 500 Workshop 2(2-2) Prerequisite Graduate standing.
Offered in any of the technical areas for special groups of individuals who have similar interests and needs. Investigates special trends and problems. May be repeated.

IED 511 Circuit Theory 3(0-6) Prerequisite EET 356 or equivalent.
Lumped network element models, Kirchoff's laws, mode equations, mesh equations, superposition, reciprocity, substitution. Thevenin's, Norton's compensation, Millman's maximum power transfer theorem.

IED 520 Trends and Problems in Teaching Technical Drawing 2(0-4) Prerequisite MET 311.
Emphasis on problems of technical obsolescence, new drafting standards and methods of coping with expanding drafting technology.

IED 521 Drafting Techniques 2(0-4) Prerequisite MET 308.
Graphic methods for solving and displaying algebraic equations, coordinate geometry and empirical equations, nomography.

IED 528 Crafts — Leather and Plastics 3(0-6) Prerequisite IED 200 or equivalent.
Career awareness and occupational information an integral part of the course. Basic techniques of working leather and plastics will be taught.

IED 530 Advanced Machine Shop 2(0-4) Prerequisite MET 304.
Various types of numerically controlled machine tools, their operation and capabilities.

IED 533 Manufacturing Processes 2(0-4) Prerequisite IED 530.
Current materials of industry and how they affect industrial society.

IED 535 Crafts — Metals 3(0-6) Prerequisite IED 202 or equivalent.
Career awareness and occupational information on the use of different tools, materials.

IED 540 Power Mechanics 2(1-4) Prerequisite APSM 345 or equivalent.
Principles of operation, nomenclature, and methods of service.

IED 541 Advanced Automotive 2(0-4) Prerequisite IED 345 or equivalent.
Use of test and diagnostic equipment, all phases of auto.

IED 542 Fluid Power 2(0-4) Prerequisite MET 321 or equivalent.
Curriculum, equipment, methods and application of fluid power courses in secondary and post-secondary schools.

IED 545 Career Education 2(2-0) Prerequisite IED 345 or equivalent.
Design, implementation and conducting career education programs. Selecting and preparing teaching materials for career education programs.

IED 546 Problems in Career Education 3(3-0) Prerequisite IED 345 or 545.
Students develop instructional materials, design teaching aids and collect occupational information. Review of facilities, equipment and supply needs of career education programs.

IED 547 Career and Occupational Education 2(2-0) Prerequisite Graduate standing.
Techniques and procedures in analyzing occupations. Problems, methods and procedures involved in planning, organizing and disseminating occupational information to students.

IED 555 Trends and Problems in Industrial Education 3(3-0) Prerequisite Graduate standing.
Practical methods and techniques of organizing curriculum materials and controlling a typical industrial education program. May be repeated.

IED 557 Organization and Administration in Industrial Education 3(3-0) Prerequisite IED 457.
Shop organizational patterns, administrative duties of the teacher, and new trends in selection and arrangement of equipment and facilities.

IED 562 Introductory Physics of Metals 2(0-4) Prerequisite MLET 225.
Solid, electron theory of metals, electrical and thermal conductivity theory of magnetism, specific heat diffusion and reaction rates.

IED 570 Special Problems in Woodworking 3(0-6) Prerequisite IED 361.
Experimental work with new tools, equipment, materials and processes for improved program development and teaching techniques in woodworking.

IED 571 Materials and Processes in Teaching Woodworking 3(0-6) Prerequisite IED 561.
Intensive study in selected areas of the woodworking industry as it relates to materials, processes and construction. Mass production and experimentation.

IED 575 Crafts — Woods 3(0-6) Prerequisite Graduate standing.
Course designed for the teacher to experience use of different tools, materials and supplies available for use.

IED 577 Materials and Techniques of Teaching Industrial Education in the Secondary Schools 3(3-0) Prerequisite IED 377.
Practical method and techniques in teaching industrial education classes.

IED 580 Problems in Industrial Education 3(3-0) Prerequisite Graduate standing and permission of instructor.
In-depth study by one or more students who wish to enrich their teaching ability in a specific area of industrial education. May be repeated.

IED 581 Curriculum Development in Industrial Education 3(3-0) Prerequisite IED 455 or equivalent.
Derivation of objectives, selection and arrangements of instruction units and materials for industrial education classes.

IED 582 History of Industrial Education 3(3-0) Prerequisite Graduate standing.
Leaders, agencies and movements that have contributed to the social and philosophical influences in industrial education.

IED 583 Visual Aids in Industrial Education 3(3-0) Prerequisite Graduate standing.
Instructional sheets, charts, graphs and other instructional devices planned and developed by students.

IED 584 Philosophy of Industrial Education and Vocational Education 3(3-0) Prerequisite Graduate standing.
Overview of the nature and purpose of the practical arts and vocational education, their relationships, differences and the place each should have in public schools.

IED 585 Organization and Administration of Industrial Education 3(3-0) Prerequisite IED 455 and 457.
Organization and administration of industrial education programs as they relate to federal, state and local school administration.

IED 588 Experimentation in Industrial Education 2(2-2) Prerequisite Graduate standing.
Investigation of the latest materials, tools and techniques used in industry. May be repeated.

IED 590 Special Projects (1-5 VAR)
For advanced students. Each selects, outlines and pursues a project. Instructor approval and supervision provided. May be repeated.

IED 591 Special Topics (1-5) VAR
Individual and small-group activities in individual experimentation and expertise development in industrial education. May be repeated.

IED 592 Research (1-5 VAR)
Original research under professor's supervision. May be repeated.

IED 593 Seminar (1-5 VAR)
Individual and small-group activities. Current topics, issues, resources, and practices. May be repeated.

IED 595 Independent Study (1-5 VAR)
For advanced students. Each selects, outlines and pursues a project. Instructor approval and supervision provided. May be repeated.

LIFE SCIENCES

Faculty: Dorsch, Farris, Herrmann, Janes, Linam, Murray, Osborn, Seilheimer, Thomas

The program in life sciences offers degrees leading to the bachelor of science (BS) in biology and medical technology. In addition to degree programs, the program serves students by providing fundamental science courses to meet major or program requirements and general education requirements.

MAJORS

The biology major is sufficiently flexible for students to prepare for a wide variety of professional careers, and carefully supervised career planning is a fundamental concern of the program.

The student majoring in biology may plan to enter the world of work or to continue study in graduate school as a professional biologist, or may elect to follow any of the following **pre-professional programs:** pre-chiropractic, pre-forestry, pre-optometry, pre-physical therapy, pre-occupational therapy, pre-physician assistant, pre-podiatric medicine, pre-veterinary medicine, pre-dentistry, pre-medicine or pre-osteopathic medicine. Each of the pre-professional programs has an adviser who can provide detailed and current information about the undergraduate work which the student should pursue to provide the foundation necessary for later entry into the professional school. The student should contact the specialized adviser as early as possible.

The pre-professional program advisers are:

Program	Adviser	Phone
Pre-chiropractic medicine	Dr. Hal Murray	549-2749
Pre-forestry and pre-wildlife management	Dr. Neal O. Osborn	549-2270
Pre-optometric	Dr. Hal Murray	549-2749
Pre-pharmacy	Dr. Jerald L. Connelly	549-2551
Pre-physical therapy	Dr. Hal Murray	549-2749
Pre-occupational therapy	Dr. Hal Murray	549-2749

Pre-podiatric medicine	Dr. John A. Dorsch	549-2420
Pre-veterinary medicine	Dr. Larry Thomas	549-2814
Pre-dental	Dr. Gerald C. Farris	549-2850
Pre-medicine and pre-osteopathic medicine	Dr. John A. Dorsch	549-2420
Pre-physician's assistant	Dr. Hal Murray	549-2749

Frequently, a pre-professional program involves a combination of majors or a major and minor. For example, many pre-medical students choose a double major in biology and chemistry.

The program has an agreement with the College of Forestry and of Natural Resources at Colorado State University in pre-forestry and pre-wildlife management. A student who completes successfully the two-year program at USC with a 2.50 grade point average is guaranteed transfer to the baccalaureate program at CSU. Grades of D and F do not transfer.

The program also offers a bachelor of science (BS) degree in **medical technology,** with two options. The student may complete three years of work at the university and a year in an affiliated hospital, or may complete the baccalaureate degree in biology and then the required year in the hospital. Students may apply to the hospital laboratory school in the year prior to the intended internship. Four affiliated hospitals are available, two in Pueblo and two in Colorado Springs. Either option of the program qualifies the graduate for the certification examination of the American Association of Clinical Pathologists. Dr. Donald W. Janes, phone 549-2813, is the program director.

The specialization in **environmental health** is designed to meet the curriculum recommended by the Accreditation Council of the National Environmental Health Association (formerly the National Association of Sanitarians). Dr. Jay Linam, phone 549-2509, is the program adviser.

The emphasis in biotechnology is available to students interested in professions and/or graduate schools which require specialization in molecular biology, industrial microbiology or genetics. Dr. Donald Janes, phone 549-2813, is the program adviser.

Core courses required in all programs are:

			Credits
BIOL	171	Career Planning I	1
BIOL	191/191L	Aspects of Biology and Lab	4
BIOL	192	Intro to Computing in Life Science	1
BIOL	201/201L	Botany and Lab	5
BIOL	202/202L	Zoology and Lab	5
BIOL	493	Seminar	1
BIOL	301/301L	Microbiology and Lab	5
BIOL	471	Career Planning IV	1
BIOL	341/341L	Animal Physiology and Lab	4
or		or	
BIOL	412/412L	Cellular Biology and Lab	4
			31

BIOL 171 should be completed in the fall semester of the first year as a biology major. BIOL 191 and 191L are prerequisites to BIOL 201, 201L, 202 and 202L. BIOL 471 should be completed in the fall semester of the junior or senior year.

The program is housed in a modern building with research-grade equipment available for student use. Specialized facilities include a water research laboratory, a radiation biology complex, a controlled-environment greenhouse, regional museum and local herbarium.

A major in **biology** requires a minimum of 47 semester hours of credit in adviser-approved biology courses and a minimum of 35 semester hours of credit in adviser-approved courses in chemistry, physics, mathematics or geology. Each student should obtain a written description of specific degree requirements from the appropriate adviser. It is recommended that all students who might attend a graduate school take one year of a foreign language and plan to take the Graduate Record Examination during the senior year.

A suggested four-year program for the bachelor of science degree in biology follows. Students should be aware that the pre-professional programs and specialized tracks such as medical technology or environmental health will require adviser-approved modifications of the program given below, and that planned combinations of majors or major and minor may be suggested by the adviser or investigated by the student.

A suggested four-year program for bachelor of science degree in biology is:

Freshman Year			**Credits**
BIOL	171	Career Planning I	1
BIOL	191/191L	Aspects of Biology and Lab	4
BIOL	201/201L	Botany and Lab	5
BIOL	192	Intro to Computing in Life Sciences	1
CHEM	121/121L	General Chemistry I and Lab	5
CHEM	122/122L	General Chemistry II and Lab	5
ENG	110 or 115	Composition I or Technical and Scientific Comm I	3
ENG	211 or 216	Composition II or Technical and Scientific Comm II	3
SPCOM	101	Expository Speaking	2
Group	I and II	General Education	3
			32

Sophomore Year			**Credits**
BIOL	202/202L	Zoology and Lab	5
CHEM	301/301L	Org. Chem. I and Lab	5
CHEM	302/302L	Org. Chem. II and Lab	5
MATH	221	Applied Calculus	5
PHYS	201 and 202	Prin. of Physics I and II	8
or		or	
PHYS	121	Physics for Health Sciences	4
Group	I and II	General Education	6
			30 or 34

Junior Year			**Credits**
BIOL	301/301L	Microbiology and Lab	5
Group	I and II	General Education	14
Upper Division adviser-approved electives in biology			12
University-wide electives (either lower or upper division)			6
			37

Senior Year			**Credits**
BIOL	341/341L	Animal Physiology and Lab	4
or		or	
BIOL	412/412L	Cellular Biology and Lab	4
BIOL	493	Seminar	1
BIOL	471	Career Planning IV	1
Upper Division adviser-approved electives in biology			8
Additional upper-division or lower-division university-wide electives (minimum)			17
			31

Medical Technology. Students who wish to work in hospital or clinical laboratories may prepare for a career in medical technology by either of two methods: 1) Earn a BS degree in medical technology by attending USC for three years and then serve a one-year internship at one of three affiliated hospital laboratory schools (3 + 1 program), 2) Earn a BS in biology (or chemistry) at USC and then serve a one-year internship at any accredited hospital laboratory school in the United States whether affiliated with USC or not (4 + 1 program). Both programs qualify the student to apply for an examination to be certified by the American Association of Clinical Pathologists.

Students may plan for the 3 + 1 program and apply in their junior year for admission to internship. If not accepted, they may continue with the fourth year of college and complete the 4 + 1 program. The 4 + 1 program provides students with an excellent background for medical technology and many other options in the health-related fields, professional schools, research, and graduate school entrance.

In the year prior to entry into the internship, students in either program must apply to the hospital laboratory school for admission.

The 3 + 1 Program: Students who wish a BS in medical technology are subject to terms of the affiliation agreement made between USC and the three affiliate hospitals, Parkview Hospital in Pueblo, and Memorial and Penrose Hospitals in Colorado Springs. The student must complete at USC a minimum of 90 semester hours of work including a) university requirements and general education, b) 16 semesters hours of adviser-approved biological science including microbiology and immunology, c) 16 semester hours of adviser-approved chemistry including organic or biochemistry and d) one college-level course in mathematics. At the hospital lab school the student may earn 42 semester hours in the MEDT courses listed below. This curriculum is approved by NAACLS, the National Accrediting Agency for Clinical Laboratory Sciences.

Enrollment is limited by the size of the classes in the three affiliate hospitals; completion of the 42 semester hours of hospital-based work is required for graduation with a degree and eligibility to take the ASCP certifying exam.

Students must earn a C or better grade in the required university courses and a grade point average of 2.00 or higher. In the hospital-based course work a higher average is required, depending on the policies of the hospital lab school. Credit and grades earned in the hospital-based courses are recorded on the university transcript and the degree is awarded by the university. Regular tuition and fees will be charged by USC during the three university-based years of instruction, and during the internship at the hospital for the 3 + 1 program.

MEDT COURSES

(Hospital-based)

MEDT 471 Clinical Chemistry (12-14 VAR) Prerequisite Acceptance to hospital clinical program.
Theory and performance of qualitative and quantitative chemical analysis of blood and body fluids by instrumental and automated methods such as colorimetric, spectrophotometric, gasometric, fluorimetric, electrophoretic and radiommunoassay. Physiological and biochemical rationale for doing various tests.

MEDT 472 Urinalysis (2-3 VAR) Prerequisite Acceptance to hospital clinical program.
Theory and performance of chemical tests and microscopic studies for kind and quantity of metabolic and cellular constituents of urine and fluids other than blood.

MEDT 485 Clinical Microbiology (8-13 VAR) Prerequisite Acceptance to hospital clinical program.
Theory and practical experience in isolation and identification of clinically important bacteria, molds and yeasts. Preparation and use of media and staining solutions. Techniques for culturing body fluids and excretions. Techniques for microscopic, biochemical, serological and fluorescent identification. Determining bacterial sensitivity to drugs.

MEDT 486 Blood Banking (4-5 VAR) Prerequisite Acceptance to hospital clinical program.
Theory, record-keeping and performance of tests and procedures prescribed by the American Association of Blood Banks and Federal Drug Administration relating to preservation and selection of properly matched blood for transfusion and other blood components.

MEDT 487 Hematology (6-9 VAR) Prerequisite Acceptance to hospital clinical program.
Theory and performance of blood and bone marrow studies. Manual and electronic automated tests to determine number, kind and functional qualities of blood cells.

MEDT 488 Serology (1-5 VAR) Prerequisite Acceptance to hospital clinical program.
Theory of immunology and clinical performance of tests - complement fixation, precipitation, flocculation, and other procedures on serum and spinal fluid.

MEDT 489 Clinical Lab Management and Education (1-3 VAR) Prerequisite Acceptance to hospital clinical program.
Principles of management of a clinical laboratory and techniques in teaching clinical laboratory procedures to lab personnel.

The 4 + 1 Program: Students who earn a BS in biology are able to qualify for application to any hospital-based laboratory program in medical technology in the United States and have career options leading them into

many other fields in addition to medical technology. The 42-hour hospital-based credit is not earned in this program although students take the same courses during their internship.

The program director is the adviser for both the 3 + 1 and the 4 + 1 programs.

Environmental health. The environmental health program is designed to meet the curriculum specifications of the National Environmental Health Association's Accreditation Council (formerly the National Association of Sanitarians). Upon satisfactory completion of this curriculum a BS degree in biology is awarded.

MINORS

The program recognizes two types of minors: 1) The first minor is recommended for students who might at some time intend to continue their academic education in a biologically-related professional field or graduate program; 2) the second minor is designed for students who wish to establish a minor program and find that biology is helpfully related to their personal goals.

1) Professional biology minor, 23 semester hours: 14 semester hours of specific lower-division courses plus 9 or more additional hours of electives, 8 of which must be upper-division. Required courses are:

			Credits
BIOL	191/191L	Aspects of Biology and Lab	4
BIOL	201/201L	Botany and Lab	5
BIOL	202/202L	Zoology and Lab	5
			14

2) General biological minor, 23 hours of BIOL-prefix courses approved by the minor adviser are required. Eight of these semester hours must be upper-division. The courses selected should have some relationship to the major or intended goals of the student (physical education, psychology, business, mass communications, art, biological hobbies, outdoor interest).

BIOL COURSES

UNDERGRADUATE

BIOL 101 Outdoor Biology 4(4-0)
Principles of biology through outdoor experiences. Mountain survival, native and edible plants, observing and stalking wildlife, environmental awareness and ecology. GEN. ED. IIIA.

BIOL 112 Nutrition 3(3-0)
Analysis of personal dietary habits and behavior in relation to basic human nutritional needs and food composition. GEN. ED. IIIA.

BIOL 121 Environmental Conservation 4(4-0)
Basic principles of ecology and current issues relating to the use of natural resources. GEN. ED. IIIA.

BIOL 132 Human Heredity and Birth Defects 2(2-0)
A non-major course emphasizing the laws and principles of inheritance as they relate to man and the causes of human congenital defects. GEN. ED. IIIA.

BIOL 141 Human Sexuality I 2(2-0)
Sexual behaviors, physiology, dysfunctions, roles, alternative relationships, parenting, legal aspects, contraception and current research in sexuality. GEN. ED. IIIA.

BIOL 162 Personal Health 3(3-0)
In-depth look at the human body from the standpoint of positive health, wellness and fitness. GEN. ED. IIIA.

BIOL 171 Career Planning I 1(1-0)
Identifying career options and creating a personalized educational program.

BIOL 191 Aspects of Biology 3(3-0) Corequisite BIOL 191L.
Introduction to metric measurement, microscope, cell form, function, reproduction, biologically important molecules, bioenergetics, classifying and keying. GEN. ED. IIIA.

BIOL 191L Aspects of Biology Lab 1(0-2) Corequisite BIOL 191.
A laboratory course to accompany BIOL 191. GEN. ED. IIIA.

BIOL 192 Introduction to Computing in the Life Sciences 1(1-0)
Orientation to the software and hardware available in the department of life sciences. This course serves as a basis for using the computer as a tool in biology laboratories. Required of freshman students majoring in biology, agriculture and preprofessional areas.

BIOL 201 Botany 3(3-0) Prerequisite BIOL 191 or permission of instructor. Corequisite BIOL 201L.
Anatomy, physiology, genetics and ecology of the angiosperms. Includes a brief survey of the structures and forms of major plant groups. GEN. ED. IIIA.

BIOL 201L Botany Lab 2(0-4) Corequisite BIOL 201.
A laboratory course to accompany BIOL 201. GEN. ED. IIIA.

BIOL 202 Zoology 3(3-0) Prerequisite BIOL 191 or permission of instructor. Corequisite BIOL 202L.
Anatomy, physiology, ecology and phylogeny of major and minor invertebrate and vertebrate taxa. GEN. ED. IIIA.

BIOL 202L Zoology Lab 2(0-4) Corequisite BIOL 202.
A laboratory course to accompany BIOL 202. GEN. ED. IIIA.

BIOL 206 Introduction to Microbiology 3(3-0) Corequisite BIOL 206L.
For students of nursing and allied health. Applied aspects of medical microbiology.

BIOL 206L Introduction to Microbiology Lab 1(0-3) Corequisite BIOL 206.
A laboratory course to accompany BIOL 206.

BIOL 221 Principles of Human Anatomy and Physiology 3(3-0) Corequisite BIOL 221L.
Fundamentals of anatomical structures and physiological function. GEN. ED. IIIA.

BIOL 221L Principles of Human Anatomy and Physiology Lab 1(0-2) Corequisite BIOL 221.
A laboratory course to accompany BIOL 221. GEN. ED. IIIA.

BIOL 223 Human Physiology and Anatomy I 3(3-0) Corequisite BIOL 223L.
In-depth study of human physiology and anatomy designed for students who require or desire a more thorough understanding of the functional and structural aspect of the human body. Not for biology majors. Topics include physiologically important molecules, and compounds, the cell, tissues, integument, skeleton, muscle, nervous system, special senses and endocrines. GEN. ED. IIIA.

BIOL 223L Human Physiology and Anatomy Lab I 1(0-2) Corequisite BIOL 223.
A laboratory course to accompany BIOL 223. GEN. ED. IIIA.

BIOL 224 Human Physiology and Anatomy II 3(3-0) Corequisite BIOL 224L.
A continuation of BIOL 223. Topics include the vascular system, respiration, digestion, metabolism, excretion, fluid balance and reproduction. GEN. ED. IIIA.

BIOL 224L Human Physiology and Anatomy Lab II 1(0-2) Corequisite BIOL 224.
A laboratory course to accompany BIOL 224. GEN. ED. IIIA.

BIOL 262 (AG 115) Basic Horticulture 3(3-0) Prerequisite BIOL 201 or permission of the instructor. Corequisite BIOL 262L.
Principles of horticulture science applied to the propagation and culture of plants and crops. Landscape design and improvement of plants. GEN. ED. IIIA.

BIOL 262L (AG 115L) Basic Horticulture Lab 1(0-2) Corequisite BIOL 262.
A laboratory course to accompany BIOL 262. GEN. ED. IIIA.

BIOL 280 Introduction to Biotechnology 3(3-0)
Introduction and current developments in the use of biological organisms for research and for commercial and industrial processes.

BIOL 291 Topics (1-6 VAR)
Courses designed to study advances in biology or areas of particular interest to special groups of professional biologists and other related professions. Courses must be approved by the department.

BIOL 294 Field Experience (1-4 VAR)
Volunteer work experience under program director, department coordinator and faculty supervisor through the cooperative education program. Not open to students who have taken BIOL 296.

BIOL 301 General Microbiology 3(3-0) Prerequisite BIOL 191 and CHEM 301, 301L or permission of the instructor. Corequisite BIOL 301L.
Introduction to the bacteria and viruses including microbial genetics and physiology.

BIOL 301L General Microbiology Lab 2(0-4) Corequisite BIOL 301.
Laboratory techniques of observation, handling, cultivation, identification and control of microorganisms.

BIOL 302 Medical Microbiology and Immunology 3(3-0) Prerequisite BIOL 301 or permission of the instructor. Corequisite BIOL 302L.
Introduction to immunology and survey of pathogenic bacteria, viruses and fungi.

BIOL 302L Medical Microbiology and Immunology Lab 2(0-4) Corequisite BIOL 302.
Laboratory techniques of immunology and medical microbiology.

BIOL 320 Emergency Medical Technician (EMT) Training 6(6-0) Prerequisite Standard or advanced first aid or equivalent, or permission of instructor.
Emergency care and transportation of the sick and injured. Field work in hospital emergency rooms and ambulance. State certification.

BIOL 321 Comparative Vertebrate Anatomy 3(3-0) Prerequisite BIOL 202 or permission of instructor. Corequisite BIOL 321L.
Comparative study of developmental anatomy of vertebrate animals.

BIOL 321L Comparative Vertebrate Anatomy, Dissection 2(0-4) Corequisite BIOL 321.
Comparative dissection of representative vertebrate animals.

BIOL 324 (SPCOM 324) Anatomy of the Head, Neck and Chest 2(2-0) Prerequisite BIOL 221 or BIOL 321 or permission of instructor. Corequisite BIOL 324L.
Anatomical structures of the head, neck and chest with analysis of development and function.

BIOL 324L (SPCOM 324L) Anatomy of the Head, Neck and Chest, Dissection 1(0-2) Corequisite BIOL 324.
Dissection and examination of the anatomical structure of the head, neck and chest.

BIOL 326 Plant Morphology 2(2-0) Prerequisite BIOL 201 or permission of instructor. Corequisite BIOL 326L.
Forms, basic structures, relationships, life histories and evolutionary trends of representatives of the major autotropic plant groups.

BIOL 326L Plant Morphology Lab 1(0-2) Corequisite BIOL 326.
A laboratory course to accompany BIOL 326.

BIOL 332 Embryology 2(2-0) Prerequisite BIOL 202 or permission of instructor. Corequisite 332L.
Development of representative vertebrate and invertebrate animals with particular emphasis on the early embryology of *Branchiostoma*, frog, chick and pig.

BIOL 332L Embryology Lab 2(0-4) Corequisite BIOL 332.
A laboratory course to accompany BIOL 332.

BIOL 341 Vertebrate Physiology 3(3-0) Prerequisite BIOL 202, CHEM 205 and 205L or 301 and 301L. Corequisite BIOL 341L.
Basic general physiology and the functions of animal and human body systems.

BIOL 341L Vertebrate Physiology Lab 1(0-2) Corequisite BIOL 341.
A laboratory course to accompany BIOL 341.

BIOL 342 Pathobiology 3(3-0) Prerequisite BIOL 341 or permission of instructor. Corequisite 342L.
Physiological dysfunction and disease mechanisms in humans and other mammals.

BIOL 344 Human Sexuality II 2(2-0) Prequisite Junior standing or permission of instructor.
Biological and psychological aspects of human sexual behavior.

BIOL 351 Genetics 3(3-0) Prerequisite BIOL 191, 201, 202 or permission of instructor. Corequisite BIOL 351L.
Mendelian genetics, cell cycles, molecular genetics, medical genetics and population genetics, with laboratory emphasis on *Drosophila* and man.

BIOL 351L Genetics Lab 1(0-2) Corequisite BIOL 351.
A laboratory course to accompany BIOL 351.

BIOL 352 Evolution and Futuristics 2(2-0)
Historical view of the theory of evolution with emphasis upon man's place in nature and the forces which have produced evolution. Issues involving man's management of his future.

BIOL 353 Ecology 4(4-0) Prerequisite BIOL 201 and 202 or permission of instructor. Corequisite BIOL 392L.
Interaction and interdependencies between organisms and their environment.

BIOL 353L Ecology Field Studies 1(0-2) Corequisite BIOL 392.
Independent and group ecological research in aquatic and terrestrial ecosystems.

BIOL 354 Urban Ecology 3(3-0)
Urban ecology and problems arising from urban implosion. The critical state of energy resources, recent changes in legislation concerning the environment and case studies on national, regional and local urban areas.

BIOL 360 (AG 360) Applications of Computers in the Laboratory 3(2-2) Prerequisite CST 101.
Applications of computing to medicine, nursing, agriculture, biological sciences, with emphasis placed upon the use of microcomputers, peripheral devices, data banks and communications available to the life scientist.

BIOL 377 Methods and Materials in Teaching Biology 2(2-0)
Current trends in teaching biology; BSCS biology is given special emphasis. Study of resource materials, techniques of experimentation and demonstrations.

BIOL 378 Laboratory in Teaching Biology 1(0-2)
Teaching experience under supervision of instructor.

BIOL 381 (AG 381) Entomology 2(2-0) Prerequisite BIOL 191 or permission of instructor. Corequisite BIOL 381L.
Structure, classification, ecology and control of insects.

BIOL 381L (AG 381L) Entomology Lab 1(0-2) Prerequisite BIOL 191. Corequisite BIOL 381.
Collection and identification of local insects.

BIOL 382 Parasitology 2(2-0) Prerequisite BIOL 191 or permission of instructor. Corequisite BIOL 382L.
Taxonomy, morphology, life cycles, host relationships of animal parasites.

BIOL 382L Parasitology Lab 1(0-2) Prerequisite BIOL 191. Corequisite BIOL 382.
Identification of animal parasites.

BIOL 383 Mammalogy 1(1-0) Corequisite BIOL 383L.
Evolution, classification and biology of mammals; practice in identifying and preparing specimens. Offered alternate years.

BIOL 383L Mammalogy Lab 1(0-2) Corequisite BIOL 383.
Offered alternate years.

BIOL 384 Ornithology 1(1-0) Corequisite BIOL 384L.
Classification, life history, laboratory and field identification of birds. Offered alternate years.

BIOL 384L Ornithology Lab 1(0-2) Corequisite BIOL 384.
Offered alternate years.

BIOL 385 (AG 385) Plant Taxonomy 2(2-0) Prerequisite BIOL 201 or permission of instructor. Corequisite BIOL 385L.
Identification of the common families of conifers and flowering plants; study of their systematic relationships.

BIOL 385L (AG 385L) Plant Taxonomy Lab 2(0-4) Corequisite BIOL 385.
Collection and classification of local flora.

BIOL 394 Field Experience (1-4 VAR)
Volunteer work experience under program director, program coordinator and faculty supervisor through the cooperative education program. Not open to students who have taken BIOL 396.

BIOL 412 Cellular Biology 3(3-0) Prerequisite BIOL 201, 202, CHEM 122, 122L, 205, 205L or permission of instructor. Corequisite BIOL 412L.
Structural and functional organization of the cell, life cycles of cells, intracellular digestion, protein synthesis and cell death.

BIOL 412L Cellular Biology Lab 1(0-2) Corequisite BIOL 412.
A laboratory course to accompany BIOL 412.

BIOL 441 Freshwater Invertebrate Zoology 2(2-0) Prerequisite BIOL 191, 202, or permission of instructor. Corequisite BIOL 441L.
Classification, phylogeny, systematics, morphology, physiology, and natural history of freshwater invertebrates inclusive of insects. Offered alternate years.

BIOL 441L Freshwater Invertebrate Zoology Lab 2(0-4) Corequisite BIOL 441.
Identification of freshwater invertebrates. Offered alternate years.

BIOL 443 Limnology 2(2-0) Prerequisite BIOL 191, 201, 202 or permission of instructor. Corequisite BIOL 443L, BIOL 392 and 392L are recommended.
Biology, chemistry and physics of lakes and rivers. Offered alternate years.

BIOL 443L Limnology Lab 2(0-4) Corequisite BIOL 443.
Limnological methods. Offered alternate years.

BIOL 450 Biotechnology 3(3-0) Prerequisite BIOL 301, 302 and CHEM 301.
Theoretical and applied aspects of current methodologies in industrial microbiology, genetics, research and pharmaceutical production.

BIOL 471 Career Planning IV 1(1-0)
Creating and securing graduate school and employment opportunities.

BIOL 472 Radiation Biology 3(3-0) Prerequisite BIOL 201, 202, CHEM 122, 122L, or permission of instructor. Corequisite BIOL 472L.
Nature, production and use of radioisotopes, radiological safety, effects of ionizing radiation at the subcellular, cellular and organism level, environmental radiation and radionuclide cycling.

BIOL 472L Radiation Biology Lab 1(0-2) Corequisite BIOL 472.
Laboratory course in radiation biology methods.

BIOL 491 Special Topics (1-6 VAR)
Courses designed to study advances in biology or areas of particular interest to special groups of professional biologists and other related professions. Courses must be approved by the department.

BIOL 493 Seminar 1(1-0) Prerequisite Permission of program chairman.
Seminar for majors and minors concerning unique, current or unusual topics in biology. Speakers may include guests, faculty, or students. Required of majors. (S/U grades)

BIOL 494 Field Experience (1-4 VAR)
Volunteer work experience under program director, program coordinator and faculty supervisor through the cooperative education program. Not open to students who have taken BIOL 496.

BIOL 495 Independent Study (1-6 VAR) Prerequisite Junior standing or permission of instructor.
Designed for academically strong juniors and seniors and graduates majoring in biology. Students should choose a supervising professor and obtain permission from the department.

BIOL 498 Internship 15(0-30)
1. Measurement and control of air pollution
2. Noise and the environment
3. Industrial hygiene and accident prevention
4. Milk and food sanitation
5. Water and waste water sanitation
6. Housing and institutional environmental health
7. Solid waste management

GRADUATE

BIOL 591 Special Topics (1-6 VAR)
Courses designed to study advances in biology or areas of particular interest to special groups of professional biologists and other related professions. Courses must be approved by the department.

BIOL 595 Independent Study (1-6 VAR)
Designed for academically strong juniors and seniors and graduates majoring in biology. Students should choose a supervising professor and obtain permission from the department.

AGRICULTURE

Faculty: Thomas

USC's agriculture program, offered by the department of life sciences in the College of Science and Mathematics, consists of four options:

Option

1) A pre-professional, general agriculture curriculum oriented toward transfer to a college or university offering professional degrees in agriculture;
2) An agriculture emphasis area in life sciences. Upon completion of the required courses, the bachelor of science (BS) in biology is awarded;
3) An agriculture emphasis area in business administration. Upon completion of the required courses, the bachelor of science in business administration (BSBA) degree is awarded; or
4) Instruction in pre-veterinary medicine, oriented toward transfer to a university offering a professional veterinary medicine program.

See the faculty adviser in LS 210B for complete course listings in each option and further information.

AG COURSES

AG 101 Introductory Animal Science 2(2-0) Corequisite AG 101L.
Introductory course dealing with domestic animals, cattle, horses, sheep, swine, poultry, and pets. Emphasis on origin, breeds, production characteristics, breeding (genetic principles), nutrition, management and health. GEN. ED. IIIA.

AG 101L Introductory Animal Science Lab 1(0-2) Corequisite AG 101.
Pragmatic instruction dealing with skills relative to animal production. GEN. ED. IIIA.

AG 103 Livestock Judging 1(1-0) Corequisite AG 103L.
Evaluation of beef, sheep, swine and horses for breeding and marketing purposes. Emphasis on type evaluation.

AG 103L Livestock Judging Lab 1(0-2) Corequisite AG 103.

AG 105 Agriculture Economics 3(3-0)
The role of agriculture in the economy, relation to economic forces to the farm business and agriculture industry.

AG 112 Fundamentals of Dairy 2(2-0) Corequisite AG 112L.
Dairy cattle breeds, selection of breeding stock, feed and milking practices, reproductive problems, milk production, marketing.

AG 112L Fundamentals of Dairy Lab 1(0-2) Corequisite AG 112.
Field experience and skill development related to dairy farming enterprise.

AG 121 Principles of Crop Production 3(3-0) Prerequisite BIOL 201 or permission of instructor. Corequisite AG 121L.
Crop production, cultural practices, botanical characteristics, techniques of production and crop improvement.

AG 121L Principles of Crop Production Lab 1(0-2) Corequisite AG 121.
Skill development field experience related to field crop production.

AG 202 Farm and Ranch Management 3(3-0) Prerequisite AG 105 or permission of instructor.
Operational economics of a farm or ranch, size, resource allocation, enterprise combination, labor and equipment efficiences.

AG 204 Introductory Soil Science 3(3-0) Prerequisite CHEM 111, 111L or 121 and 121L or permission of instructor. Corequisite AG 204L.
Formation, properties, and management of soils, emphasizing soil conditions that affect plant growth.

AG 204L Introductory Soil Science Lab 1(0-2) Corequisite AG 204.
Chemical and physical properties of soils.

AG 206 Feeds and Feeding, Applied Animal Nutrition 3(3-0) Prerequisite AG 101, CHEM 111/111L or 121/121L or permission of instructor.
Nutrient classification, nutrient sources and requirements of food-producing animals, ration formulation for all species domestic animals.

AG 213 Advanced Livestock Judging 2(1-2) Prerequisite Permission of instructor.
Judging, meat animals, breeding animals, beef, sheep, swine and horses.

AG 230 Light Horse Management 2(2-0) Corequisite AG 230L.

AG 230L Light Horse Management Lab 1(0-2) Corequisite AG 230.
Skill development, field experience related to light horse production.

AG 262 (BIOL 262) Basic Horticulture 3(3-0) Prerequisite BIOL 201 and 201L or permission of instructor. Corequisite AG 115L. GEN. ED. IIIA.

AG 262L (BIOL 262L) Basic Horticulture Lab 1(0-2) Prerequisite BIOL 201 and 201L or permission of instructor. Corequisite AG 115. GEN. ED. IIIA.

AG 291 Special Topics (1-3 VAR)
Areas of current progress in agriculture topics selected to meet group desires.

AG 360 (BIOL 360) Applications of Computers in the Laboratory 3(2-2) Prerequisite CST 101 or MATH 240 or equivalent.
Application of computing to medicine, nursing, agriculture, biological sciences with emphasis placed upon the use of microcomputers, peripheral devices, data banks and communications available to the life scientist.

AG 381 (BIOL 381) Entomology 2(2-0) Prerequisite BIOL 191, or permission of instructor. Corequisite AG 381L.
Structure, classification, ecology and control of insects.

AG 381L (BIOL 381L) Entomology Lab 1(0-2) Prerequisite BIOL 191. Corequisite AG 381.
Collection and identification of local insects.

AG 385 (BIOL 385) Plant Taxonomy 2(2-0) Prerequisite BIOL 201 or permission of instructor. Corequisite AG 385L.
Identification of the common families of conifers and flowering plants; study of their systematic relationships.

AG 385L (BIOL 385L) Plant Taxonomy Lab 2(0-4) Corequisite AG 385.
Collection and classification of local flora.

AG 480 Agricultural Policy 3(3-0) Prerequisite ECON 201, 202, AG 105.
Formation and administration of public policies affecting United States agricultural industry farm programs and other government policies associated with agriculture.

AG 498 Internship 15(0-40)
Career or job field work experience with an individual farm business agency, institution, or program. (S/U grade).

MASS COMMUNICATIONS

Faculty: Anderson, Miller, Orman, Pavlik

Mass communications offers programs leading to the degree of bachelor of arts (BA) or bachelor of science (BS).

The program cooperates with the English program in offering a composite major for students intending to teach in the secondary schools. A minor is available, and many courses are open to all students.

Mass communications graduates work in the mass media or the related fields, public relations and advertising, as writers, editors, broadcasters and communication specialists. Some students find the program excellent preparation for graduate or professional study, such as law school.

In keeping with the university's functional thrust of career orientation in its educational programs, the primary objective of the department of mass communications is to offer a professionally oriented program aimed at preparing its majors for careers in the mass media and their related agencies.

Application of the principles of mass communications is accomplished through supervised work on campus publications, a departmental newspaper, the university's FM radio station, the university's television station, the university's news services and sports information offices, and local internship programs. Internships (MACOM 494-Field Placement) are strongly recommended but not required.

A degree in mass communications leads to careers in reporting, editing, news direction and production, public relations, advertising and photography. Alternative career areas include law enforcement, teaching, sales, law, and management.

MAJORS

All students enrolled in the mass communications major must complete a eight-course, 25-credit-hour core curriculum. The core curriculum includes the following courses:

			Credits
MACOM	101	The Mass Media	3
MACOM	201	News Writing	3
MACOM	216	Advertising	3
MACOM	265	History of Mass Media	3
MACOM	280	Public Relations	2
MACOM	411	Journalism Law and Ethics	5
MACOM	415	Theories of Mass Communication	3
MACOM	493	Mass Media Seminar	3
			25

In addition all majors are **required** to specialize in one of four emphasis areas offered in the program. Emphasis areas, or sequences, require 20 additional credit hours of course work beyond the mandatory 25-credit-hour core curriculum for completion of the major. The four emphasis areas in the program and total credit hours required for each are:

	Total Credits
News-Editorial	45
Telecommunications	45
Public Relations	45
Advertising	45
	180

All students majoring in mass communications specialize in one of the four sequences listed above, arranging a schedule with the appropriate sequence director. All majors should complete the basic communications sequence (10 semester hours) prior to enrolling in MACOM 201, a core curriculum requirement.

The sample schedule below reflects a news-editorial emphasis. Changes would be required for other sequence areas. Majors should consult the mass communications program office for specific course requirements for each of the four emphasis areas.

A typical mass communications schedule is:

Freshman Year			**Credits**
ENG	110, 211	Composition I and II	6
MACOM	101	The Mass Media	3
MACOM	102	Introduction to Broadcasting	3
PE	100	PE Orientation	2
RDG	120	College Reading	2
SPCOM	101	Expository Speaking	2
Group	I	Humanities	8
Group	II	Social Sciences	8
			34

Sophomore Year			**Credits**
MACOM	201	Newswriting	3
MACOM	202	Feature Writing	3
MACOM	216	Advertising	3
MACOM	265	History of Mass Media	3
MACOM	280	Public Relations	2
Group	I	Humanities	2
Group	II	Social Sciences	2
Group	III	Natural Sciences	10
		Electives	6
			34

Junior Year			**Credits**
MACOM	301	Editorial Writing	3
MACOM	311	Copy Editing and Makeup	3
MACOM	401	Photographic Procedures	4
		Electives	21
			31

Senior Year			**Credits**
MACOM	411	Journalism Law and Ethics	3
MACOM	415	Theories of Mass Communications	3
MACOM	445	Reporting Public Affairs	5
MACOM	465	Mass Media Seminar	3
		Electives	16
			32

English-mass communications composite major. The individual who plans a career in secondary education, technical writing or a similar field may choose the English/mass communications composite major. The student must complete the mass communications core curriculum as well as an arranged program of course work preferably including MACOM 377. The English curriculum of the composite major is arranged by an adviser from the English faculty.

USC Today. USC TODAY, the university's weekly newspaper, is published as a laboratory tool of the mass communications program each Wednesday of the regular academic year. The newspaper serves the students, faculty, and staff of USC in addition to the Pueblo community. Editorial and management positions are awarded each spring for the following academic year after review of all applications by interested parties. The newspa-

per is funded totally through advertising revenue. The newspaper's editorial and advertising advisers are members of the mass communications faculty, who may also participate on the publications review board. The USC TODAY offices are located in ART/MUSIC 109 and 110.

KTSC-FM. KTSC-FM is licensed to USC as an educational radio station by the Federal Communications Commission. Operated by the Mass Communication program, the 10,000-watt station serves a 50-mile radius of the campus. Advanced mass communications students are involved in the daily programming, production and news. KTSC-FM operates on a daily basis throughout the calendar year.

KTSC/Channel 8. USC's Public Broadcasting System affiliate, KTSC/Channel 8, furnishes an opportunity to prepare broadcasting students in many technical areas by providing laboratory training and on-campus jobs for television students. KTSC/Channel 8 is operated by the Telecommunications Division. The station provides PBS programming in addition to local productions and services to Southern Colorado.

MINOR

Students desiring a minor in mass communications must complete at least 20 credit-hours of arranged courses, depending upon the student's interest area. All credits applied to the minor must be approved by the student's adviser.

MACOM COURSES

UNDERGRADUATE

MACOM 101 The Mass Media 3(3-0)
Mass media in American society, their growth, development and impact on contemporary culture. Open to all students. GEN. ED. ID.

MACOM 102 Introduction to Broadcasting 3(3-0)
Introductory course in broadcasting with emphasis on the historical and social impact of radio and television on American culture. Open to all students. GEN. ED. ID.

MACOM 110 Career Orientation 1(1-0)
Survey of career opportunities in the communication industry with emphasis on the mass media and related agencies. Recommended for majors and minors in mass communications.

MACOM 201 News Writing 3(3-0) Prerequisite BCOM 110, 211.
Instruction and practice in basic news writing skills including interpretation of news values and interviewing techniques for both print and broadcast media. Required of all majors and minors. Basic typing skills required.

MACOM 202 Feature Writing 3(3-0) Prerequisite MACOM 201.
Reporting campus events via interpretative articles, news features, straight features, seasonal stories and series articles.

MACOM 210 Photography 2(2-0)
Introductory course in photography with emphasis on its development, uses and impact on contemporary society. Open to all students.

MACOM 215 Media and Human Relations 3(3-0)
Behavioral science/communications approach to media, their roles and functions, with emphasis on interpersonal interaction in mass society. GEN. ED. ID.

MACOM 216 Advertising 3(3-0) Prerequisite Upperclass standing.
Principles of advertising on local and national levels for newspapers, magazines, radio and television.

MACOM 222 Broadcast News Writing 3(3-0) Prerequisite MACOM 102, 201.
Preparation of copy for radio/television news reports, interviews and commentary.

MACOM 224 (SPCOM 224) Broadcast Announcing 3(3-0) Prerequisite MACOM 102.
Study and application of the principles of oral communication to radio and television announcing.

MACOM 226 Introduction to Television Production 3(3-0) Prerequisite MACOM 102.
Concepts, skills and technical facilities involved in production of television programs. Emphasis on the understanding of the technical equipment used in program broadcasting.

MACOM 235 Women in Media 3(3-0)
The historical and cultural implications of the mass media's portrayal of women and the extent of their media participation from colonial to contemporary times.

MACOM 250 Media Lab 1(0-3)
A laboratory course for students involved in university publications and campus broadcast operations. Open to all freshmen and sophomores. Permission of the instructor required. May be repeated for up to 4 credits.

MACOM 251 Sports Writing and Statistics 3(2-3) Prerequisite MACOM 201, 202.
Study and practical application of sports writing and statistics; emphasis on press box experience at season intercollegiate athletic events. Repeatable once.

MACOM 265 History of Journalism 3(3-0)
History of the press in America from colonial times to the present day; political and economic impact of newspapers and magazines during the 19th and 20th centuries. Open to all students.

MACOM 280 Public Relations 2(2-0)
Historical and theoretical approach to contemporary public relations, with emphasis on the public relations process and ethics of contemporary practice. GEN. ED. IIB.

MACOM 301 Editorial Writing 3(3-0) Prerequisite MACOM 201, 202.
Study of editorial page management and policy, with emphasis on preparation of editorials, columns and critical reviews. Attendance at weekly editorial board meetings and selected on- and off-campus events required.

MACOM 302 Advertising Writing 3(3-0) Prerequisite MACOM 215 or permission of instructor.
Copy writing essentials and formats for print, broadcast and direct mail advertising. Emphasis on developing writing techniques for practical application in both retail and product advertising.

MACOM 311 Copy Editing and Makeup 3(3-0) Prerequisite MACOM 201, 202.
News evaluation, copyreading, rewriting, headline writing, page makeup and similar duties of the newspaper copy editor.

MACOM 312 Typographic Techniques 3(3-0) Prerequisite MACOM 311.
Technical introduction to production methods used in newspapers, advertising and public relations; emphasis on printing techniques, typography, photomechanical processes, computerized typesetting and graphic technology.

MACOM 316 Advertising Campaigns 3(3-0) Prerequisite MACOM 216 or permission of instructor.
Practical application of planning and development of advertising campaigns for print and broadcast media; emphasis on the use of creative strategy.

MACOM 317 Advertising Strategy 3(3-0) Prerequisite MACOM 216, 316.
Seminar emphasizing tactics and strategies of advertising planning, utilizing media techniques, marketing posture and creative media buying.

MACOM 318 Retail Advertising 3(3-0) Prerequisite MACOM 216, 316.
The need, direction and potential of local advertising and the media associated with retail communication, with emphasis on retail campaign design, client services and problem solving.

MACOM 319 Direct Advertising 3(3-0) Prerequisite MACOM 216.
Direct advertising is an advanced course stressing the philosophy, objectives, content and development of direct response advertising, particularly direct mail and computer-generated messages.

MACOM 320 Broadcast Station Programming 3(3-0) Prerequisite MACOM 222, 224, 226.
Program types used on broadcast stations; analysis of network structure and local station programs; ethical requirements in programming.

MACOM 326 Advanced Television Production 3(6-0) Prerequisite MACOM 226.
Television studio and control room operation; emphasis on video console equipment, cameras, microphones, stagecraft and lighting.

MACOM 350 Advanced Media Laboratory (2-4 VAR)
An advanced laboratory course for students involved in university publications and campus broadcast operations. Upperclass standing and permission of the instructor required. May be repeated for up to ten credits.

MACOM 377 Journalism in the Secondary School 3(3-0) Prerequisite Upperclass standing and permission of instructor.
Introduction to teaching journalism/communications in junior and senior high school; emphasis on organizing and supervising student publications.

MACOM 401 Photographic Procedures 4(3-2) Prerequisite MACOM 210 or permission of instructor.
Practical course in still photography; emphasis on camera operation and darkroom procedure. A 35mm camera is required.

MACOM 402 Photojournalism 4(3-2) Prerequisite MACOM 401.
Practical course in pictorial reporting; emphasis on spot news features, picture stories and photographic essays.

MACOM 411 Journalism Law and Ethics 5(5-0) Prerequisite Upperclass standing.
Ethical and legal factors of mass communications related to the structure and substance of laws at federal, state and local levels are studied including freedoms, restraints and contemporary issues.

MACOM 415 Theories of Mass Communication 3(3-0) Prerequisite MACOM seniors only, or permission of instructor.
Application of information theories to mass communication problems. Nature of the communication process in groups and between mass media and audiences. Contribution of theoretical concepts to solving specific problems.

MACOM 421 Public Relations Case Problems 3(3-0) Prerequisite MACOM 202, 222, 290.
Continuation of MACOM 290; emphasis on practical approach is to client-community problems, press relations, industrial publications, brochures and other specialized public relations tools.

MACOM 422 Public Relations Campaigns 3(3-0) Prerequisite MACOM 421.
Simulated independent public relations agency approach to developing and implementing public relations campaigns; emphasis on practical application of agency-client relations and problem solving.

MACOM 425 Audience Research Methodology 3(3-0)
Generalized research methodology course. Effective and appropriate research tools to define and describe various publics contained within the mass audience. Emphasis on sampling practices, encoding and interpretation of results. Pragmatic task activities via Nielson, Arbitron, SRDS, content analysis and related data sources.

MACOM 426 TV Documentary Production 3(3-0) Prerequisite MACOM 226, 326 and permission of instructor.
Actual experience in planning, scripting and producing documentary video production on locations throughout southeastern Colorado for broadcast and public service agencies.

MACOM 440 Magazine Writing 3(3-0) Prerequisite MACOM 201, 202.
Instruction and practice in writing nonfiction magazine articles, with emphasis on story research and market selection.

MACOM 445 Reporting Public Affairs 5(3-4) Prerequisite MACOM 201, 202.
Instruction and practice in reporting public affairs, including crime and the courts, and news originating in city and county governments, state legislature, and school boards. Interpretive and investigative reporting skills. Attendance at public meetings required.

MACOM 450 Film Criticism in the Media 3(3-0) Prerequisite Senior standing.
The role and function of the film critic in television and print journalism, with emphasis on writing the critical review.

MACOM 490 Special Projects 3(0-3) Prerequisite Upperclass standing or permission of instructor.
Individualized instruction within a special interest area, under supervision of a member of the department. Repeatable once.

MACOM 491 Special Topics (1-3 VAR) Prerequisite Upperclass standing or permission of instructor.
Exploration of scholarly and special interest subjects in the mass media and related fields.

MACOM 493 Seminar 3(3-0) Prerequisite Senior standing.
Seminar devoted to special problems in mass media; emphasis on interrelationships of media, understanding media, and the role of criticism.

MACOM 494 Field Experience (3-10 VAR) Prerequisite Upperclass standing, minimum of 30 hours in major, or permission of program chairman.
A semester-long internship. Student performs the professional duties required by the cooperating commercial mass medium, business or public service agency. May be repeated for up to 15 hours credit.

MACOM 495 Independent Study 2(0-2) Prerequisite Upperclass standing or permission of instructor.
Individual research, directed reading and/or special assignments under supervision of a member of the department. Repeatable once.

MACOM 496 Cooperative Education Placement (1-4 VAR) Prerequisite Permission of instructor.
Arrangement between employers and faculty members to provide students with an opportunity to earn academic credit and monetary reimbursement for on-the-job training in their field of study. Two placements must occur in academic semesters and one in a summer session for the equivalent of at least 12 months employment. The student must re-enroll each placement term. 12 credits maximum allowed toward graduation.

GRADUATE

MACOM 591 Special Topics (1-3 VAR) Prerequisite Graduate standing.
Exploration of scholarly and special interest subjects in the mass media and related fields.

MATHEMATICS

Faculty: Allen, Blandford, Bramlett, Bronn, Derr, Gill, Johnson, Li, Miller, Nichols, Orr, Phillips, Prater, Redman, Withnell

The mathematics program offers courses leading to the degrees of bachelor of arts (BA) and bachelor of science (BS). Each degree includes options in computer science and applied mathematics. A major is also available for those who wish to teach secondary school mathematics.

The program offers minors designed for individual students and a teaching minor for secondary school mathematics. Service courses are provided for students in business, the sciences and the technologies, and general mathematics courses are open to all students. The program also:

- provides tutorial services to all students through the mathematics learning center in PM 112. (Prospective secondary mathematics majors gain considerable "on-the-job" experience by assisting the tutorial staff.);
- allows students the opportunity to test out of many mathematics courses. Copies of the test-out procedure may be obtained in the mathematics office;

- grants advanced placement standing to qualified incoming students;
- offers an endorsement program in mathematics for those previously certified in secondary education; and
- offers a Mathematics Placement Test service to all freshmen and transfer students.

Such areas as the physical management and social sciences are discovering numerous applications for mathematical methods. Non-mathematics majors are offered many courses which only require a previous, adequate knowledge of algebra and/or working knowledge of BASIC computer language. Mathematics faculty will provide information on entry requirements.

The role of mathematics in the physical sciences and engineering is well established. Recently, the life and social sciences, economics and management have increasingly relied upon the use of mathematics. The computer's speed, information capacity and decreased cost have been and will continue to be the principal causes for the rapid growth of such applications.

Majors in the mathematical sciences may choose from a broad spectrum of career opportunities. Actuarial science, computer science, mathematical modeling, statistics, industrial control, market forecasting and operations research are among the areas currently in high demand and expected to grow in the coming decade.

MAJOR

Mathematics majors may tailor their major through choice of electives. Students may choose an emphasis in pure mathematics, applied mathematics, statistics or secondary school mathematics teacher preparation.

The core curriculum consists of MATH 126, 224, 271, 307, 325, 327, 421 and either MATH 350 or 456. An additional nine semester hours of approved upper-division electives (excluding MATH 360 and 361) and three semester hours of a high-level computing language are required. To enhance each student's career goal potential, mathematics majors are required to:

- earn a C or better in each course in the major;
- maintain a grade-point average of 2.00 or better for all mathematics courses numbered above 239. (MATH 360 and 361 are not to be used in determining grade-point average.);

- complete a minimum of 12 semester hours of upper-division mathematics courses; and
- complete an approved two-semester sequence in a laboratory science.

Each mathematics major also must complete a minor or an approved area of concentration. Along with those presented in this bulletin, the mathematics department recognizes areas of concentration in education, engineering and the natural sciences. Further information may be obtained from the mathematics department office, PM-222.

The sample four-year program that follows only illustrates a possible schedule. To assure appropriate initial placement, explicit short- and long-term course planning, as well as timely evaluation of student progress, each student interested in a mathematics major or minor must declare that intention at the earliest possible time. The student then is assigned a mathematics adviser who will assist the student in planning and fulfilling university and program degree requirements.

A typical schedule for a mathematics major with a computer science minor is:

Freshman Year			**Credits**
CST	105	FORTRAN	3
CST	122	Structural Programming	3
ENG	110, 211	Composition I and II	6
MATH	126, 224	Calculus and Analytic Geometry I and II	10
PHYS	221/221L	General Physics I and Lab	5
RDG	120	College Reading	2
SPCOM	100, 101	Basic Speech Communication	3
			32

Sophomore Year			**Credits**
CST	210	Introduction to Assembler Language	3
CST	222	Data Structures/Pascal	3
MATH	271	Introduction to Mathematical Thought	3
MATH	307	Introduction to Linear Algebra	3
MATH	325	Intermediate Calculus	4
PE		Activities Class	2
PHYS	222/222L	General Physics II and Lab	5
GROUP	I	Humanities	3
GROUP	II	Social Sciences	6
			32

Junior Year			Credits
CST	360	Digital Computer Concepts	3
CST	300+	Elective	3
MATH	327	Algebraic Systems	3
MATH	350	Probability	3
		or	
MATH	456	Applied Statistics I	
MATH	300+	Electives	3
PHYS	323/323L	General Physics II	5
GROUP	I	Humanities	5
GROUP	II	Social Sciences	4
		Electives	3
			32

Senior Year			Credits
CST	300+	Elective	5
MATH	301	Problem Solving	1
MATH	300+	Electives	6
MATH	421	Advanced Calculus	3
GROUP	I	Humanities	2
GROUP	II	Natural Science	3
		Electives	12
			32

Program requirements vary. Advisers are aware of differences. For example, MATH 377 is required of all mathematics teacher preparation majors, but is not acceptable as an elective to meet the requirements of any other mathematics program.

MINORS

Programs leading to a minor in mathematics are diverse in order to meet the needs of a variety of students. The program will make every attempt to cooperate on an intra and inter-program level to design specific programs to suit individual student needs. Only courses in which a grade of C or better is earned will count toward a mathematics minor.

Students planning a mathematics minor should contact a mathematics program adviser early in their academic program.

The mathematics teaching minor requires MATH 126, 224, 307, 327, 330 and 377 for a total of twenty-five semester hours.

The following criteria is the guide for all other mathematics minors:

1) one year of calculus (MATH 126, 224)

2) three mathematics courses numbered above 300 (excluding MATH 301, 360, 361, 377) at least two of which must be taken at USC.

The generality of the requirements allow for greatest flexibility and diversity in the design of individual minor programs.

MATH COURSES

UNDERGRADUATE

MATH 104 Arithmetic for College Students 3(3-0)
Individualized course which provides developmental instruction in the basic skills of arithmetic.

MATH 105 Introductory Algebra 3(3-0)
Development of problem-solving skills. Includes elementary algebraic operations, linear and quadratic equations and the quadratic formula.

MATH 109 Mathematics for Everyone 3(3-0)
General education course designed to broaden and deepen the student's experience with elementary concepts and enhance his or her problem-solving ability. GEN. ED. IIIE.

MATH 120 Intermediate Algebra 4(4-0) Prerequisite One year of high school algebra or MATH 105.
Development of problem-solving skills. Includes linear equations and inequalities, polynomials, roots and radicals, quadratic equations.

MATH 121 College Algebra 4(4-0) Prerequisite MATH 120 or three years of high school mathematics.
Functions, solutions of polynomial and radical equations, exponential and logarithmic functions, systems of equations, matrices, and determinants. GEN. ED. IIIE.

MATH 122 College Trigonometry 2(2-0) Prerequisite MATH 121 or equivalent.
Trigonometric and circular functions, identities, inverse functions, vectors, complex numbers. GEN. ED. IIIE.

MATH 124 Precalculus Math 5(5-0) Prerequisite MATH 120 or equivalent.
Polynomial, rational, exponential and logarithmic functions; solutions of systems of equations; trigonometric, circular and certain special functions. GEN. ED. IIIE.

MATH 126 Calculus and Analytic Geometry I 5(5-0) Prerequisite MATH 124 or equivalent.
Introduction to analytic geometry, functions, limits, continuity, differentiation and integration of algebraic functions, the theory of calculus and selected applications. GEN. ED. IIIE.

MATH 131 Mathematics for Engineering Technology I 4(4-0) Prerequisite MATH 120 or equivalent.
Integrated sequence (131-132-233) covering topics in algebra, trigonometry, analytic geometry, differential calculus, integral calculus, with engineering applications. GEN. ED. IIIE.

MATH 132 Mathematics for Engineering Technology II 4(4-0) Prerequisite MATH 131.
Continuation of MATH 131. GEN. ED. IIIE.

MATH 156 Introduction to Statistics 3(3-0) Prerequisite MATH 120 or equivalent.
Introduction to data analysis. Binomial and normal models. Sample statistics, confidence intervals, hypothesis tests, linear regression and correlation, and chi-square tests. GEN. ED. IIIE.

MATH 221 Applied Calculus: An Intuitive Approach 5(5-0) Prerequisite MATH 121 or equivalent.
Non-rigorous introduction to calculus with emphasis on applications and modeling in the life sciences, social and behavioral sciences and business. GEN. ED. IIIE.

MATH 224 Calculus and Analytic Geometry II 5(5-0) Prerequisite MATH 126.
Applications of differentiation and integration, operations on trigonometric, logarithmic and other transcendental functions.

MATH 233 Mathematics for Engineering Technology III 5(5-0) Prerequisite MATH 132.
Continuation of MATH 132. GEN. ED. IIIE.

MATH 240 Introduction to Computer Programming 1(1-0) Prerequisite MATH 120 or equivalent.
Principles of computers, numeration systems, data representations, and a general familiarization with computer equipment. Introduction to programming using high level languages. GEN. ED. IIIE. May be offered in a 5-week module.

MATH 241 Introduction to Digital Computers 2(2-0) Prerequisite MATH 240.
Continuation of MATH 240. More programming using high level languages and computer terminal usage. May be offered in a 10-week module. GEN. ED. IIIE.

MATH 243 Introduction to Computer Modeling 3(3-0) Prerequisite MATH 120 and 240 or equivalent.
Introduction to mathematical modeling. Emphasis on modeling techniques. Formulated models and existing computer programs will be used.

MATH 245 Introduction to Discrete Mathematics 3(3-0) Prerequisite MATH 121 or equivalent.
Logic and algebra of sets, permutations and combinations, relations and functions, graph theory, trees, recurrence relations and induction. GEN. ED. IIIE.

MATH 255 Nonparametric Methods 2(2-0) Prerequisite MATH 126 or one semester of statistics.
Topics include different tests for one sample case, two and K-related or independent samples case and their normal approximations.

MATH 271 Introduction to Mathematical Thought 3(3-0) Prerequisite MATH 224 or its equivalent.
A rigorous development of the familiar number systems of mathematics (naturals, integers, rationals and reals, with related topics such as functions, equivalence relations, principles of finite induction, and number theory.)

MATH 291 Special Topics (1-3 VAR) Prerequisite Permission of instructor and approval of the program.

MATH 301 Problem Solving 1(1-0) Prerequisite MATH 224.
The strategy and technique of mathematical problem solving, emphasizing presentation and rigor.

MATH 307 Introduction to Linear Algebra 3(3-0) Prerequisite MATH 126 or equivalent.
Matrices, vectors, vector spaces, linear transformations, and change of basis. Application topics are included.

MATH 325 Intermediate Calculus 4(4-0) Prerequisite MATH 224
Continuation of MATH 224: Solid analytic geometry, vector operations in three dimensions, multivariable calculus, and infinite series.

MATH 327 Introduction to Algebraic Systems 3(3-0) Prerequisite MATH 271 or permission of instructor.
Introduction to various algebraic systems such as groups, rings, and fields and their elementary properties. Properties of the integers and other common number systems.

MATH 330 Introduction to Higher Geometry 4(4-0) Prerequisite MATH 224 or permission of instructor.
Euclidean, hyperbolic, finite, and transformation geometries, models, and constructions.

MATH 337 Differential Equations I 3(3-0) Prerequisite MATH 224 or equivalent.
First order differential equations, homogeneous and non-homogenous linear differential equations, introduction to the Laplace transform, applications.

MATH 338 Differential Equations II 3(3-0) Prerequisite MATH 325, 337.
Linear systems, existence and uniqueness of solutions, non-linear equations, series solutions, orthogonal sets of functions, Fourier series, boundary value problems, partial differential equations and applications.

MATH 342 Introduction to Numerical Analysis 3(3-0) Prerequisite MATH 307 and FORTRAN or program permission.
Finding numerical solutions of polynomial, differential, integral, and other equations using the computer.

MATH 348 Numerical Methods 3(3-0) Prerequisite MATH 224, 307 and a high level programming language.
Discussion and development of programs to solve linear and non-linear systems of equations, to use eigenvalues and eigenvectors to solve systems of differential equations and boundary value problems. To apply iterative methods and rational function approximations and to use other related concepts and techniques.

MATH 350 Probability 3(3-0) Prerequisite MATH 224.
Introduction to elementary probability theory and stochastic processes. Probability spaces, random variables and their distributions, exponential and Poisson processes, limit theorems and applications.

MATH 353 Sampling and Survey Methods 2(2-0) Prerequisite One semester of statistics.
Nature and rationale of basic sample survey designs, ratio estimation and sampling from wildlife populations.

MATH 360 Mathematics for Elementary Teachers I 3(3-0) Prerequisite MATH 120.
Sets, numeration systems, whole numbers, algorithms, number theory, integers and intuitive geometry.

MATH 361 Mathematics for Elementary Teachers II 3(3-0) Prerequisite MATH 360.
Metric geometry, rational numbers, real numbers, logic, mathematical systems, metric system, probability and statistics.

MATH 377 Materials and Techniques of Teaching Secondary School Mathematics 4(4-0) Prerequisite MATH 327.
Instructional materials, methods, evaluation and other related topics.

MATH 411 Introduction to Topology 3(3-0) Prerequisite MATH 271.
Introduction to topological, compact, connected and metric spaces. Continuous functions and separation properties.

MATH 421 Advanced Calculus I 3(3-0) Prerequisite MATH 325 and MATH 271.
Rigorous development of concepts of elementary calculus. Sequences and series, uniform convergence, partial derivatives, Stieltjes Integral and metric spaces.

MATH 422 Advanced Calculus II 3(3-0) Prerequisite MATH 421.
Continuation of MATH 421.

MATH 425 Complex Variables 3(3-0) Prerequisite MATH 325.
Complex numbers, sequences and series, derivatives and integrals, analytic functions, conformal mappings.

MATH 443 Optimization Techniques 3(3-0) Prerequisite MATH 307 and FORTRAN or departmental permission.
Linear programming and its derivatives, network optimation and their applications to practical problems.

MATH 445 Discrete Mathematics 3(3-0) Prerequisite MATH 224, 307 and knowledge of a programming language, MATH 271 recommended.
Topics selected from mathematical reasoning, combinatorial techniques, set theory, binary relations, functions and sequences, algorithm analysis, and discrete analysis.

MATH 450 Design and Analysis of Experiments 4(4-0) Prerequisite Two semesters of statistics.
Design and analysis of experimental studies, including randomized block, Latin square and factorial experiments; general regression analysis of variance.

MATH 456 Applied Statistics I 3(3-0) Prerequisite MATH 224.
Probability space, discrete and continuous random variables; distributions; mathematical expectation; sampling; statistical inference; Bayesian rule; and linear regression.

MATH 463 History of Mathematics 2(2-0) Prerequisite MATH 271.
Survey of the origins of several important mathematical concepts and of the mathematicians responsible for these discoveries.

MATH 491 Special Topics (1-3 VAR) Prerequisite Permission of instructor.

MATH 493 Seminar (1-3 VAR) Prerequisite Senior standing, permission of instructor.

MATH 495 Independent Study (1-3 VAR) Prerequisite Senior standing, permission of instructor.
Allows academically strong seniors to earn credit for independent work done under the guidance of a faculty member.

GRADUATE

MATH 501 Foundations of Mathematics 3(3-0)
Sets, logic, axiomatics, mappings and the various sub-systems of the reals for beginning graduate students.

MATH 507 Linear Algebra 3(3-0)
Vector spaces, matrices, eigenvalues, linear functionals and dual space and selected applications.

MATH 521 Intermediate Analysis 3(3-0)
Point set theory including the Heine Borel theorem, continuity, differentiation, sequences and series and the Riemann-Stieltjes integral.

MATH 527 Abstract Algebra 3(3-0)
Groups, rings, integral domains, quotient rings, ideals, fields, homomorphisms and related topics.

MATH 530 Advanced Geometry 3(3-0)
Foundations of geometry, transformations, types of geometry and selected Euclidean and non-Euclidean topics.

MATH 541 Computers 3(3-0)
Preparation for teachers in utilizing the computer to teach secondary school mathematics.

MATH 544 Mathematical Methods of Applied Science 3(3-0) Prerequisite Graduate standing.
Topics in applied mathematics for engineering and management. Emphasis will be given to the application of mathematical techniques, to problems in business and industry. Topics include deterministic and stochastic models, programming, opitimization, networks and simulation.

MATH 550 Elementary Statistical Methods 3(3-0)
Sampling techniques, testing of hypotheses, experimental design and analysis of variance and regression as an aid to research in behavior, education and science.

MATH 560 Concepts in Elementary School Mathematics (1-3 VAR)
Problems of the curriculum, methods of teaching and evaluation in the elementary school.

MATH 577 Concepts in Secondary School Mathematics (1-3 VAR)
Problems of teaching secondary school mathematics; the slow learner, methods, gifted students, evaluation.

MATH 591 Special Topics (1-3 VAR)

MATH 595 Independent Study (Projects) (1-2 VAR)
Allows students to earn credit independently under guidance of a faculty member.

MECHANICAL ENGINEERING TECHNOLOGY

Faculty: Chen, Greet, Hamidzadeh, Sweet

The program in mechanical engineering technology offers courses leading to the degree of bachelor of science in mechanical engineering technology (BSMET). Students interested in variations permitting an emphasis in the area of manufacturing should contact a faculty member in this program.

The programs are accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology.

The candidates must complete the minimum program requirements of 136 semester credit hours with not less than a 2.00 cumulative grade point average in the major area of study.

Transfer students must have a minimum overall grade point average of 2.5 for acceptance.

MAJORS

Mechanical engineering technology. The mechanical engineering technology program prepares students to become effective members of the engineering team. It emphasizes the practical applications of scientific and engineering principles to develop industrially oriented personnel with competencies which are needed in technology, research, design, development and production.

The program provides graduates with competency-based education in technology as well as in non-technical related areas. Mechanical engineering technologists are employed in most sectors of industry to participate in the growth and advancement of today's complex technology. They are responsible for the design, development and control of modern systems to benefit society.

The Society of Manufacturing Engineers Certification test may be taken before graduation. Satisfactory completion and a nominal fee afford the graduate provisional certification as a manufacturing engineering technologist.

A typical mechanical engineering technology schedule is:

Freshman Year			Credits
CHEM	121/121L	General Chemistry I and Lab	5
EET	108	Basic Electronics Principles I	2
ENG	115, 216	Technical and Scientific Writing I and II	6
MATH	131, 132	Math for Engineering Tech. I and II	8
MET	103	Machining Technology	3
MET	104	Welding Technology	3
MET	111, 112	Technical Drafting I and II	6
PE	100	PE Orientation	2
RDG	120	College Reading	2
			37

Sophomore Year			Credits
MATH	233	Math for Engineering Technology III	5
MET	201	Mechanics	3
MET	206	Strength of Materials	3
MET	205	Computer Programming and Algorithms	3
MET	222	Dynamics of Machinery	4
MET	203	Prin. and Application of En Materials	4
PHYS	201/201L,	Prin. of Physics I and Lab	4
PHYS	202/202L	Prin. of Physics II and Lab	4
		General Education	6
			36

Junior Year			Credits
EET	350	Electric Motors and Controls	3
EN	315	Industrial Organization and Operation	3
MET	308	Industrial Detailing	3
MET	321	Fluid Mechanics	3
MET	331	Applied Thermodynamics	3
MET	352	Design of Machine Elements	3
MET	371	Numerical Control Programming	4
MET	372	Computer-Aided Manufacturing	3
SPCOM	101	Basic Speech Communication	2
		General Education	6
		Guided Elective	3
			36

Senior Year			Credits
MET	409	Applied Fluid Power	3
MET	412	Applied Heat Transfer	3
MET	451	Industrial Robotics	3
MET	460	Instrumentation and Control Systems	4
		General Education	8
		Guided Electives	6
			27

MET COURSES

***MET 103 Machining Technology 3(1-4)**
Functions, applications, tooling and operation of saws, lathes, grinders, drilling and milling machines. Basic layout work, cutting tool geometry, machining sequences, establishing operating parameters for high efficiency machining.

***MET 104 Welding Technology 3(1-4)**
Welding and cutting processes. Arc welding techniques for shielded metal, gas tungsten and gas metal. Oxy-acetylene welding, brazing and cutting. Electrode and gas selection, weldability of metals, joint design, welding defects, distortion control and weld testing.

MET 111 Technical Drafting I 3(0-6)
Professional drafting techniques, lettering, line quality, scales and measurements to include metric, geometric constructions, orthographic projections, technical sketching, sectioning, isometric and auxiliary views. GEN. ED. IIIC.

***MET 112 Technical Drafting II 3(0-6) Prerequisite MET 111.**
Dimensioning, tolerances, and allowances, descriptive geometry, pattern development and working drawings.

MET 115 Nondestructive Testing I 3(2-2)
Determination of quality without change to the material by using liquid penetrant, magnetic particles, magnetic rubber and leak testing.

MET 152 Applied Physical Metallurgy 3(2-2)
Properties structure, testing of metals. Behavior of metal during heatng, cooling and processing. Heat treatment of steel and surface treatment of metals.

***MET 201 Mechanics 3(3-0) Prerequisite MATH 132.**
Basic concepts and application of static forces; couples, resultants, equilibrium, trusses, cables, friction, centroids and moments of inertia.

***MET 203 Principles and Application of Engineering Materials 4(3-2) Prerequisite CHEM 121.**
Atomic structure, bonding and arrangement of atoms in materials; behavior and properties of engineering materials including ceramic, polymeric and composite materials. Phase diagrams, microstructure, deformation and recrystallization; transformations and properties-structure relationships.

MET 204 Manufacturing Processes 3(2-2) Prerequisite MET 103.
Industrial processes used in the manufacturing community. GEN. ED. IIIC.

***MET 205 Computer Programming and Algorithms 3(3-0) Prerequisite MATH 124 or 131 or equivalent.**
Special treatment of scientific programming languages and techniques. Languages supported dependent on equipment on hand for topics in robotics, automated drafting, and digital process control machines. Emphasis on man-machine interface.

***MET 206 Strength of Materials 3(2-2) Prerequisite MET 201, 203 and MATH 233 or consent of the instructor.**
Stress-strain relationships, elastic and plastic; tension, compression, shear, torsion, bending and combined stresses; beams, columns and photo-elasticity.

***MET 222 Dynamics of Machinery 4(3-2) Prerequisite MET 112, 201 and PHYS 201.**
Fundamentals of kinematics and kinetics of moving parts in machine elements and mechanisms using analytical and graphical techniques. Cam and gear, gear train design and analysis.

MET 291 Special Topics (1-3 VAR) Prerequisite Sophomore status in MET.
For students majoring in mechanical engineering technology or individuals from local industry who have special interests not covered by existing courses.

MET 304 Industrial Radiography 3(2-2) Prerequisite MET 203.
Principles and operations of x-ray and gamma ray sources for radiographic examinations. Development of radiographic techniques using a 250 KV x-ray unit.

***MET 308 Industrial Detailing 3(1-4) Prerequisite MET 112, 205.**
Detail drawings, true position, feasibility and economics. Computer graphics and computer aided design.

***MET 321 Fluid Mechanics 3(2-2) Prerequisite MET 201.**
Properties of fluids, fundamentals of fluid flow, viscosity, and fluid friction. Incompressible flow in pipes.

***MET 331 Applied Thermodynamics 3(3-0) Prerequisite PHYS 201 and MATH 233.**
Fundamental concepts of work, heat and energy. First and second laws of thermodynamics and applications. Heat, energy and power cycles.

***MET 352 Design of Machine Elements 3(2-2) Prerequisite MET 112, 206, 222 and MATH 233.**
Fundamental concepts in the correct design of the separate elements which compose machines, application of properties and mechanics of materials modified by practical considerations.

***MET 371 Numerical Control Programming 4(2-4) Prerequisite MET 103 and MATH 131.**
Principles of numerical control (NC) and computerized numerical control (CNC) machine tool programming and operations. NC punched tape codes and formats. Point-to-point drilling and straight-line milling. Contouring using circular and linear interpolation. Tool selection. Specifying cutting speed and feeds. Canned cycles, macros, looping and editing.

***MET 372 Computer-Aided Manufacturing 3(1-4) Prerequisites MET 371.**
Principles of computer-assisted numerical control programming. Initialization, geometry, and machining statements. Log-in, loading, debugging, postprocessing and plotting the source program. Generating list and machine tape files. Calculation of costs.

MET 403 Plant Operations 2(2-0) Prerequisite MET 204.
Principles of plant layout, material flow, material handling, plant utilities, location and arrangement of equipment and machinery.

***MET 409 Applied Fluid Power 3(2-2) Prerequisite MET 321.**
Application of physical, thermodynamic and fluid flow principles to the study of applied fluid systems.

***MET 412 Applied Heat Transfer 3(3-0) Prerequisite MET 331.**
Principles of heat transfer, radiation, conduction and convection; heat exchangers.

MET 420 Combustion Engines 2(1-2) Prerequisite MET 331.
Thermodynamic analysis of various heat engine cycles. Combustion processes in actual systems and performance characteristics.

MET 441 Energy Technology 2(2-0) Prerequisite Permission of instructor.
Introduction to energy technology and alternative energy sources.

***MET 451 Industrial Robotics 3(2-2) Prerequisite Senior standing.**
History, basic theory, kinematics, geometry, control and application.

MET 452 Refrigeration and Air Conditioning 3(3-0) Prerequisite MET 331, 412.
Concepts and techniques in principles and applications of heating, ventilation and air conditioning.

***MET 460 Instrumentation and Control Systems 4(3-2) Prerequisites EET 108 and MET 321.**
Experimental transducers, methods or laboratory instrumentation, logic circuits and feedback control of experimental processes.

MET 473 Advanced Computer-Aided Manufacturing 3(1-4) Prerequisite MET 372.
Computer-assisted numerical control programming of complex part geometry utilizing conditional branching, looping, subroutines, variables, patterns, sets, rotation, translocation and mirroring. Lathe programming. Part boundary geometry. Mill/drill and lathe links. Interfacing CAM with computer graphics to achieve CAD-DAM.

MET 490 Special Projects 3(0-6) Prerequisite Senior standing in MET.
Research and design of working devices including planning of concept, feasibility, marketing, testing and fabrication. A formal report required.

MET 491 Special Topics (1-3 VAR) Prerequisite Senior standing in MET.
Special interest topics in areas not covered by existing department courses.

MET 493 Seminar (1-3 VAR) Prerequisite Senior standing in MET.
New topics and developments in mechanical design and technology.

MET 496 Cooperative Education Placement (1-5 VAR) Prerequisite Permission of department head.
For juniors and seniors. Work experience under the direction of field supervisor and faculty member.

*Required courses.

MILITARY SCIENCE

(RESERVE OFFICERS' TRAINING CORPS PROGRAM)

Faculty: Goodman, Kennedy, Mecurio, Morton, Navarro, Rogers, Wolf

The Army ROTC program. The Army Reserve Officers' Training Corps, in the College of Professional Studies, exists to develop college-educated officers for the active U. S. Army and Reserve components. Producing 75 percent of the commissioned officers in the Army, the program enables selected young men and women to prepare for positions of leadership in either military or civilian careers of their choice. The program is specifically designed to provide leadership instruction, a knowledge of the national security structure and an opportunity to gain practical experience in leadership and management techniques. The program of instruction is open to all qualified students and may be taken with no military obligation.

The program may be integrated with any academic major and thus may lead to either a bachelor of arts (BA) or a bachelor of science (BS) degree in the major field. Graduates are commissioned as second lieutenants in the Regular Army, the Army Reserve or the National Guard.

Four-year ROTC program. The four-year program is divided into two phases—a two-year basic course and a two-year advanced course. The basic course, conducted for freshmen and sophomores, does not obligate students in any way and can be taken in the same manner as any other academic course. Only those cadets who have demonstrated a positive potential for becoming effective officers while successfully completing the basic course are selected for the advanced course. Advanced course cadets attend a six-week summer camp with pay, travel expenses, food and lodging provided.

Two-year ROTC program. This program is designed for junior college transfer students or those students who have not participated in ROTC during their freshman and sophomore years. Veterans and students who have had the equivalent of the basic course may be granted constructive credit and be selected for the advanced course.

A six-week summer training period (basic camp) conducted after the sophomore year at Fort Knox, Kentucky, substitutes for the first two years of ROTC in the normal four-year program. Also, summer session and winter intersession Compression Programs may provide all the requirements for the first two years.

Army ROTC courses. All courses are approved by the university and credits are applied as electives toward requirements for graduation. Instruction is both academic and practical and is designed to develop self-reliance, confidence, initiative, courtesy and a strong sense of citizenship.

Leadership Labs. Regularly scheduled leadership labs provide students with actual leadership situations in drill and ceremony, physical, tactical and interpersonal training both on and off campus.

Simultaneous Membership program (SMP). The Simultaneous Membership program is designed to allow students to combine Reserve Forces duty with Army ROTC officer training courses on campus and earn about $5,000 in two years. To be eligible, a student must:

1) Be a member of the National Guard or Army Reserve.
2) Pass a qualifying physical examination.
3) Be a full-time student with at least two years left before graduation.
4) Be accepted by a Guard/Reserve unit into the SMP program.

Once accepted, students will be placed in the advanced course and continue to serve in a Reserve or Guard Unit at a minimum pay grade of E-5. The student will earn regular drill pay plus about $2,500 in ROTC allowances during his/her two years in the program. SMP will not interfere with other college assistance (GI Bill, etc.) the student may be receiving. Check with the Military Science department on current Guard/Reserve tuition assistance programs.

Scholarship program. The Army ROTC Scholarship program is designed to provide financial assistance for the education and training of highly qualified, higly motivated young men and women who desire to pursue careers as commissioned officers in the Active Army after graduation from college. Scholarship cadets are furnished tuition, fees, books, and subsistence allowance of $100/month. A number of two, three and four-year scholarships are available to qualified students.

MILSC COURSES

MILSC 101 National Defense Studies 1(1-0)
Organization of the Army and its role in American society. Also, related topics on the U.S. Army Special Organizations. Attendance of leadership laboratories is optional.

MILSC 102 Basic Survival Skills 1(1-0)
Introduction to basic skills required in the Army environment, appropriate for some civilian endeavors. Includes leadership, rappelling, tactical aircraft control, and others. Attendance of leadership laboratories is optional.

MILSC 201 Land Navigation Techniques 1(1-2)
Practical exercise in cross country land navigation. Emphasis on the use of the topographical map and lensatic compass. Includes leadership laboratories.

MILSC 202 Applied Survival Skills 1(1-2)
Skills required by both military and civilian leaders and managers, including survival, leadership, and managerial skills. Leadership laboratories.

MILSC 204 ROTC Basic Camp 4(0-4)
Six week practical training session providing cadets experience and instruction in basic military subjects. Substitutes for first two ROTC years. Conducted at Fort Knox, Kentucky. Transportation, housing, meals and pay are provided.

MILSC 210 Nations at War 3(3-0)
Causes, consequences and prevention of war. Includes study of seven different conflicts. GEN. ED. IIC.

MILSC 211 Public Speaking (2-3 VAR)
Introduction to speaking groups, emphasizing organization, effective support, speaker credibility and audience analysis. Application made through classroom presentations and analysis of models. GEN.ED.IG.

MILSC 301 Leadership and Management Development 3(3-2) Prerequisite Sophomore standing.
Technique and practice in applied leadership and management at the small group level. Military and corporate management simulation exercises. Leadership laboratories.

MILSC 302 Advanced Leadership and Instructor Techniques 3(3-2)
Leadership theory and research; emphasis on applicability to the Army leadership phenomenon. Also, theory and practice in preparing and presenting instruction. Leadership laboratories.

MILSC 304 ROTC Advanced Camp 6(0-6) Prerequisite MILSC 301, 302.
Six-week practical training session supplementing on-campus instruction by providing cadets experience and instruction in tactical subjects; emphasis on leadership development. Course is conducted at Fort Lewis, WA. (S/U Grades.) Transportation, housing, meals and pay are provided.

MILSC 310 (MGMT 310) Principles of Management 3(3-0)
Decision making, communication and leadership principles in business and nonprofit organizations.

MILSC 401 (HIST 401) The American Military Experience 3(3-0)
Origins and development of the armed forces in American society; six themes: the democratic revolution, the industrial revolution, the managerial revolution, the mechanical revolution, the scientific revolution, and the social revolution. Themes developed in chronological sequence. Leadership laboratories.

MILSC 402 Advanced Leadership and Management 3(3-2)
Analysis and discussion of military leadership theory. Development of management knowledge in such subjects as military law, the Army personnel management system, and professionalism and ethics. Leadership laboratories.

MUSIC

Faculty: Beck, Duncan, Kellogg, Muller, Roach, Strobel, Vorcé
Artists in Residence: Cedrone, Markowski, Molzer
Thatcher Chair of Music: Track

The program in music offers the bachelor of arts (BA) with emphasis in one of the following programs: music theory; music performance; certification in music education. The department is accredited by the National Association of Schools of Music.

Performance emphases are: voice, keyboard instruments, string instruments, woodwind instruments, brasswind instruments and percussion instruments.

The program also offers a minor and numerous courses and ensembles open to all students by audition. Facilities include an excellent recital hall and suitably equipped studios and practice rooms.

Graduates perform as professional musicians, teach privately or in schools or colleges or combine these and other activities.

MAJOR

Each of the programs for the music major requires the following core courses:

			Credits
MUS	101, 102	Theory I	8
MUS	121, 122	Survey of Music History I and II	4
MUS	201, 202	Theory II	8
MUS	244, 245	Conducting I and II	4
MUS	311, 312	Arranging I and II	4
MUS	321, 322	Music History (1700-Present)	6
			34

In addition to the core requirement, the theory and performance program require MUS 301 and MUS 304 (4 hours). The music education program requires additional courses in music and education for certification as required by the Colorado State Board of Education. The music education student must consult with the head of the department of music to establish a music education program.

All music majors must complete a minimum of eight semesters of applied major study, eight semesters of appropriate ensemble, and eight semesters of symposium.

A typical music schedule (performance or theory):

Freshman Year			**Credits**
ENG	110, 211	Composition I and II	6
MUS	101, 102	Theory I	8
MUS	121, 122	Survey of Music History I and II	4
MUS	161, 162	Applied Music Major	4
MUS	171, 171	Choir	6
MUS	185	Symposium	2
SPCOM	101	Basic Speech Communication	2
		Electives (Gen. Ed., Minor)	4
			36

Ensembles. Each student majoring in music must participate in one of the major ensembles offered by the program. This major ensemble must be the appropriate one for the student's declared performance emphasis. Appropriate major ensembles are as follows:

For students whose major performance emphasis is:

1) Voice
2) String instrument
3) Brass, woodwind and percussion instruments
4) Keyboard instrument

The appropriate ensemble is:

1) Choir
2) Orchestra or string ensemble
3) Band
4) Piano ensemble

If the student's performance emphasis is keyboard instruments and the academic emphasis is music education, the student must participate at least two academic years in the university choir.

Various minor ensembles, symphonic jazz, ensemble, stage band and percussion ensemble, are offered by the program and are available to all students on an audition basis or with permission of the instructor.

Those students enrolled in an applied music major must take a jury examination in their elected area at the end of each semester.

Those students enrolled in performance block must take a jury examination at the discretion of the component instructors involved at the end of each semester.

MINOR

Students desiring a minor in music are required to consult with the music program staff and the head of the music program. The minor in music does not lead to teacher certification.

Courses required for the minor are:

MUS	101, 102	Theory I	8
MUS	121, 122	Survey of Music History I and II	4
MUS	244 or 245	Conducting I or II	2
			14

In addition, the student must have a minimum of four semesters of applied study, four semesters of ensemble and four semesters of symposium.

MUS COURSES

UNDERGRADUATE

MUS 101 Theory I 4(3-2)
Fundamentals of musicianship correlating sight-singing, rhythmic reading, keyboard harmony and basic principles of part-writing. GEN. ED. IE.

MUS 102 Theory I 4(3-2)
Continuation of MUS 101.

MUS 118 Music Appreciation 3(3-0)
Terms related to music and specific music-listening skills to broaden understanding and appreciation of music as an art. GEN. ED. IE.

MUS 119 How to Read Music 3(3-0)
Music notation in its various rhythmical and pitch patterns related to the treble and bass clefs. GEN. ED. IE.

MUS 120 Jazz and Folk Music 3(3-0)
Beginning and development of jazz and folk music in the United States. GEN. ED. IE.

MUS 121 Survey of Music History I 2(2-0)
Historical style periods in western culture from the Middle Ages to 1800. GEN. ED. IE.

MUS 122 Survey of Music History II 2(2-0)
Continuation of MUS 121 from 1800 to present. GEN. ED. IE.

MUS 126 Introduction to Opera 3(3-0)
A survey of operas performed in major opera companies today. GEN. ED. IE.

MUS 144 Woodwind Class 2(0-4)
Techniques employed and problems confronted in teaching and playing woodwind instruments.

MUS 145 Brass Class 2(0-4)
Techniques employed and the problems confronted in teaching and playing brass instruments.

MUS 147 Functional Piano Class 2(2-0)
For students with little or no background in keyboard instruments. Explores the basic fundamentals of piano playing.

MUS 161 Applied Music Major 2(0-6)
In-depth study of the performance practices of keyboard, brass, woodwind, percussion or string instrument or voice.

MUS 162 Applied Music Major 2(0-6)
Continuation of MUS 161.

MUS 165 Performance Block C (1-3 VAR)
For music majors desiring to perform in ensembles other than those required. Also open to students majoring in other departments who wish to perform in any of the available ensembles. Credit depends on the number of ensembles desired.

MUS 170 Band 3(1-4)
Open to all regularly enrolled university students by permission. May be repeated for lower-division credit.

MUS 171 Choir 3(1-4)
Open to all regularly enrolled university students by permission. May be repeated for lower-division credit.

MUS 172 Piano Ensemble 2(2-0)
Open to all regularly enrolled university students by permission. May be repeated for lower-division credit.

MUS 174 Orchestra 2(0-4)
Ensemble specializing in the performance of appropriate string chamber literature. Open to all students who qualify by audition. May be repeated for additional credit.

MUS 175 Private Lesson 1(0-1)

MUS 181 Lab Choir 1(0-2)
Required of all music education majors every other fall semester of residence.

MUS 182 Lab Band 1(0-2)
Required of all music education majors each spring semester of residence. Freshman string, piano, and voice majors may be excused if they do not play a wind or percussion instrument.

MUS 185 Symposium 1(1-0)
Required course for all music majors. Student performance, both solo and ensemble, faculty lectures and demonstrations and public performance preparation.

MUS 186 Beginning Guitar Class I 1(1-0)
For the non-musician. Application of both melodic and chordal (rhythmic) mediums; introduction to the basic folk music of America.

MUS 187 Beginning Guitar Class II 1(1-1)
For the student with slight knowledge of the instrument. Finger picking techniques and chordal harmonization; chords covering the entire spectrum of the instrument.

MUS 201 Theory II 4(3-2) Prerequisite MUS 102.
Analytical techniques stressing style and ear-training.

MUS 202 Theory II 4(3-2) Prerequisite MUS 201.
Continuation of MUS 201.

MUS 210 Electronic Music 3(3-0)
Scientific and aesthetic practices employed in sound recording studio and electronic music. Intensive experience with the Arp synthesizer is acquired. Several computer music software programs are introduced.

MUS 241 String Class 2(0-4)
Techniques employed and problems confronted by the string instrument teacher.

MUS 242 Percussion Class 2(0-4)
Techniques employed and problems confronted in teaching and playing percussion instruments, tuned and untuned.

MUS 244 Conducting I 2(2-1)
Techniques and methods of conducting both vocal and instrumental ensembles.

MUS 245 Conducting II 2(2-1)
Continuation of MUS 244.

MUS 261 Applied Music Major 2(1-5) Prerequisite MUS 162.
In-depth study of performance practices of keyboard, brass, woodwind, percussion or string instruments.

MUS 262 Applied Music Major 2(1-5) Prerequisite MUS 261.
Continuation of MUS 261.

MUS 265 Performance Block C (1-3 VAR)
Continuation of MUS 165 for the sophomore student.

MUS 291 Special Topics (1-3 VAR)
Special study and/or activity not covered by regular offerings.

MUS 301 Counterpoint 2(2-0) Prerequisite MUS 202.
Directed approach to 16th Century composition. Writing in two, three, four and more voices.

MUS 304 Form and Analysis 2(2-0) Prerequisite MUS 202.
Analytical techniques in music from Gregorian Chant to contemporary music.

MUS 311 Arranging I 2(2-0) Prerequisite MUS 202.
Techniques of scoring for all instrumental combinations.

MUS 312 Arranging II 2(2-0) Prerequisite MUS 311.
Continuation of MUS 311.

MUS 321 Music from 1700 to 1850 3(3-0) Prerequisite MUS 122.
In-depth study of styles, forms and composers from the late baroque through romantic era.

MUS 322 Music from 1850 to the Present 3(3-0) Prerequisite MUS 321.
Post-romanticism and contemporary composition.

MUS 351 Music in the Elementary School I 2(2-0)
Logical steps in developing music appreciation and music skills throughout the elementary grades in the public school.

MUS 352 Music in the Elementary School II 2(2-0) Prerequisite MUS 351.
Continuation of MUS 351.

MUS 361 Applied Music Major 2(1-5) Prerequisite MUS 262.
Continuation of MUS 262 for the junior music student.

MUS 362 Applied Music Major 2(1-5) Prerequisite MUS 361.
Continuation of MUS 361.

MUS 365 Performance Block C (1-3 VAR)
Continuation of MUS 265 for the junior student.

MUS 370 Band 3(1-4) Prerequisite Junior standing.
Open to all regularly enrolled university students by permission. May be repeated for credit.

MUS 371 Choir 3(1-4) Prerequisite Junior standing.
Open to all regularly enrolled university students by permission. May be repeated for credit.

MUS 372 Piano Ensemble 2(2-0) Prerequisite Junior standing.
Open to all regularly enrolled university students by permission. May be repeated for credit.

MUS 374 Orchestra 2(0-4) Prerequisite Junior standing.
Ensemble specializing in performance of appropriate string chamber literature. Open to all students who qualify by audition. May be repeated for additional credit.

MUS 377 Materials and Techniques of Teaching Music in Public Schools I 3(3-0) Prerequisite MUS 144, 145, 241, 242, 245.
Comprehensive study in materials, techniques, methods and problem-solving necessary for the teacher of music in the public schools.

MUS 378 Materials and Techniques of Teaching Music in the Public Schools II 3(3-0)
Continuation of MUS 377.

MUS 385 Symposium 1(1-0)
Upper division continuation of MUS 185.

MUS 430 Practicum in Music I 2(0-4)
For the advanced music student to practice the teaching of music by assisting in the teaching of applied music groups within the department.

MUS 431 Practicum in Music II 2(0-4)
Continuation of MUS 430.

MUS 461 Applied Music Major 2(1-5) Prerequisite MUS 362.
Continuation of MUS 362 for the senior music student.

MUS 462 Applied Music Major 2(1-5) Prerequisite MUS 461.
Continuation of MUS 461.

MUS 465 Performance Block C (1-3 VAR)
Continuation of MUS 365 for the senior student.

MUS 495 Independent Study (1-4 VAR)
Combination of lecture and lab appropriate to the project. Individual instruction in special interest areas not offered in any course regularly taught.

GRADUATE

MUS 501 Special Methods in Music Education 2(2-0) Prerequisite Graduate standing.
Combination of lecture and lab appropriate to the project. For graduate students. In-depth study of techniques and materials for teaching music in the elementary and middle school. Involvement in research and practical application of approved methods.

MUS 593 Seminar 2(2-0) Prerequisite Graduate standing.
For graduate students. Practical application of current music techniques to secondary teaching.

NURSING

Faculty: Gilbert, Gray, King, Mettler, Mutzebaugh, Sabo, Sczekan

The baccalaureate nursing program one of two academic units in the School of Nursing and Social Work, consists of a four-year academic sequence which prepares the graduate to write the state board licensing examination and to qualify for entry into professional nursing practice. Upon satisfactory completion of the examination, the graduate is prepared to function as a generalist in a variety of settings. The educational program is fully approved by the Colorado Board of Nursing and is accredited by the National League for Nursing.

MAJOR

The curriculum is designed with prerequisite, foundation courses at the lower division. Requirements include specified courses in physical, biological and social sciences, humanities and electives. Learning experiences in nursing are conceptually based and include application of the nursing process in complex and diverse situations. Focus is on knowledge and understanding of theory, acquisition of practical skills, decision making and utilization of research in preparation for practice as a professional nurse. The

first nursing course in the major is offered at the sophomore level; the remaining courses must be completed in a specified sequence in the junior and senior years. All required courses in nursing, science support and academic minor or areas of concentration must be completed with a grade of C or above. Students have the option of completing either an academic minor or an approved area of concentration.

Admission to the university does not constitute acceptance to the nursing major. Information regarding the application process for nursing and requirements specific for the major may be obtained from the program office. Academic advising for majors must be provided by a program faculty member. Requests for advanced placement through proficiency tests or transfer of equivalent credit must be submitted in writing to the Department of Nursing Admissions Committee.

Freshman Year			**Credits**
BIOL	223/223L	Human Anatomy and Physiology I and Lab. . .	4
CHEM	111/111L	Principles of Chemistry	4
ENG	110, 211	Composition I and II	6
MATH	120	Intermediate Algebra	4
PE	100	PE Orientation	2
PSYCH	101	General Psychology	3
RDG	120	College Reading	2
SPCOM	100	Introduction to Speech Communications	1
SPCOM	101	Expository Speaking	2
Group	I	Humanities	3
Group	II	Social Sciences	1
			32

Sophomore Year			**Credits**
ANTHR	102	Introduction to Socio-Cultural Anthropology. . .	3
BIOL	206/206L	Introduction to Microbiology and Lab.	4
BIOL	224/224L	Human Anatomy and Physiology II and Lab . .	4
CHEM	112/112L	Introduction to Organic and Biochemistry and Lab	4
MATH	156	Introduction to Statistics	3
NSG	202/202L	Introduction to Health Careers and Lab	4
NSG	301	Core Concepts in Nursing I	3
SOC	101	General Sociology I.	3
Group	I	Humanities	6
			34

Junior Year			**Credits**
NSG	302	Health Assessment	4
NSG	304	Core Interventions in Nursing I	3
NSG	306	Introduction to Levels of Prevention	4
NSG	307	Health and Disease Systems	3
NSG	351	Core Concepts in Nursing II	3
NSG	352	Primary and Secondary Prevention in the Childbearing Family.	6
NSG	354	Core Interventions in Nursing II	3
NSG	362	Nursing Process in Secondary Prevention	5
Elective		300 or 400 level Area of Concentration	3
			34

Senior Year			**Credits**
NSG	401	Core Concepts in Nursing III.	2
NSG	404	Core Interventions in Nursing III	2
NSG	408	Nursing and Psychological Wellness	5
NSG	410	Nursing Process in Secondary and Tertiary Prevention	5
NSG	451	Core Concepts in Nursing IV	3
NSG	452	Nursing Process in Primary, Secondary, and Tertiary Prevention	6
NSG	454	Promotion of Health in Individual, Families, and Groups	4
Elective		300 or 400 level Area of Concentration	7
			34

NSG COURSES

UNDERGRADUATE

NSG 115 Pharmacology in Nursing 3(3-0) Prerequisite Permission of instructor.
Concepts related to drugs, their mechanism of action, potential dangers, and interaction with other drugs. Approach is to broad classifications rather than specific drugs.

NSG 117 Women, Health and Society 2(2-0)
Cultural, sociological and medical issues related to the role and status of women in society and the relationship between these norms and health status. Current health practices, sexism and racism in medicine and psychiatric approaches to women in therapy. GEN. ED. IIB.

NSG 202 Introduction to Health Careers 4(3-1)
Provides an overview of careers in the health care field. Discusses education and licensing requirements and job opportunities. Focuses on health care as a societal system. Observation in selected careers available. Laboratory focuses on providing skills necessary for basic safe care of clients.

NSG 202L Introduction to Health Careers Laboratory 1(0-3)
Focuses on providing skills necessary for basic safe care of clients.

NSG 291 Special Topics (1-4 VAR) Prerequisite Permission of instructor.
Topics and/or nursing skills, for enrichment of required nursing courses, and which serve the interest of 10 or more students will be considered.

NSG 301 Core Concepts in Nursing I 3(3-0) Prerequisite NSG 202.
Provides basic concepts in mental health communications, nursing theories, research, teaching learning, legal, ethical, cultural and professional issues applicable in professional nursing. Major focus on nursing theories, mental health, and nursing process.

NSG 302 Health Assessment: Life Cycle 4(3-1) Prerequisite NSG 202.
Directs the systematic assessment of healthy individuals of all ages. Focus on health history, use of instruments used in physical examination and developmental screening.

NSG 304 Core Interventions in Nursing I 3(1-2) Prerequisite NSG 202.
Primarily a laboratory course to provide the principles and practice for skills essential to implement nursing process. Includes personal hygiene, body mechanics, medical and surgical asepsis and insertion of tubes.

NSG 305 Ethical Issues in Health Care (3-0) Prerequisite Permission of instructor.
Selected philosophical theories which influence ethical choice. Areas of the law and legal systems which affect the public health. Current ethical issues related to nursing practice.

NSG 306 Introduction to Levels of Prevention 4(3-1) Prerequisite NSG 301.
Focus is on the nursing process and the healthy individual in community settings. Concepts of primary prevention are stressed.

NSG 307 Health and Disease Systems 3(3-0) Prerequisite Permission of instructor.
A theory course enabling application of the life sciences to levels of disease prevention using a systems approach.

NSG 351 Core Concepts in Nursing II 3(3-0) Prerequisite NSG 301.
Expands on concepts introduced in Core Concepts I. Emphasis is on analysis and planning aspects of nursing process. Introduces beginning research methodology related to professional issues or to concurrent nursing courses.

NSG 352 Primary and Secondary Prevention in the Childbearing Family 6(3-3) Prerequisite NSG 301, 302, 304, 306, 307.
Focus is on the applicaiton of primary and secondary levels of prevention to the childbearing family. Includes a study of internal and external forces that influence sexuality through the life cycle.

NSG 354 Core Interventions in Nursing II 3(2-1)
Theory introduces pharmacology as one method of intervention when individual's flexible lines of defense have been penetrated by stressors. Drug classifications related to concurrent nursing courses are studied. Nursing skills include those requiring asepsis.

NSG 362 Nursing Process in Secondary Prevention 5(3-2) Prerequisites NSG 301, 302, 304, 306, 307.
Application of principles of secondary prevention for short term acute conditions.

NSG 391 Special Topics (1-5 VAR) Prerequisite Permission of instructor.
Topics are considered which serve the interest of 10 or more students focusing on a contemporary trend in nursing practice.

NSG 401 Core Concepts in Nursing II 2(2-0) Prerequisite NSG 351.
Expands on concepts introduced in Core Concepts in Nursing II. Emphasis is on ethical, legal, and cultural issues in nursing.

NSG 404 Core Interventions in Nursing II 2(2-0) Prerequisite NSG 354. Focus on nursing skills utilized in maintaining or restoring the basic physiological structure of individuals. Builds on skills learned in Core Interventions I and II. Continuation of pharmacodynamics and dealing with monitors and machines.

NSG 408 Nursing and Psychological Wellness 5(3-2) Prerequisite NSG 352, 362.
Focus on application of nursing process in maintaining or restoring the basic psychological structure of individuals, families and groups. Stressors that jeopardize the basic structure and the lines of defense as well as resistance that protects the psychological structure are examined.

NSG 410 Nursing Process in Secondary and Tertiary Prevention 5(3-2) Prerequisite NSG 352, 362.
Focus on application of nursing process in maintaining or restoring the basic physiological structure of individuals. Stressors that jeopardize the basic structure and the lines of defense as well as resistance that protects the physiological structure are examined.

NSG 451 Core Concepts in Nursing IV 3(3-0) Prerequisite NSG 401.
Focus on understanding organization behavior with primary emphasis on developing strategies for leadership and management of health care systems. Included are concepts of leadership, management, collaborative interdisciplinary behaviors, and organizational theory in simple and complex settings.

NSG 452 Nursing Process in Primary, Secondary and Tertiary Prevention 6(3-3) Prerequisites NSG 408, 410.
Synthesis of nursing knowledge through the application of nursing process to all levels of prevention in complex acute care and rehabilitative settings. Focus is on evaluation of interventions which promote restoration of the integrity of the basic structure.

NSG 454 Promotion of Health in Individuals, Families, and Groups 4(2-2) Prerequisites NSG 408, 410.
Focus on application of nursing process to complex client systems with a major emphasis on primary and tertiary levels of prevention. Includes concepts of community, large group behavior, health education, epidemiology, chronicity, and referral. Goal is to view members of the community across the life span to facilitate wellness.

NSG 492 Research 2(2-0) Prerequisite NSG 309.
Major nursing theories in terms of nursing functions they imply, kinds of hypotheses they would generate, and kinds of research they would stimulate. Aspects of the research process, design, methods of collecting and analyzing data, and interpretation of data.

NSG 495 Independent Study (1-6 VAR)
In-depth applications of the nursing process in selected areas of nursing practice.

PHILOSOPHY

Faculty: Aichele, Driscoll

A minor in philosophy is available for students majoring in other disciplines, and many courses are open to all students.

Instruction is designed to help students understand and appreciate the great philosophic ideas and movements of the past and present, to see these ideas in relation to their cultural setting, to develop the ability to think, speak, and write in a clear and analytical manner, and to begin to formulate a viable philosophy of life. The department seeks to meet the needs of four types of students:

1) Those who have no professional interest in philosophy but who wish to make the study of philosophy a part of a general liberal education.

2) Those with primary interests in fields related to philosophy (such as politics, law, literature), who wish to use a minor in philosophy as preparation for advanced professional or graduate study in schools which approve of philosophy as an undergraduate minor field.
3) Those with a professional interest in philosophy who wish to go on to do graduate work in the field. (Students wishing to become professional philosophers usually expect to teach in a university setting and should plan for graduate work leading to a doctorate.)
4) Those majoring in areas such as nursing, the technologies, business, the arts and sciences, who wish support courses to provide theoretical underpinning for, or to explore practical implications for everyday life of, their major area of study.

MINOR

Twenty-one hours of philosophy are required. The student's program must be approved by the philosophy faculty. The minor in philosophy is:

			Credits
PHIL	100	Introduction to Plato	3
	or 101	Introduction to Problems in Philosophy	3
PHIL	205	Deductive Logic	3
PHIL	313, 314, 315	History of Philosophy I and II	9
PHIL	401	Epistemology	3
	or 402	Metaphysics	3
		Upper division electives	3
			21

Only one philosophy course with a grade below C will be accepted as credit toward the minor. Other philosophy courses with a grade below C must be repeated or additional hours taken.

PHIL COURSES

UNDERGRADUATE

PHIL 100 Introduction to Plato 3(3-0)
Introduction to the realm of philosophical thinking through a study of select dialogues by Plato. Special emphasis on his *REPUBLIC*. GEN. ED. IF.

PHIL 101 Introduction to Problems in Philosophy 3(3-0)
Some of the crucial problems of philosophy, with solutions from the major philosophers. GEN. ED. IF.

PHIL 103 Civilization 1(1-0)
Kenneth Clark's acclaimed film series Civilisation. Thirteen 50-minute films exploring the concept of civilization from the primary viewpoint of the arts and philosophy. GEN. ED. IF.

PHIL 105 Critical Reasoning 3(3-0)
Survey of the general principles of correct reasoning with emphasis on the role of language in the reasoning process. Major concern with induction and fallacy detection. GEN. ED. IF.

PHIL 108 Philosophy of Religion: The Supernatural I: Devils, Witches and God 1(1-0) GEN. ED. IF.

PHIL 109 Philosophy of Religion: The Supernatural II: Life after Death, Ghosts, Reincarnation 1(1-0) GEN. ED. IF.

PHIL 110 Philosophy of Religion: The Supernatural III: ESP, Miracles, Faith Healing 1(1-0) GEN. ED. IF.

PHIL 121 Oriental Religions I, India: Hinduism and Buddhism 1(1-0) GEN. ED. IF.

PHIL 122 Oriental Religions II, China and Japan: Taoism, Confucianism and Shinto 1(1-0) GEN. ED. IF.

PHIL 123 Oriental Religions III, Lesser Asian Religions: Zoroastrianism, Jainism, Islam and Sikhism 1(1-0) GEN. ED. IF.

PHIL 205 Deductive Logic 3(3-0)
Study of the principles of methods used to distinguished valid from invalid patterns of deductive reasoning. Especially useful for students in computer or mathematics related fields.

PHIL 220 Ethics and Values 3(3-0)
Representative ethical theories, competing conceptions of value and obligations; encourage development of an evolving personal value system. GEN. ED. IF.

PHIL 291 Special Topics (1-3 VAR)
Students who have an area of special interest are encouraged to contact the department. Special topics and/or authors of philosophical interest. May be repeated for 12 credits maximum.

PHIL 303 Philosophy of Science 3(3-0) Prerequisite PHIL 205 or a strong background in experimental science.
Study of the philosophical issues underlying scientific knowledge. Special consideration to the logical structure of scientific theory.

PHIL 305 Medical Ethics 3(3-0)
Current problems of medical ethics such as experimentation on humans, genetic counseling, right to die, abortion, allopathic medicine.

PHIL 313 History of Philosophy Seminar I 3(3-0)
Greek, Latin, and medieval philosophy.

PHIL 314 History of Philosophy Seminar II 3(3-0)
Early modern period (Renaissance) in Western philosophy from Hobbes to Hume. Emphasis on the continental rationalists and the British empiricists.

PHIL 315 History of Philosophy Seminar III 3(3-0)
Later modern period in philosophy beginning with Kant and continuing to the beginning of the 20th Century.

PHIL 401 Epistemology Seminar 3(3-0) Prerequisite PHIL 205, 313 and 314.
Study of the philosophical principles and issues relevant to various claims of knowledge.

PHIL 402 Metaphysics Seminar 3(3-0) Prerequisite PHIL 313 and 314.
Ontology, cosmology, space, time, substance, change, freedom, and other topics of metaphysics.

PHIL 491 Special Topics (1-3 VAR)
Special topics and/or authors of philosophical interest. May be repeated for 12 credits maximum. More advanced than PHIL 291. Students who have an area of special interest are encouraged to contact the department.

GRADUATE

PHIL 505 Advanced Philosophical Psychology 3(3-0) Prerequisite Graduate standing.
Advanced philosophical study of the concept of mind, of human consciousness, of such mental phenomena as emotions, and of the dynamics of how people think.

PHYSICAL EDUCATION

Faculty: Aguilar, Banks, Cranmer, McIntosh, Muhic, Stutters

The School of Education offers programs leading to the degree of bachelor of science (BS) in physical education and recreation. It also offers minors in physical education, coaching and recreation and activities courses for all students.

The professional preparation leading to a degree in physical education includes preparation for teacher certification with endorsements in elementary, secondary or K-12. Certification requirements are accomplished by completing a physical education program listed below and the professional education requirements of the state. Students should consult the education section of this catalog.

MAJORS

The requirements for the major consist of a minimum of 45 hours in approved physical education courses. All courses applied toward the major must be approved by the student's adviser and by the head of the program.

The following courses are **required** of all physical education majors:

			Credits
PE	232	First Aid	2
PE	233	Introduction and History of HPE and R	3
PE	235	Principles of PE	2
PE	289L, 389L	Student Assistant	2
		Two elective courses approved by the student's adviser	4
PE	322	Elementary School PE	2
PE	342	Training Room Methods	2
PE	343	Tests and Measurements in PE	2
PE	364	Kinesiology	2
PE	378	Principles and Techniques of Teaching PE	2
PE	442	Physiology of Exercise	2
PE	451	Officiating	2
PE	461	Organization and Administration of HPE and R	3
PE	465	Adaptive PE	2
			32

All students seeking endorsement for teaching physical education must complete the courses listed above plus certain methods courses in which they must earn grades of C or above. All endorsements require:

			Credits
PE	242	Skills and Techniques of Perceptual Motor and Self Testing Activities	3
PE	243	Skills and Techniques of Rhythmic Activities	1
PE	244	Skills and Techniques of Soccer, Volleyball, Track and Basketball	3
PE	245	Skills and Techniques of Weight Training, Circuit Training and Self Defense	2
PE	247	Skills and Techniques of Gymnastics, Tumbling and Apparatus	2
			11

In addition to the above, each type of endorsement **requires** certain other methods courses with grades of C or above, as follows:

Elementary (total of 45 hours)

PE	249	Skills and Techniques of Elementary Activities	2

Secondary (total of 48 hours)

PE	246	Skills and Techniques of Softball, Bowling, Handball or Racquetball	2
PE	248	Skills and Techniques of Badminton and Archery	1
PE	250	Skills and Techniques of Recreational Sports	2

K-12 (total of 50 hours) All courses listed above.

The following schedule is typical for the physical education major who wishes to be certified to teach kindergarten through twelfth grade.

Freshman Year			**Credits**
BIOL	162	Personal Health	3
ED	102	Teaching as a Career	1
ED	202	Fundamentals of Education	3
ENG	110, 211	Composition I and II	6
MATH	120	Intermediate Algebra	4
PE	232	First Aid	2
PE	248	Skills and Tech of Badminton and Archery	1
PSYCH	101, 102	General Psychology I and II	6
RDG	120	Developmental Reading	2
SPCOM	101	Basic Speech Communication	2
		General Education	5
			35

Sophomore Year			**Credits**
BIOL	221/221L	Human Anatomy and Physiology	4
ED	210	Human Growth and Development for Educators	3
PE	233	Introduction and History of HPE and R	3
PE	235	Principles of Physical Education	2
PE	242	Skills and Tech of Percept. Motor Trng.	3
PE	243	Skills and Tech. of Rhythmic Activities	1
PE	244	Skills and Tech. Soccer, Volleyball, Track and Basketball	3
PE	245	Skills and Tech. Wgt. Trng., Circt. Trng., Self-Defense	2
PE	246	Skills and Tech. Softball, Bowling and Racquetball	2
PE	247	Skills and Tech. Gymnastics, Tumbling and Apparatus	2
PE	249	Skills and Tech. of Elementary Activities	2
PE	250	Skills and Tech. of Recreation Sports	2
PE	289L	Student Assistant	1
SPCOM	211	Public Speaking	2
			32

Junior Year			**Credits**
BBE	363	Multicultural Education	2
ED	435	Classroom Management	4
IED	345	Career Education	2
PE	322	Elementary School Physical Education	2
PE	342	Training Room Methods	2
PE	343	Tests and Measurements in Physical Ed	2
PE	364	Kinesiology	2
PE	378	Principles and Techniques of Teaching PE	2
PE	389L	Student Assistant	1
PSYCH	351	Psychology of the Exceptional Individual	3
RDG	201	Teaching and Language Arts in Elem. School	4
		General Education	6
			32

Senior Year			Credits
ED	460	Education Lab	3
ED	489	Student Teaching K-12	15
PE	442	Physiology of Exercise	2
PE	451	Officiating	2
PE	461	Organization and Administration of HPE & R	3
PE	465	Adaptive Physical Education	2
PE	471, 472 473, 474 482, 483	Coaching (Select two courses)	4
			31

Variations of this schedule exist for physical education major tracks kindergarten through sixth grade and seventh through twelfth grade. The assigned adviser informs the students of these differences.

MINOR

The requirements for the minor consist of a minimum of 20 hours in physical education courses which must be approved by the student's adviser and the head of the program.

PE COURSES

UNDERGRADUATE

PE 100 Physical Education Orientation 2(1-1)
Survey course with emphasis on lecture and minimal laboratory experience to acquaint the student with basic knowledge and understanding of physical education activities.

PE 101L Basketball 1(0-2)

PE 102L Flag Football 1(0-2)

PE 107L Scuba Diving 1(0-2)

PE 108L Windsurfing 1(0-2)

PE 109L Volleyball 1(0-2)

PE 110L Weight Training 1(0-2)

PE 114L Self Defense 1(0-2)

PE 116L Camping 1(0-2)

PE 117L Backpacking 1(0-2)

PE 118L Jogging 1(0-2)

PE 120L Rhythmic Aerobics 1(0-2)

PE 153L Figure Fixers 1(0-2)

PE 167L Bowling 1(0-2)

PE 173L Social Dance 1(0-2)

PE 174L Tennis 1(0-2)

PE 175L Racquetball 1(0-2)

PE 176L Advanced Life Saving 1(0-2) Prerequisite Swimming pre-test.

PE 178L Karate 1(0-2)

PE 179L Intercollegiate Gymnastics 2(0-15)

PE 180L Intercollegiate Volleyball 2(0-15)

PE 181L Intercollegiate Baseball 2(0-15)

PE 182L Intercollegiate Basketball 2(0-15)

PE 183L Intercollegiate Cross Country 2(0-15)

PE 184L Intercollegiate Football 2(0-15)

PE 185L Intercollegiate Golf 2(0-15)

PE 186L Intercollegiate Tennis 2(0-15)

PE 187L Intercollegiate Track and Field 2(0-15)

PE 188L Elementary Physical Conditioning 2(0-15)

PE 199L Intercollegiate Wrestling 2(0-15)

PE 204L Fitness for Life 2(0-4)
Physical fitness information and training for life. Extensive physical fitness activities; emphasis on cardiovascular adaptation.

PE 231 Cardiopulmonary Resuscitation 1(1-0)
Technique of applying a combination of artificial respiration and artificial circulation in the event cardiac arrest occurs.

PE 232 First Aid 2(2-0)
Knowledge and skills in the latest approved first aid procedures. Advanced Red Cross certification.

PE 233 Introduction and History of HPE and R 3(3-0)
History and philosophies of physical education and recreation and their influences upon contemporary American society.

PE 235 Principles of Physical Education 2(2-0)
Analysis of the scientific principles and contemporary problems faced by the modern physical education instructor.

PE 242 Skills and Techniques of Teaching Perceptual Motor and Self Testing Activities 3(3-0)
Techniques of teaching of elementary physical education activities designed to develop perceptual-motor competency.

PE 243 Skills and Techniques of Teaching Rhythmic Activities 1(1-1)
Fundamentals of folk, square and social dance; emphasis on the teaching techniques involved in basic dance styles and rhythms.

PE 244 Skills and Techniques of Teaching Soccer, Volleyball, Track and Basketball 3(3-0)
Basic skills and techniques of basketball, soccer, volleyball, track and field; emphasis on organization and teaching procedures of these activities.

PE 245 Skills and Techniques of Teaching Weight Training, and Self Defense 2(2-0)
Basic skills and techniques of self defense, weight training and circuit training; emphasis on teaching procedures.

PE 246 Skills and Techniques of Teaching Softball, Bowling, Handball or Racquetball 2(2-0)
Basic skills and techniques of softball, bowling, handball, or racquetball; emphasis on planning, organization and teaching procedures.

PE 247 Skills and Techniques of Teaching Tumbling, Gymnastics and Apparatus Activities 2(2-0) Prerequisite PE 154.
Basic skills and techniques of tumbling, gymnastics and apparatus activities; emphasis on spotting and teaching procedures.

PE 248 Skills and Techniques of Teaching Badminton and Archery 1(1-0)
Techniques of teaching basic skills and badminton and archery; consideration of equipment, organization and strategy.,

PE 249 Skills and Techniques of Teaching Elementary Activities 2(2-0)
Low organization games and enrichment activities appropriate for the elementary and physical education curriculum; emphasis on teaching procedures.

PE 250 Skills and Techniques of Teaching Recreation Sports 2(1-2) Prerequisite PE 174L.
Skills and techniques of golf and tennis; emphasis on organization and teaching procedures in these activities.

PE 276L Water Safety Instructor Certification 2(0-2) Prerequisite Advanced Life Saving.
Water safety instruction certification may be earned in this course.

PE 279L Intercollegiate Gymnastics 2(0-15)

PE 280L Intercollegiate Volleyball 2(0-15)

PE 281L Intercollegiate Baseball 2(0-15)

PE 282L Intercollegiate Basketball 2(0-15)

PE 283L Intercollegiate Cross Country 2(0-15)

PE 284L Intercollegiate Football 2(0-15)

PE 285L Intercollegiate Golf 2(0-15)

PE 286L Intercollegiate Tennis 2(0-15)

PE 287L Intercollegiate Track and Field 2(0-15)

PE 288L Advanced Physical Conditioning 2(0-15)

PE 289L Student Assistant 1(0-2)

PE 291L Special Topics (1-5 VAR)
Specific and unique topics not part of the continuing curriculum.

PE 299L Intercollegiate Wrestling 2(0-15)

PE 322 Elementary School Physical Education 2(2-0)
Mental, emotional, social and physical needs of elementary school age children; planning programs, selecting materials and methods of teaching physical education at this level.

PE 342 Training Room Methods 2(2-0) Prerequisite BIOL 221, 221L.
Procedures utilized in prevention, care and treatment of athletic injuries.

PE 343 Tests and Measurements in Physical Education 2(2-0)
Modern testing programs in physical education; emphasis on preparation and administration of both written and skills tests.

PE 364 Kinesiology 2(2-0) Prerequisite BIOL 221, 221L.
Fundamental body movements and the primary muscles involved in those movements.

PE 378 Principles and Techniques of Teaching Physical Education Activities 2(2-0) Prerequisite Acceptance into department of teacher education.
Classroom course used to identify and examine methods in teaching of physical education activities.

PE 389L Student Assistant 1(0-2) Prerequisite PE 289L.

PE 442 Physiology of Exercise 2(2-0) Prerequisite BIOL 221,221L.
Effects of muscular activity on the various organs and systems of the body; an analysis of intramuscular and extramuscular adaptations which occur with training.

PE 451 Officiating 2(2-0)
General principles and philosophies of officiating and the mechanics involved in the officiating of interscholastic sports.

PE 461 Organization and Administration of HPE and R 3(3-0)
Organizational and administrative processes necessary for the responsible conduct of physical education, recreational activities and interscholastic athletics.

PE 465 Adaptive Physical Education 2(2-0) Prerequisite BIOL 221, 221L.
Remedial and corrective programs in physical education; emphasis on diseases and injuries which cause individuals to require special attention above and beyond the regular physical education program.

PE 471 Coaching of Football 2(2-0)
Techniques and strategy of coaching football.

PE 472 Coaching of Basketball 2(2-0)
Techniques and strategy of coaching basketball.

PE 473 Coaching of Track, Field and Cross Country 2(2-0)
Techniques and strategy of coaching track and field.

PE 474 Coaching of Gymnastics 2(2-0)
Techniques and strategy of coaching gymnastics.

PE 482 Coaching of Wrestling 2(2-0)
Techniques and strategy of coaching wrestling.

PE 483 Coaching of Baseball 2(2-0)
Techniques and strategy of coaching baseball.

PE 491 Special Topics (1-5 VAR)
Study and/or activity designed to increase understanding in areas not covered by regular offerings of the department. (S/U grades.)

PE 494 Field Experience (1-5 VAR) Prerequisite Approval of program head.
Learning experience to be conducted in the actual environment and supervised by the physical education program. (S/U grades.)

PE 495 Independent Study (1-5 VAR) Prerequisite Approval of program head.
Individual research, directed reading and/or special assignments under supervision of a member in the department.

GRADUATE

PE 500 Workshop (1-5 VAR) Prerequisite Approval of program head.
Graduate learning experience in physical education offered in large blocks of time not corresponding to the weekly meeting times of the regular course offerings.

PE 522 Elementary School Physical Education 2(2-0) Prerequisite Graduate standing.
Advanced course of mental, emotional, social and physical needs of elementary school age children; emphasis on planning programs, selecting materials and methods of teaching physical education at this level.

PE 591 Special Topics (1-5 VAR) Prerequisite Approval of program head.
Graduate level study and/or activity designed to increase understanding in areas not covered by regular offerings of the department.

PHYSICS/PHYSICAL SCIENCE

Faculty: Bard, Graham, Spenny, Watkins

The program in physics/physical science offers courses leading to the bachelor of science (BS) degree in physics and provides supporting courses and general education courses in physics and physical science for students with a wide spectrum of interests, backgrounds and needs. Anyone considering a program in physics should consult with a departmental adviser as early as possible to discuss options, career objectives and course scheduling. A detailed plan of study must be worked out and approved by the department no later than the start of the junior year.

Students graduating with a BS in physics must have at least a 2.0 grade point average in the major area of study and no more than four credits in the major with grades of D. Students graduating with a minor in physics must have at least a 2.0 grade point average in physics. A 2.5 grade point average in the major area is required for admission to the teacher education program.

Students must have earned a C or better grade in lower division prerequisite courses before being admitted to upper division courses in physics.

MAJORS

The bachelor of science degree in physics is offered with several options, as follows:

I. Physics/engineering option
For students planning to enter positions in industry upon graduation. Courses in engineering and technical electives enhance the utility of the graduate to potential employers. **Requirements** include 32 or 33 credits in physics (PHYS 221, 221L, 222, 222L, 301, 321, 322, 323, 323L, 341, 342, 431, 492), 32-38 credits in engineering and technical courses, **plus** supporting courses in mathematics and chemistry.

II. Physics option
Primarily for students planning graduate study toward a professional career in physics, astronomy or other related fields. **Requirements** include 39 credits in physics (PHYS 221, 221L, 222, 222L, 301, 321, 322, 323, 323L, 341, 342, 431, 432, 441, 480, 492, 493) **plus** supporting courses in mathematics (including at least one course from among MATH 307, 338, 425) and chemistry.

III. Physics/Options in chemical physics, biophysics, or mathematical physics.
Designed to meet specific career objectives for an individual. **Requirements** include 32 credits in physics and 32 credits in chemistry, biology or mathematics, as well as approval by the department.

IV. Physics/secondary teaching option
Provides the student with the knowledge and skills necessary to obtain Colorado Department of Education certification as a secondary science teacher. **Requirements** include 34 credits in physics (PHYS 110, 221, 221L, 222, 222L, 301, 321, 323, 323L, 341, 342, 431, 432, 493), supporting courses in mathematics, geology, biology and chemistry, **plus** education courses needed for teacher certification. Dr. Eugene D. Bard is the program adviser.

Under Options I, II, III, and IV the recommended sequences of courses presume that the student is ready to begin MATH 126 in the first semester of the freshman year. If not, MATH 124 should be taken in the Fall and MATH 126 in the Spring of the freshman year concurrently with PHYS 221. Otherwise it may not be possible to complete the requirements for a physics degree within four years. Students, especially transfers, who do not strictly adhere to the plan of study may find that their term of attendance at USC will be extended beyond four years.

V. Physics/physical science secondary teaching option.
Normally a teacher certification program. **Requirements** include 62 credits in physical science and supporting courses including PHYS 110, 201, 201L, 202 and 202L; GEOL 101, 123 and 204; CHEM 121, 121L, 122 and 122 L; BIOL 121, 162, 191 and 191L; MATH 126 (or 221) and 240; **and** fourteen additional credits in one of the physical sciences. Appropriate courses in education and PHYS 377 are required for certification. Dr. Eugene D. Bard is the program adviser.

A typical physics schedule is:

Freshman Year			**Credits**
CHEM	121/121L	General Chemistry I and Lab	5
CHEM	122/122L	General Chemistry II and Lab	5
ENG	110, 211	Composition I and II	6
MATH	126	Calculus and Analytic Geometry I	5
MATH	224	Calculus and Analytic Geometry II	5
PHYS	221/221L	General Physics I and Lab	5
		Courses in chosen option	5
			36

Sophomore Year			**Credits**
MATH	325	Intermediate Calculus	4
MATH	337	Differential Equations I	3
PE	100	PE Orientation	2
PHYS	222/222L	General Physics II and Lab	5
PHYS	323/323L	General Physics III and Lab	5
RDG	120	College Reading	2
SPCOM	101	Expository Speaking	2
Group	I	Humanities	3
		Courses in chosen option	10
			36

Junior Year			Credits
PHYS	301	Theoretical Mechanics	4
PHYS	321	Thermodynamics	3
PHYS	322	Advanced Laboratory-Heat	1
PHYS	341	Optics	3
PHYS	342	Advanced Laboratory-Optics	1
Group	II	Social Sciences	7
		Courses in chosen option and/or electives	15
			34

Senior Year			Credits
PHYS	431	Electricity and Magnetism	4
PHYS	432	Advanced Laboratory-Electricity and Magnetism	4
PHYS	480	Practicum in Laboratory Instruction	1
PHYS	492	Research	1
Group	I	Humanities	7
Group	II	Social Sciences	3
		Chosen option and/or electives	15
			35

MINORS

Physics minor			Credits
PHYS	221/221L	General Physics I	5
PHYS	222/222L	General Physics II	5
PHYS	323/323L	General Physics III	5
		Additional credits in physics from courses numbered 301 or higher	5

NOTE: To satisfy prerequisites for courses required for the physics minor, it is necessary to complete the following courses: MATH 126, 224, 325 and 337.

Physical science minor. The physical science minor requires 24 credits selected from the following courses:

PHYS 100, 110, 201/201L, 202/202L, 361; CHEM 111/111L, 205/205L; GEOL 101, 123; MATH 240 and 241. Other courses may be substituted with the approval of the program adviser.

PHYS COURSES

UNDERGRADUATE

PHYS 100 Physical Science 3(2-2)
Hands-on approach to developing a citizen's understanding of the basic concepts of contemporary physical science. Integrated lecture, lab, discussion periods. GEN. ED. IIIF.

PHYS 101 Fundamentals of Physics 1(1-0)
The strategy and technique of physics problem solving emphasizing vectors, error analysis, Fermi approximations and the mathematical treatment of data.

PHYS 110 Elementary Descriptive Astronomy 3(3-0)
Solar system, including motions of the planets, eclipses, and satellite exploration; classification and evolution of stars; clusters, nebulae, galaxies and the expanding universe. GEN. ED. IIIF.

PHYS 121 Physics for the Life Sciences 3(3-0) Prerequisite MATH 105 or equivalent. Corequisite PHYS 121L.
Forces, motion, energy, properties of matter, heat, sound, light, electricity and magnetism, and atomic and nuclear physics. For students in the life and health sciences and others who require only a one-semester introductory physics course. GEN. ED. IIIF.

PHYS 121L Physics for the Life Sciences Lab1(0-2) Corequisite PHYS 121.
A laboratory course to accompany PHYS 121. GEN. ED. IIIF.

PHYS 130 Physics for Everybody I: Solar Energy 1(1-0)
A five-week, single topic mini-course designed for students not majoring in science. GEN. ED. IIIF.

PHYS 131 Physics for Everybody II: Lasers 1(1-0).
A five-week, single topic mini-course designed for students not majoring in science. GEN. ED. IIIF.

PHYS 132 Physics for Everybody III: Einstein 1(1-0).
A five-week, single topic mini-course designed for students not majoring in science. GEN. ED. IIIF.

PHYS 201 Principles of Physics I 3(3-0) Prerequisite MATH 120 or equivalent. Corequisite PHYS 201L.
Motion, forces, conservation of energy and momentum, wave motion, sound and heat. For engineering technology, life sciences, and other interested students. GEN. ED. IIIF.

PHYS 201L Principles of Physics Lab I 1(0-2) Corequisite PHYS 201.
A laboratory course to accompany PHYS 201. GEN. ED. IIIF.

PHYS 202 Principles of Physics II 3(3-0) Prerequisite PHYS 201. Corequisite PHYS 202L.
Electrostatics, electromagnetism, light, atomic and nuclear physics. GEN. ED. IIIF

PHYS 202L Principles of Physics Lab II 1(0-2) Corequisite PHYS 202.
A laboratory course to accompany PHYS 202. GEN. ED. IIIF.

PHYS 221 General Physics I 4(4-0) Prerequisite or Corequisite MATH 126. Corequisite PHYS 221L.
Newtonian mechanics, including linear and rotational dynamics, momentum, energy, gravitation, fluid mechanics, wave motion and thermodynamics. Uses the calculus and vector notation. For majors in physics, mathematics, geoscience, engineering and chemistry. GEN. ED. IIIF.

PHYS 221L General Physics Lab I 1(0-2) Corequisite PHYS 221.
A laboratory course to accompany PHYS 221. GEN. ED. IIIF.

PHYS 222 General Physics II 4(4-0) Prerequisite PHYS 221. Corequisite PHYS 222L.
Electrostatics, electromagnetism, elementary circuits, electrical oscillations, geometrical optics and the wave aspects of light. GEN. ED. IIIF.

PHYS 222L General Physics Lab II 1(0-2) Corequisite PHYS 222.
A laboratory course to accompany PHYS 222. GEN. ED. IIIF.

PHYS 291 Special Topics (1-4 VAR)
Meets the needs of special interest groups. Content and credit must be approved by the department. Offered on demand.

PHYS 301 Theoretical Mechanics 4(4-0) Prerequisite PHYS 222, MATH 325 and MATH 337.
Statics and dynamics of particles and rigid bodies. Conservation principles, minimum principles, accelerated coordinate systems, Lagrangian and Hamiltonian methods, vector and matrix methods.

PHYS 321 Thermodynamics 3(3-0) Prerequisite PHYS 221.
Introduction to thermodynamic laws and principles, entropy, kinetic theory and statistical mechanics.

PHYS 322 Advanced Laboratory-Heat 1(0-2) Prerequisite or Corequisite PHYS 321.
Experiments in heat of combustion, heat transfer, thermal electromotive force, viscosity, and specific heat measurements.

PHYS 323 General Physics III 4(4-0) Prerequisite PHYS 222/222L and MATH 224. Corequisite PHYS 323L.
Introduction to special relativity, kinetic theory, quantization, wave mechanics, atomic structure and spectroscopy.

PHYS 323L General Physics Lab III 1(0-2) Corequisite PHYS 323.
A laboratory course to accompany PHYS 323.

PHYS 341 Optics 3(3-0) Prerequisite PHYS 222/222L and MATH 325.
Geometrical optics, interference, diffraction, polarization of light, optical properties of materials, optical sources including lasers, and holography.

PHYS 342 Advanced Laboratory-Optics 1(0-2) Prerequisite or Corequisite PHYS 341.
Experiments in interference, diffraction, absorption, spectral characteristics and polarization of light.

PHYS 361 Physics of Sound 3(3-0) Prerequisite MATH 105 or equivalent.
Sound waves, sources of sound, physics of hearing, acoustical measurements. For speech correction majors and other interested students.

PHYS 377 Materials and Techniques of Teaching Physics/Physical Science 2(2-0)
Instruction and experience in preparing for and conducting discussion sessions and laboratory exercises in secondary school physics/physical science.

PHYS 431 Electricity and Magnetism 4(4-0) Prerequisite PHYS 222/222L, MATH 325 and 337.
Mathematical treatment of electrostatics, currents, magnetism, electromagnetic induction, Maxwell's equations and electrodynamics.

PHYS 432 Advanced Laboratory-Electricity and Magnetism 1(0-2) Prerequisite or Corequisite PHYS 431.
Experiments in electrostatic constants, magnetic effects, capacitance, thermoelectric effects, magnetic properties, inductance, mutual inductance, and production, propagation and diffraction of microwaves.

PHYS 441 Quantum Mechanics 4(4-0) Prerequisite PHYS 323/323L, MATH 325 and 337.
Wave packets, operators, the Schroedinger equation, eigenstates, angular momentum, spin, magnetic moments, Heisenberg formulation.

PHYS 480 Practicum in Laboratory Instruction 1(0-2)
Participation in laboratory instruction under the guidance of a staff member. May be repeated for a maximum of two credits.

PHYS 491 Special Topics (1-4 VAR)
Meets the needs of special interest groups. Content and credit must be approved by the department. Offered on demand.

PHYS 492 Research 1(0-2) Prerequisite Eight credits in upper division physics courses.
The student conducts research under the guidance of a staff member. May be repeated for a maximum of two credits.

PHYS 493 Seminar 1(1-0) Prerequisite Advanced standing with a major or minor in physics.
Class members report on recently published work or on their own research in physics or applied physics. May be repeated for a maximum of two credits.

PHYS 495 Independent Study (1-2 VAR)
For academically strong juniors and seniors only. Each student must choose a supervising professor and obtain approval by the department.

GRADUATE

PHYS 501 Science for Elementary Teachers 3(3-0)
Seminar/Laboratory course emphasizing elementary school science pedagogy; includes new science programs, utilization of teaching materials, program implementation.

POLITICAL SCIENCE

Faculty: Eberling, Love

The political science program offers the degrees of bachelor of arts (BA) and bachelor of science (BS). The program is designed to prepare individuals at the undergraduate level for careers in law, government and politics. Courses comprising the undergraduate major in political science also serve to complement the liberal arts core at USC and to prepare students for entry into graduate programs leading toward professional courses in law or administration or toward specialized academic degrees.

MAJOR

The political science major **requires** 36 hours as approved by the adviser in political science including POLSC 101, 201 or 202, 210, 370 and 493.

Electives are selected in accordance with one of five basic course orientations in political science: 1) preparation for a career in public service, 2) legal assistant training, 3) political party and interest group activity, 4) graduate school preparation or 5) law school preparation.

Pre-law and legal assistant sequences. The pre-law students and students wishing to receive certification as legal assistants are advised to consult the program adviser, Kathleen Eberling, J.D., phone 549-2538.

Program recommendations include either one year of foreign language or courses in statistics, depending on the student's interests and goals.

MINOR

The political science minor is available to support majors in various areas. Twenty-one hours in political science, including POLSC 101, 201 or 202 are required.

A typical political science schedule is:

Freshman Year			**Credits**
ENG	110, 211	Composition I and II	6
POLSC	100	Level Electives	3
POLSC	101	American National Politics	3
POLSC	210	Techniques of Analysis	3
RDG	120	College Reading	2
		General Education	12
			29

Sophomore Year			**Credits**
POLSC	201	Comparative Politics	3
	or		
POLSC	202	Politics of Developing Nations	3
POLSC	200 or 300	Level Electives	6
		General Education	18
		Other Electives	6
			33

Junior Year			Credits
POLSC	300 or 400	Level Electives	9
		General and Upper Division Electives	23
			32

Senior Year			Credits
POLSC	370	Political Thought	3
POLSC	493	Seminar	3
POLSC	400 level	Electives	3
		General and Upper Division Electives	23
			32

POLSC COURSES

POLSC 100 The Study of Politics 3(3-0)
Contemporary political-economic systems and the ideologies which support them. GEN. ED. IIC.

POLSC 101 American National Politics 3(3-0)
Basic processes in American politics. Principles and structure of national government. GEN. ED. IIC.

POLSC 102 State and Local Government and Politics 3(3-0)
Behavioral aspects, government organization and interrelationships of state and local politics, relations with federal government and other states. Special attention to Colorado government. GEN. ED. IIC.

POLSC 104 You and the Law 1(1-0)
A mini-course intended for students who desire to understand the American legal system for purposes of personal utilization. GEN. ED. IIC.

POLSC 150 The Human Experience 3(3-0)
Human efforts to organize societal activity and relationships for group development and survival through political, economic, and social institutions. GEN. ED. IIC.

POLSC 185 Research in History 1(1-0)
Techniques and skills used in evaluating historical data. GEN. ED. IIC.

POLSC 201 Comparative Politics 3(3-0)
Introduction to comparative political analysis through study of selected political systems. Emphasis on basic political function and processes in developed countries. GEN. ED. IIC.

POLSC 202 Politics of Developing Nations 3(3-0)
Comparison of basic political features, problems of political development with political implications of socio-economic changes in transitional systems of the non-Western world. GEN. ED. IIC.

POLSC 210 (SOCAN/SW 210) Techniques of Analysis 3(3-0)
Introduction to the methods of scientific investigation in the social sciences.

POLSC 250 International Relations 3(3-0)
Analysis of international political behavior and organization. Comparison of national power, goals, and politics. GEN. ED. IIC.

POLSC 291 Special Topics (1-3 VAR)
Independent study involving research and seminars.

POLSC 301 Political Parties and Pressure Groups 3(3-0) Prerequisite Previous work in political science.
History, organization and functions of party politics and pressure group activity with special emphasis on American political processes.

POLSC 302 Public Opinion and Elections 3(3-0)
Analysis of forces shaping socio-political attitudes. Basic techniques used to measure and manage these attitudes. Expression in voting behavior and patterns.

POLSC 320 Legal Research Methods 2(2-0)
Introduction to the basic reference materials of legal research. Use of law libraries, interpretation of statutes and judicial decisions, and preparation of legal memoranda.

POLSC 321 (HIST 321) American Constitutional Development 3(3-0) Prerequisite POLSC 101 or HIST 202.
Origin, development, broadening of the American Constitution by legal decisions, customs, political parties, executive agreements, legislative interpretation.

POLSC 322 American Constitutional Law 3(3-0) Prerequisite POLSC 101.
Intensive survey of American constitutional law; major Supreme Court decisions and the development of basic constitutional principles.

POLSC 323 Criminal Law and Procedure 3(3-0) Prerequisite POLSC 101.
Content and characteristics of criminal law and procedures. Roles and functions of persons and agencies involved in judicial administration.

POLSC 324 Family Law 3(3-0) Prerequisite POLSC 101, 320.
Survey of legal issues concerning domestic relations; Supreme Court decisions and legislative enactments.

POLSC 330 Introduction to Public Service 3(3-0)
Role of public bureaucracy in modern society. Principles and processes of public administration, personnel management and administrative responsibility.

POLSC 340 Public Policy Evaluation 2(2-0) Prerequisite POLSC 330.
Problems of public policy analysis in decision-making processes. Techniques of assessing policy alternatives toward selection of effective governmental programs.

POLSC 350 The American Presidency 3(3-0)
The office, powers and politics of the American presidency — the key institution in American government.

POLSC 360 Urban Government and Politics 2(2-0)
Growth of metropolitan areas and their legal status. Municipal politics and organizations as related to contemporary problems in personnel, finance and general welfare areas.

POLSC 370 Political Thought 3(3-0) Prerequisite Previous work in political science or philosophy.
Systematic survey of political thought from beginnings in Ancient Near East to present. Emphasis on contributions relevant to contemporary political theory.

POLSC 411 Legislatures and Legislation 3(3-0)
Organization, function, and process of American legislatures at national, state and local levels. Party organization, legislative procedures, lobbying and legislative reorganization.

POLSC 421 Public Organization and Management 3(3-0)
Functions of public administrators; theory and practical application of management and organization concepts; development skills in analyzing organizational and management systems in public agencies.

POLSC 435 Micropolitics 2(2-0)
Application of behavioral methodology to understanding of individual political behavior within government. Impact and modification of attitudes in relation to decision-making processes.

POLSC 461 Political Geography 2(2-0)
Factors affecting the physical basis of national power, constituent elements of the state, environmental determiners of national policy and relations.

POLSC 473 American Political Thought 2(2-0)
Development of American segment of modern political thought from colonial times to present. Interrelationship of individuals, ideas and institutions shaping modern American political responses.

POLSC 480 Practicum in Politics and Public Service (6-12 VAR)
For advanced students. Practical experience as interns in governmental agencies or political parties or interest groups. Research thesis program on an individual basis.

POLSC 491 Special Topics (1-3 VAR) Prerequisite Junior or senior status with adequate preparation and approval of instructor.
Independent study involving seminars and research.

POLSC 492 Research (1-3 VAR)
Analysis of the research process.

POLSC 493 Seminar (1-3 VAR)
Application of research methods and materials. Emphasis on in-depth study of specific political topics. Involves writing and discussion of research papers at advanced level.

POLSC 496 Cooperative Education Placement (1-4 VAR) Prerequisite Permission of instructor.
Arrangement between employers and faculty members to provide students with an opportunity to earn academic credit and monetary reimbursement for on-the-job training in their field of study. Two placements must occur in academic semesters and one in a summer session for the equivalent of at least 12 months employment. Students must re-enroll each placement term. Twelve credits maximum allowed toward graduation.

PSYCHOLOGY

Faculty: Cameron, Gardner, Hearn, R. Krinsky, S. Krinsky, Kulkosky, Madrid, Megenity, Mo, Post-Gorden, Schnur

The program in psychology offers courses leading to the degrees of bachelor of arts (BA) and bachelor of science (BS). An extensive curriculum allows the student to emphasize a variety of specialties within the field. The program is housed in a modern facility with extensive teaching and research laboratories. Several of the psychology faculty are actively involved in a variety of research projects and interested students are invited to participate in the research process.

The Psychology building also houses the Student Development Center and offers a variety of psychological services to students. Psychology majors use the facility to gain experience in a wide variety of psychological techniques.

MAJOR

The bachelor's degree program in psychology is designed to prepare students either to enter the workplace or to continue their studies at the graduate level. Although employment opportunities exist with the bachelor's degree, students who wish to function as professional psychologists should seriously consider further graduate training. The doctoral degree is generally considered the appropriate terminal degree in psychology.

The psychology major consists of a minimum of 35 semester credit hours, of which 14 are required and 21 are considered electives.

A typical psychology schedule is:

Freshman Year			**Credits**
ENG	110, 211	Composition I and II	6
*PSYCH	101	General Psychology	3
RDG	120	College Reading	2
SPCOM	101	Expository Speaking	2
		General Education	10
		General Electives	9
			32

Sophomore Year			**Credits**
*PSYCH	201/201L	Data Analysis	4
		General Education	14
		General Electives	8
		PSYCH Electives	6
			32

Junior Year			**Credits**
*PSYCH	301/301L	Experimental Psychology	4
Group	II	Social Science	3
Group	III	Natural Sciences	4
		General Electives	15
		PSYCH Electives	6
			32

Senior Year			**Credits**
*PSYCH	401	History and Systems	3
		General Electives	20
		PSYCH Electives	9
			32

*Required for all majors.

However, students are encouraged to individualize their psychology major by selecting one of three emphasis areas: educational psychology, mental health, or the biobehavioral emphasis. A faculty adviser will provide the list of courses for the required 15 credit hours. The completed emphasis area will appear on the student's transcript.

A maximum of six credit hours of Independent Study (PSYCH 295/495) and/or Field Placement (PSYCH 494) can be applied toward the psychology major.

MINOR

A minor in psychology requires a minimum of 20 semester credit hours, of which 9 hours must be 300/400 level courses. PSYCH 101 is required for the minor. Psychology credits in Practicum in Individualized Instruction (PSYCH 240/440), Cooperative Education Placements (PSYCH 496) and Field Experience (PSYCH 497) do not count toward the psychology minor. A maximum of 3 credits in Individual Projects (PSYCH 295/495) may count toward the minor if the project undertaken is research based.

Students wishing to minor in psychology must have a minor adviser for the sequence of courses to be taken.

PSYCH COURSES

UNDERGRADUATE

PSYCH 101 General Psychology 3(3-0)
Overview of the field of psychology including learning, perception, motivation, emotion, heredity, personality, development, abnormal and psychotherapy. GEN. ED. IIA.

PSYCH 101L General Psychology Lab I 1(0-2) Corequisite PSYCH 101.
Laboratory exercises utilizing active student involvement in the topics covered in General Psychology I. GEN. ED. IIA.

PSYCH 110 Improving Memory 2(2-0)
Practical guide to understanding and improving memory. Emphasis on the application of mnemonic techniques for memory improvement. Laboratory exercises designed to increase memory ability. GEN. ED. IIA.

PSYCH 120 Understanding Animal Behavior 2(2-0)
Basic comparative and ethological perspectives regarding animal behavior. Scientific techniques for field observation of animal behavior are demonstrated on campus with residential wildlife. GEN. ED. IIIA.

PSYCH 130 Psychology of Everyday Life 2(2-0)
Application of psychological principles to everyday problems including stress, coping, self-control, interpersonal relations, friendship and marriage, interpersonal communication and attraction, psychological disorders, etc. GEN. ED. IIA.

PSYCH 151 Introduction to Human Development 3(3-0)
Survey of human development through life span. GEN. ED. IIA.

PSYCH 201 Data Analysis 3(3-0) Prerequisite PSYCH 101 and MATH 120 or equivalent.
Descriptive and inferential statistics including t-tests, analysis of variance, regression analysis and chi square.

PSYCH 201L Data Analysis Lab 1(0-2) Corequisite PSYCH 201.
Laboratory course to accompany PSYCH 201.

PSYCH 205 Sports Psychology 2(2-0)
How important psychological constructs such as learning, motivation, personality, arousal and cognition affect performance in sports and athletics.

PSYCH 211 Women and Society 3(3-0)
Statistical overview of the current status of women, followed by examination of theories concerning equality of the sexes. GEN. ED. IIA.

PSYCH 212 Sexism and Racism in America 3(3-0)
Dynamics of prejudice and discrimination in terms of sex and race; special attention to analysis of strategies for improving relations. GEN. ED. IIA.

PSYCH 220 Drugs and Behavior 2(2-0)
Use and misuse of drugs; analysis of causes of drug abuse. Different treatment modalities used in cure of drug abuse. GEN. ED. IIA.

PSYCH 221 Psychology of Creativity 2(2-0)
Creative behavior from a variety of approaches. Criteria for identifying creative processes and methods for fostering and developing creative behaviors. GEN. ED. IIA.

PSYCH 231 Psychology of Family Behavior 2(2-0)
A consideration of the unique features of the family at each of the developmental life cycle stages. Special attention will be given to the interaction between family behavior and individual characteristics of its members. GEN. ED. IIA.

PSYCH 240 Practicum in Individualized Instruction 2(0-4) Prerequisite PSYCH 101, and permission of instructor.
Individualized systematic learning techniques by serving as learning assistant to professional staff members.

PSYCH 241 Human Sexuality 2(2-0) Prerequisite Sophomore standing, permission of instructor.
Psychological and biological aspects of human sexual behavior.

PSYCH 242 Applied Human Learning 2(2-0) Prerequisite PSYCH 101.
Contemporary learning theories including social, behavioral, cognitive, gestalt and hemispheric processing. Application to home, school, business and industry.

PSYCH 251 Psychology of Infancy and Childhood 3(3-0) Prerequisite PSYCH 101, sophomore standing.
Physical, mental, social and emotional growth of the individual from conception through childhood.

PSYCH 252 Pre-Adolescent and Adolescent Psychology 3(3-0) Prerequisite PSYCH 101, sophomore standing.
Physical, mental, social and emotional growth of the individual during transition from childhood to adulthood.

PSYCH 253 Psychology of Adulthood and Old Age 3(3-0) Prerequisite PSYCH 101, sophomore standing.
Topics include physical, intellectual, social and emotional development, marriage, family and emerging changes in sex roles and special problems associated with old age.

PSYCH 291 Special Topics 2(2-0) Prerequisite Permission of instructor.
Selected aspects of psychology with high interdisciplinary interest in response to specific service requests.

PSYCH 295 Independent Study (1-3 VAR) Prerequisite Psychology major or minor, prior written permission of instructor of record.
Student creates and carries out experimental design under instructor's directions. Team projects may be undertaken.

PSYCH 296 Cooperative Education Placement (1-4 VAR) Prerequisite Permission of instructor.
Arrangements between employers and faculty members to provide students with an opportunity to earn academic credit and monetary reimbursement for on-the-job training in their field of study.

PSYCH 301 Experimental Psychology 3(3-0) Prerequisite PSYCH 101, and 201. Corequisite PSYCH 333L.
Introduction to methods of data collection, behavioral measurement method. Relation between theory and data, research design, statistical analysis and experimental procedures.

PSYCH 301L Experimental Psychology Lab 1(0-2) Corequisite PSYCH 301.
Laboratory course to accompany PSYCH 301.

PSYCH 311 Theories of Personality 3(3-0) Prerequisite PSYCH 101.
Major theories of personality and the methods of personality investigation.

PSYCH 315 Organizational and Administrative Psychology 3(3-0) Prerequisite PSYCH 101.
Application of psychological principles and methods of selection, placement, evaluation, and motivation of personnel to work and to problems of human relations in business and industry.

PSYCH 331 Physiological Psychology 3(3-0) Prerequisite PSYCH 101, or BIOL 203, 204, or permission of instructor. Corequisite PSYCH 331L.
Structure and function of the brain, nervous and endocrine systems; biological basis of sensation, perception, sleep and arousal, motivation, learning and memory, and drug action.

PSYCH 331L Physiological Psychology Lab 1(0-2) Corequisite PSYCH 331.
Laboratory course to accompany PSYCH 331.

PSYCH 334 Perception 3(3-0) Prerequisite PSYCH 101, or permission of instructor. Corequisite PSYCH 334L.
The senses and how they cooperate with the brain to provide awareness and knowledge of the world about us. Empirical findings and theoretical analyses of the processes of seeing, hearing, tasting, smelling and touching. Role of learning in normal and illusory perception is considered.

PSYCH 334L Perception Lab 1(0-2) Corequisite PSYCH 334.
Laboratory course to accompany PSYCH 334.

PSYCH 335 Motivation 3(3-0) Prerequisite PSYCH 101. Corequisite PSYCH 335L or permission of instructor.
Goal-directed behavior, survey of biosocial approaches to motivation. Behavioral, cognitive and biological perspectives applied to eating, sexual behavior, aggression, affection and affiliation, obedience, achievement and cooperation.

PSYCH 335L Motivation Lab 1(0-2) Corequisite PSYCH 335.
Laboratory course to accompany PSYCH 335.

PSYCH 336 Learning 3(3-0) Prerequisite PSYCH 101. Corequisite PSYCH 336L or permission of instructor.
Principles of learning and memory. Empirical findings and theoretical analyses of diverse topics: including conditioning, reinforcement and punishment. Laboratory research and application.

PSYCH 336L Learning Lab 1(0-2) Corequisite PSYCH 336.
Laboratory course to accompany PSYCH 336.

PSYCH 337 Memory and Cognition 3(3-0) Prerequisite PSYCH 101.
Theory and research on current topics in cognition, including attention, concept formation, imagery, memory, decision making, language acquisition, problem solving and text comprehension.

PSYCH 337L Memory and Cognition Lab 1(0-2)
Laboratory experiments dealing with topics covered in PSYCH 337.

PSYCH 351 Psychology of the Exceptional Individual 3(3-0) Prerequisite PSYCH 101.
Survey of characteristics of those individuals considered significantly above or below the norm of the population. Emphasis on behavioral identification and modification of the home, school and social environment.

PSYCH 352 Social Psychology 3(3-0) Prerequisite PSYCH 101, or permission of instructor.
General and applied psychological principles of the person's interaction with the group.

PSYCH 362 Introduction to Psychopathology 3(3-0)
Etiology, diagnosis and therapy of maladaptive or abnormal behaviors and mental functioning.

PSYCH 381 Principles of Psychological Testing I 4(3-2) Prerequisite PSYCH 101, 201.
Theories and principles of psychological testing are applied to the selection, use and evaluation of available tests.

PSYCH 401 History and Systems of Psychology 3(3-0) Prerequisite PSYCH 101.
Influences that made contemporary psychology possible.

PSYCH 440 Practicum in Individualized Instruction 2(0-4) Prerequisite PSYCH 101, permission of instructor.
Individualized systematic learning techniques by serving as learning assistant to professional staff members.

PSYCH 463 Psychopathology of Childhood 3(3-0) Prerequisite PSYCH 101, 362 or equivalent.
A survey of the unique conceptual models of etiology, assessment, and therapy appropriate to the study of the psychological disorders of childhood.

PSYCH 464 Systems of Counseling and Psychotherapy 3(3-0) Prerequisite PSYCH 101, 311. Corequisite PSYCH 464L, or permission of instructor.
Traditional and contemporary theories of counseling and psychotherapy through use of case studies and other selected materials.

PSYCH 464L Systems of Counseling and Psychotherapy Lab 1(0-2) Corequisite PSYCH 464.
Laboratory course to accompany PSYCH 464.

PSYCH 465 Behavior Modification 3(3-0) Prerequisite PSYCH 101.
Advanced methods and techniques of behavior modification in clinical psychology as practiced in various agencies and institutions.

PSYCH 466 Psychology of Biofeedback 3(2-2) Prerequisite PSYCH 101.
Psychophysiological aspects in biofeedback. Theoretical and applied instrumentation and clinical use. Project and field work required.

PSYCH 471 Clinical Psychology 3(3-0) Prerequisite PSYCH 101, 311, 331, 362, 381, 464.
Survey of clinical psychology as a profession. Training requirements, opportunities, future directions, current research and ethical problems.

PSYCH 475 Group Process 3(3-0) Prerequisite PSYCH 464/464L.
Study and practice of basic group theory and approaches as they are applied in a mental health setting. Basic group therapeutic techniques and procedures will be demonstrated in an experiential setting.

PSYCH 484 Individual Assessment 3(3-0) Prerequisite PSYCH 101, 381, permission of instructor.
Continuation of PSYCH 381. A survey of major psychological assessment and diagnostic techniques including interviewing strategies. Intelligence and personality tests as well as clinical instruments and procedures will be utilized in a case study approach.

PSYCH 491 Special Topics 2(2-0) Prerequisite Permission of instructor.
Selected aspects of psychology in response to specific service requests.

PSYCH 493 Seminar 2(2-0) Prerequisite PSYCH 101, senior standing, psychology major or permission of instructor.
Discussion and synthesis of psychological issues important to psychology majors including graduate education and cross-discipline application.

PSYCH 494 Field Experience (4-12 VAR) Prerequisite PSYCH 101, prior written permission of instructor of record
In depth, on-the-job experience in psychology, individually designed. Ability to use psychological tests recommended.

PSYCH 495 Independent Study (1-3 VAR) Prerequisite PSYCH 101, psychology major, prior written permission of instructor of record.
Student creates and carries out experimental design under instructor's directions. Team projects may be undertaken.

PSYCH 496 Cooperative Education Placement (1-4 VAR) Prerequisite PSYCH 101, permission of instructor.
Arrangement between employers and faculty members to provide students with an opportunity to earn academic credit and monetary reimbursement for on-the-job training in their field of study. Two placements must occur in academic semesters and one in a summer session for the equivalent of at least 12 months employment. The student must re-enroll each placement term. 12 credits maximum allowed toward graduation.

GRADUATE

PSYCH 563 Psychopathology of Childhood 3(3-0) Prerequisite Graduate standing, permission of instructor and PSYCH 362 or equivalent.
Unique conceptual models of etiology, assessment, and therapy appropriate to psychological disorders of childhood. Graduate students complete an independent project and consider treatment and management techniques.

READING

Faculty: Chinn, Lipp, F. Romero, Ryan

Reading courses in the College of Professional Studies are offered to meet the educational needs of students and to meet the institutional basic competencies requirement, RDG 120.

Other courses improve particular reading skills. Professional staff supplement coursework through an open laboratory.

RDG COURSES

RDG 119 Fundamentals for College Reading 3(3-0)
Foundation course stressing study skills, vocabulary and comprehension for students whose placement test scores indicate need for special instruction. Intended for students having an ACT Social Science score below 16 or SAT Verbal score below 336. (S/U grades).

RDG 120 College Reading 2(2-0)
Course to develop vocabulary, comprehension, critical reading and flexibility of rate at college level. Intended for students having an ACT Social Science score below 16 or SAT Verbal score below 336.

RDG 121 Speed Reading 3(3-0) Prerequisite RDG 120 and/or permission of instructor.
Specialized course in reading improvement designed for students who wish to improve their skills beyond that which is required in RDG 120. Can be adapted to the needs of students who plan to pursue graduate study. May be substituted for RDG 120 with program approval.

RDG 122 College Reading Lab and Study Skills 1(1-0)
Laboratory course normally taken in conjunction with RDG 120; emphasis on advanced study skills.

RDG 151 Vocabulary 1(1-0) Prerequisite RDG 120, or permission of instructor.
Five-week module of vocabulary awareness such as connotations, jargon, concreteness, and specialized vocabulary.

RDG 159 Reading in Content Areas 1(1-0) Prerequisite RDG 120 or permission of instructor.
Five-week module emphasizing reading techniques used in special disciplines such as sciences and/or humanities.

RDG 291 Special Topics (1-3 VAR) Prerequisite RDG 120 or 121 and/or permission of instructor.
Explores a variety of subjects including reading techniques, cognitive development or linguistic functioning, and vision/auditory diagnosis.

RECREATION

Faculty: Aguilar

The recreation program in the School of Education leads to the bachelor of science (BS) degree. The program prepares the student for positions of leadership in a variety of recreation services agencies. Prospective employers include parks and recreation departments at the city, county, district and state levels as well as voluntary youth agencies such as Y's, Boys and Girls Clubs and scouting. Additional areas of employment include military recreation (formerly Special Services), hospital recreation, commercial, industrial or employee recreation or outdoor recreation and camping.

Many recreation majors use extensive interdisciplinary studies to prepare for work in specialty areas such as human services and recreation for the physically or mentally disabled, youth/adolescents and the elderly. Others prepare for program areas such as sports and athletics, social and cultural recreation programming, arts and crafts or other emphases.

MAJOR

A minimum of 54 hours of study is required for the BS in recreation, 32 of which are included in the recreation core below. In addition to the core, each student must select a minimum of six hours from among allied courses and eight hours from among the methods courses. These courses are used to direct the student toward the area of specialization selected, and may be taken only upon approval of the recreation education director.

The **required** professional core courses (32 hours) are:

			Credits
PE	233	Introduction and History of HPER	3
PE	461	Organization and Administration of HPE and R	3
REC	340	Principles of Community Recreation Programming	2
REC	350	Leadership and Supervision in Recreation	2
REC	389	Practicum in Recreation	3
REC	480	Recreation for Special Populations	3
REC	481	Outdoor Recreation	3
REC	482	Recreation Management	3
REC	493	Seminar	1
REC	498	Internship	9
			32

Allied courses are:

A minimum of six hours of credit must be completed from among the following courses. Approval of the director of recreation education is required prior to enrollment in any of the following:

ACCTG 201, 202; BIOL 101, 121; BEHSC 101, 102; ED 324, 325; GEOL 105; MGMT 310, 318; MACOM 201; MH 141, 142; POLSCI 330; PSYCH 251, 252, 253, 313, 351; SOC 160, 180; SPCOM 211, 221.

Methods courses are:

A minimum of sixteen hours of credit must be completed from among the following courses. Approval of the director of recreation education is required prior to enrollment in any of the following:

ART 118; BIOL 101; IED 202; MUS 118, 251; PE 116, 117, 173, 232, 243, 244, 245, 246, 247, 248, 249, 250, 322, 378, 451, 465, 471-483; SPCOM 111, 131, 312.

The following schedule is typical for the recreation major:

Freshman Year			**Credits**
ENG	110, 211	Composition I and II	6
RDG	120	Developmental Reading	2
SPCOM	101	Expository Speaking	2
		General Education	22
			32

Sophomore Year			**Credits**
PE	233	Introduction and History of HPE and R	3
REC	340	Principles of Community Recreation Programming	2
REC	350	Leadership and Supervision in Recreation	2
		Allieds and Methods	12
		General Education	8
		Electives	5
			32

Junior Year			**Credits**
PE	461	Organization and Administration of HPE and R	3
REC	389	Practicum in Recreation	3
REC	480	Recreation for Special Populations	3
REC	481	Outdoor Recreation	3
		Allieds and Methods	10
		Electives	10
			32

Senior Year			**Credits**
REC	482	Recreation Management	3
REC	493	Seminar	1
REC	498	Internship	9
		Electives	19
			32

REC COURSES

REC 340 Principles of Community Recreation Programming 2(2-0)
Rationale supporting and methods of conducting recreation programs in a wide variety of public, private, voluntary and commercial recreation agencies.

REC 350 Leadership and Supervision in Recreation 2(2-0)
Leadership and supervisory functions in professional recreation service, including program leadership techniques, facility use, safety and maintenance, in-service training, staffing, publicity and other considerations relating to various populations and agencies.

REC 389 Practicum in Recreation 3(0-3) Prerequisite Permission of director of recreation program.
Minimum of 150 hours of practical experience in a selected recreation agency.

REC 480 Recreation for Special Populations 3(3-0)
Community recreation and leisure services for the physically or mentally disabled and the elderly.

REC 481 Outdoor Recreation 3(2-1)
Lecture and practical outdoor experience relating to problems, trends in outdoor recreation and camping.

REC 482 Recreation Management 3(3-0)
Administration and management considerations in public and voluntary recreation and leisure-oriented agencies. Contemporary issues in budget and personnel management, employee relations, management style and theory, public relations and government legislation impacting on the leisure field.

REC 493 Seminar 1(1-0)
Student-led discussions on contemporary problems and issues in leisure/recreation. Preparation for entry into the profession; interview preparation and resume construction.

REC 498 Internship 9(0-9) Prerequisite Permission of director of recreation program.
400 hours of supervised, full-time experience in a selected recreation agency. Management/supervision level experience expected. (S/U grades.)

SOCIAL SCIENCE

Faculty: Eagan

An interdisciplinary program in social science which offers the bachelor of science (BS) degree.

Social scientists study people and social institutions, especially the relationships and impacts they have with and on each other. They investigate all aspects of human society. Their research provides insights that help in understanding the many ways in which individuals and groups make decisions, exercise power or respond to change. Their function is to gather and analyze data, interpret it and make it meaningful and useful for application in dealing with human problems.

Employment has traditionally been in the academic area; however, as the economy changes to a service (from an industrial) oriented system, greater need for "people-oriented" specialists is occurring. Thus, job opportunities in applied fields are increasing. These include areas such as program administration, evaluation and research in both the public and private sectors. Related careers are: teaching, planning, law, archives, museology and mass communications.

MAJOR

The major in social science requires 50 semester credits. The student has a choice of five optional tracks within the major: general major; international relations; public administration; elementary, middle-secondary teaching. Within each track the requirements differ, making close consultation with the adviser necessary.

Each track in the major has a social science core which is supplemented by a specialty core. These cores vary in course and credit hour requirements within each track. Subject areas within the major include: anthropology, economics, geography, history, political science, social science, sociology and psychology.

The student must contact the adviser for all tracks within the major. No grade below C is acceptable; either the course must be repeated or additional hours assigned by the faculty adviser in consultation with the student must be taken.

A 2.50 grade point average in the major is required for student teaching. Program guidance in the selection of general education courses will be available to the student.

An example of requirements for a general major in broad area social science is:

Freshman Year			**Credits**
ENG	110, 211	Composition I and II	6
GEOG	103	World Geography	3
HIST	102	World Civilization Since 1500	5
PE	100	PE Orientation	2
POLSC	101	American National Politics	3
RDG	120	College Reading	3
SPCOM	100	Intro to Speech Communication	1
SPCOM	101	Expository Speaking	2
Group	I	Humanities	3
Group	III	Natural Sciences	4
			32

Sophomore Year			**Credits**
ECON	101	Introduction to Economics	3
or			
ECON	201	Principles of Economics	3
HIST	202	The United States Since 1865	3
SOCAN	101, 102	General Sociology I and II	6
SOCSC	151	Society and Technology	3
Group	I	Humanities	6
Group	II	Natural Sciences	3
		Electives	9
			33

Junior Year		Credits
Upper Division	Social Science Area	15
	Electives	18
		33

Senior Year		Credits
Upper Division	Social Science Area	12
Upper Division	Electives	19
		31

SOCSC COURSES

UNDERGRADUATE

SOCSC 111 Career Orientation 1(1-0)
Current trends and developments in professional career fields. Provides students with a knowledge of job opportunities in modern occupational categories.

SOCSC 151 Society and Technology 3(3-0)
Role of technology as prime factor in changing social and political institutions. Addresses technology as the systematic application of organized knowledge and material tools to the extension of human faculties. GEN. ED. IIB.

SOCSC 208 Afro-American Heritage 3(3-0)
Analysis of black cultural experiences from African origins and civilization to the present. GEN. ED. IIB.

SOCSC 209 Blacks in America Today 2(2-0)
Analysis of blacks in today's milieu including problem areas and contemporary issues. GEN. ED. IIB.

SOCSC 231 Contemporary Affairs 2(2-0)
Current problems in world and national affairs for the purpose of developing habits in, and perspectives on, current events. GEN. ED. IIB.

SOCSC 377 Teaching Social Studies in Secondary Schools 2(2-0)
Curriculum, materials, and techniques for teaching social studies in junior and senior high schools.

SOCSC 416 Revolutions 2(2-0)
General historic development of revolutions; emphasis on one major revolutionary movement in world history.

SOCSC 493 Seminar 2(2-0)
Various problems within the realm of social science, utilizing an integrated approach. For majors in broad area social science disciplines.

GRADUATE

SOCSC 501 Technology Assessment 3(3-0)
An evaluation of the impact of technology on society and the implications of technological development on individuals, groups, societies, countries and governments.

SOCSC 502 Technology Forecasting 3(3-0)
Study of processes involved with forecasting technological growth and need. Quantitative and qualitative procedures and processes. Assumptive reasoning and logical pitfalls. Study of case histories. Term project.

SOCSC 516 Revolutions 2(2-0) Prerequisite Graduate standing.
General historic development of revolutions; emphasis on one major revolutionary movement in world history.

SOCSC 593 Seminar 2(2-0) Prerequisite Graduate standing.
Various problems within the realm of social science, utilizing an integrated approach. For majors in broad area social science disciplines.

SOCIAL WORK

Faculty: Baca, Solis

The social work program, offered by the School of Nursing and Social Work, in the College of Professional Studies leads to a baccalaureate degree (BSW). The program prepares students for entrance-level social work practice, for graduate study and for responsible, effective involvement in their communities and society.

The program is integrated with a liberal arts base. Students are encouraged to include courses in history, philosophy, anthropology, economics, political science, psychology, Chicano studies and foreign language in their course of study. The social work program is accredited by the Council on Social Work Education for undergraduate social work programs. Students receive instruction in all areas of social work theory and practice. Educationally directed field experience is required.

MAJOR

The bachelor's degree in social work leads to a variety of employment opportunities. Students who wish to function as professional social workers should consider further graduate training, because the master of social work is considered the appropriate terminal degree in social work.

Admission to the university does not guarantee automatic admission into USC's social work program. An application must be submitted to the program faculty for approval. Students are required to meet with a faculty adviser in the social work program every semester. Social work courses have prerequisites and must be taken in the sequence indicated. Information regarding pre-acceptance requirements may be obtained from the program office.

The social work major consists of a minimum of 63 semester credit hours, of which 51 are social work courses and 12 are non-social work course requirements. The regular curriculum includes SW 100, 101, 102, 205, 210, 320, 322, 323, 324, 350, 401, 420, 460, 493 and 494. Required non-social work courses include CS 101, PSYCH 211, BIOL 221, and PSYCH 313.

No grade below C is accepted toward the major or toward ENG requirements, which must be satisfied before the student enrolls in upper-division social work courses (300 and 400 level).

A typical social work schedule is:

Freshman Year			**Credits**
CS	101	Intro to Chicano Studies	3
ENG	110, 211	Composition I and II	6
RDG	120	College Reading	2
SW	100	Introduction to Social Welfare	3
SW	101, 102	Human Behavior and Social Env I and II	6
		General Education	10
			30

Sophomore Year			**Credits**
BIOL	221/221L	Prin. of Human Anatomy and Phys and Lab	4
MATH	105	Introductory Algebra	3
POLSC	102	State and Local Government	3
PSYCH	211	Women and Society	3
SW	205	Social Welfare in the U.S.	3
SW	210	Techniques of Analysis	3
		Electives	4
		General Education	10
			33

Junior Year			**Credits**
PSYCH	313	Social Psychology	3
SW	320	Emergence and Counseling of Minorities	3
SW	322, 323, 324	Social Work Intervention I, II and III	9
SW	350	Social Welfare Policy and Program Eval	3
		Electives	15
			33

Senior Year			**Credits**
SW	401	Human Foundations of Social Work	3
SW	420	Social Work Theory	3
SW	460	Social Work Seminar	3
SW	493	Seminar	3
SW	494	Field Experience	9
		Electives	10
			31

SW COURSES

SW 100 Introduction to Social Welfare 3(3-0)
The field of social work; what a social worker does and to a limited degree how he/she does it. Role of social worker, professional skills and philosophy of social work practice. GEN. ED. IIC.

SW 101 Human Behavior and Social Environment I 3(3-0)
Man in relation to environment; working knowledge of individual patterns of development during each maturational phase; physical, emotional and environmental forces which affect potential for social functioning. GEN. ED. IIC.

SW 102 Human Behavior and Social Environment II 3(3-0)
Individual and family patterns of behavior. Selected number of maladaptive responses. Inter-relatedness of physical, psychological, and social systems in diagnosis and treatment planning.

SW 205 Social Welfare in the United States 3(3-0) Prerequisite SW 100.
Where social work has come from and where it is going. Terminology, history, structure and scientific basis of social work.

SW 210 (POLSC/SOCAN 210) Techniques of Analysis 3(3-0)
Introduction to the methods of scientific investigation in the social sciences.

SW 290 Special Projects (1-5 VAR) Prerequisite Permission of instructor.
Student develops and carries out social work project under instructor's guidance. Team projects may be undertaken.

SW 296 Cooperative Education Placement (1-4 VAR) Prerequisite Program approval and placement.
Arrangements between employers and faculty members to provide students with an opportunity to earn academic credit and monetary reimbursement for on-the-job training in their field of study. Two placements must occur in academic semesters and one in a summer session for the equivalent of at least 12 months employment. The student must re-enroll each placement term.

SW 320 Emergence and Counseling of Minorities 3(3-0) Prerequisite SW 100, 101, 102.
Process of emergence of ethnic and minority groups in the United States. The traditional counseling role, which is presently being criticized by minority authors, suggestion of new directions for the student when dealing with minorities.

SW 322 Social Work Intervention I 3(3-0) Prerequisite SW 100, 101, 102.
Elements of social casework methodology, social study, diagnosis and treatment; relationships of the casework to the community, the social agency, and the individual seeking help.

SW 323 Social Work Intervention II 3(3-0) Prerequisite SW 322.
Practice methods of social group work in various fields and settings; relationship to small group structures and processes, leadership functions, interpersonal relationships.

SW 324 Social Work Intervention III 3(3-0) Prerequisite SW 322.
Nature and scope of social work intervention at the community level; distinctive characteristics of the community as a social system and implications for practice.

SW 350 Social Welfare Policy and Program Evaluation 3(3-0) Prerequisite SW 100, 205.
Nature of social policy; process of policy formulation; factors influencing choice of social objectives within goals and values of social work profession.

SW 401 Human Foundations of Social Work 3(3-0) Prerequisite Program permission
Specialized study related to human behavior. Attention to interaction of individual role performances with social institutional structure and to common-role disruptive threats or stresses.

SW 420 Social Work Theory 3(3-0) Prerequisite Program permission.
Sociobehavioral approaches relevant to interpersonal helping in social work and methods of behavioral change as reinforcement and shaping, extinction, discrimination punishment and imitative modeling.

SW 460 Social Work Seminar 3(3-0) Prerequisite Program permission.
Selected topics in social work developed for in-depth study.

SW 490 Special Projects (1-5 VAR) Prerequisite SW 101, 102; social work major, prior written permission of instructor of record.
Student develops and carries out social work project under instructor's guidance. Team projects may be undertaken.

SW 493 Seminar (1-3 VAR)
Seminar taken by students in field placement that integrates and supports the practical experiences gained in that placement.

SW 494 Field Experience (3-9 VAR) Prerequisite Program permission and placement.
Controlled educational experience in social work practice supervised by qualified professional in established agency and supervised directly by social work faculty member.

SW 495 Independent Study (1-3 VAR) Prerequisite Permission of instructor.
Experience in planning and outlining a course of study through student's own initiative; topics not covered in a regular course or in-depth exploration and analysis of subject matter presented in a regular course.

SW 496 Cooperative Education Placement (1-4 VAR) Prerequisite Program permission and placement.
Arrangement between employers and faculty members to provide students with an opportunity to earn academic credit and monetary reimbursement for on-the-job training in their field of study. Two placements must occur in academic semesters and one in a summer session for the equivalent of at least 12 months employment. The student must re-enroll each placement term. 12 credits maximum allowed toward graduation.

SOCIOLOGY/ANTHROPOLOGY

Faculty: Buckles, Forsyth, Green, Hughes, Keller

The sociology and anthropology program leads to the bachelor of arts (BA) or bachelor of science (BS) degrees. The BA is for students pursuing a broad, general education in anthropology or sociology. The BS is for those pursuing a more applied, career-oriented program. Both degrees prepare students for graduate studies.

Sociology is the study of human social behavior, concerned with conditions such as crime and delinquency, family problems, social inequality, and organizations in contemporary, industrial society. Sociologists are interested not only in understanding social problems, but in resolving them.

Anthropology is the science of culture, concerned with life in all its complexity. The discipline includes physical anthropology which deals with human biology, archaeology which analyzes past societies and peoples, and cultural anthropology which studies lives and cultures of people in particular social groups.

The combined department utilizes the university computer system and has an assortment of classroom software, including video cassettes, simulations and subject exercises. Each faculty member has speciality areas and research interests ranging from archaeology and psychological anthropology to family relations, medical sociology and criminology.

Sociology and anthropology prepare students to work in a wide variety of occupations, including education, government, business, industry and private research agencies. Although most sociologists and anthropologists work in universities and colleges, sociologists are increasingly employed in such areas as health care, youth services, drug rehabilitation, law enforcement, probation, corrections and counseling. Anthropologists are finding employment in museums, international organizations, the helping professions, and in federal and state agencies. Although a graduate degree is a customary prerequisite for such employment, a baccalaureate degree in anthropology or sociology can lead to a career in law, higher education, or in supervisory levels of civil service.

MAJOR

The program offers a combined major in sociology and anthropology. Within the major the student must choose an "emphasis area" in either sociology or anthropology; "tracks" also are included within the two emphasis areas, and one track must be selected. The emphasis in anthropology requires 41 or 42 semester hours, depending on the track. The emphasis in sociology requires 42 semester hours, regardless of track selected. No grades below C in sociology/anthropology courses are accepted toward the major.

All students must complete the following core courses (three credit hours each): SOCAN 210, 310 and 492.

General tracks leading to the bachelor of arts degree are as follows:

Anthropology emphasis — general track. Students are prepared for human service work requiring knowledge of different cultures, or for graduate school to pursue an advanced anthropology degree. Basic courses in anthropology and sociology are included, as well as selected courses in upper-division anthropology.

Anthropology emphasis — archeology track. Students receive rounded undergraduate education in archeology, including 23 semester hours of courses which emphasize descriptions, methods and theories, as well as actual experiences in archeology. Field schools and trips are sometimes available, with permission of the instructors.

Sociology emphasis — general (applied) track. Students are prepared for human service work requiring a knowledge of different cultures, or for graduate school to pursue an advanced sociology degree. Basic courses in sociology and anthropology are included, as well as selected courses in upper-division sociology.

Career tracks leading to the bachelor of science degree are as follows:

Criminology track in sociology. Through courses which focus on sociological and theoretical skills and issues, students are prepared for graduate education or for careers in juvenile justice, probation/parole, corrections/community corrections, or law enforcement. An optional internship program also is available to those qualified.

Combined sociology/anthropology medical track. Through a combined emphasis in sociology and anthropology, students are prepared to work for agencies or institutions which deal with the mentally or physically ill, or with the aged. Students are familiarized with policy issues, current findings and a range of commonly applied theories.

For further information on each, contact a faculty adviser in the sociology/anthropology program.

MINOR

A minor in sociology/anthropology requires a minimum of 21 semester hours, of which 6 hours must be 300/400 level courses. SOCAN 101 and 103 are required courses for the minor. The remaining courses must be selected by the student in consultation with his/her minor adviser in the sociology/anthropology department. No grades below C in sociology/anthropology are accepted toward the minor.

SOCAN COURSES

SOCAN 101 General Sociology I 3(3-0)
Introduction to the field of sociology; emphasis on basic principles and concepts. GEN. ED. IIB.

SOCAN 102 General Sociology II 3(3-0)
Continuation of 101; emphasis on social institutions. GEN. ED. IIB.

SOCAN 103 Introduction to Socio-Cultural Anthropology 3(3-0)
Analysis of human cultures, their evolution, development, structures and processes and an explanation of similarities and differences. GEN. ED. IIB.

SOCAN 104 Physical Anthropology 3(3-0)
Biological nature of humans; emphasis on how forces of evolution have shaped this nature in the past and present. GEN. ED. BIII A.

SOCAN 105 Introduction to Archaeology 3(3-0)
Evolution of culture as explained through archaeological methods and theories; emphasis on the preservation and protection of the cultural environment. GEN. ED. IIB.

SOCAN 106 Language, Thought and Culture 3(3-0)
Cross-cultural introduction to language processes in human society. GEN. ED. IIB.

SOCAN 107 Cultural Diversity 3(3-0)
Survey of multiethnic and multicultural societies with emphasis on social and cultural change and the diversity in patterns of adaptation. GEN. ED. IIB.

SOCAN 108 Culture, Technology and Environment 3(3-0)
Comparative study of human cultures and ecological principles relating to both subsistence level and complex societies. GEN. ED. IIB.

SOCAN 111 Laboratory and Field Techniques (1-10 VAR) Prerequisite Previous work in anthropology recommended and permission of instructor.
Training in field and/or laboratory techniques by participation in projects of anthropological concern.

SOCAN 152 Marriage and Family 3(3-0)
Historical, cross cultural, and intra-cultural comparisons of family formation, interaction and dissolution. GEN. ED. IIB.

SOCAN 153 Introduction to Criminology 3(3-0)
Nature and extent of crime in American society. GEN. ED. IIB.

SOCAN 154 Juvenile Delinquency 3(3-0)
Nature and extent of juvenile delinquency in American society.

SOCAN 155 Minority and Ethnic Relations 3(3-0)
Sociological theories, studies, and findings concerning group maintenance and interaction in contemporary society.

SOCAN 201 Social Problems 3(3-0)
Sociological interpretation of contemporary social problems. GEN. ED. IIB.

SOCAN 202 Introduction to Population Study 3(3-0)
Analysis of population distribution, composition, and change as they relate to other social factors. GEN. ED. IIB.

SOCAN 203 The Criminal Justice System 3(3-0)
Organizational features of police, courts, and corrections as subsystems of the American criminal justice system. GEN. ED. IIB.

SOCAN 204 Community Corrections 3(3-0)
Examination of correctional alternatives to incarceration.

SOCAN 205 Crime and Women 3(3-0)
Exploration of social, cultural and political variables that create both women victims and women criminals.

SOCAN 206 Sociology of Gender 3(3-0)
Examination and evolution of relationships between sex roles and societal institutions and processes. Includes an analysis of sexual stratification.

SOCAN 210 (POLSC/SW 210) Techniques of Analysis 3(3-0)
Introduction to the methods of scientific investigation in the social sciences.

***SOCAN 211 Laboratory and Field Techniques (1-10 VAR) Prerequisite Previous work in anthropology recommended and permission of instructor.**
Training in field and/or laboratory techniques by participation in projects of anthropological concern.

SOCAN 250 Life Crises in Culture 3(3-0)
Examination of the ways various cultures treat life crises such as birth, transition to adulthood, marriage, aging and death.

SOCAN 251 World Archaeology 3(3-0)
Awareness and appreciation of cultural evolution and heritages through descriptions and interpretations of archaeological remains throughout the world. GEN. ED. IIB.

SOCAN 252 Culture and Personality 3(3-0)
Relationship between group processes and personality factors in a cross-cultural perspective. GEN. ED. IIB.

SOCAN 291 Special Topics (1-3 VAR)
Topics identified by subtitles taught. Students may enroll as often as new topics are introduced.

SOCAN 301 Peoples and Cultures of the Southwest 3(3-0)
Examination of the regions mutliethnic and pluralistic society; emphasis on diverse adaptations to distinctive natural and cultural environments.

SOCAN 303 Medical Anthropology 3(3-0)
Analysis of the relationship between culture, psychological disorders and/or disease and patterns of human adaptation.

SOCAN 304 The Divine in Culture 3(3-0)
Concepts of the supernatural viewed cross-culturally and in particular culture contexts.

SOCAN 305 Forensic Anthropology 3(3-0)
Techniques of excavation and identification of skeletal remains in connection with forensic medicine and criminal investigations.

SOCAN 310 Social and Cultural Theory 3(3-0)
From classical to contemporary theory in sociology and anthropology.

***SOCAN 311 Laboratory and Field Techniques (1-10 VAR) Prerequisite Previous work in anthropology recommended and permission of instructor.**
Training in field and/or laboratory techniques by participation in projects of anthropological concern.

SOCAN 351 Social Deviance 3(3-0)
Sociological perspective on behavior defined as deviant, abnormal or socially unacceptable.

SOCAN 352 Social Psychology 3(3-0) Prerequisite PSYCH 101, or permission of instructor.
General and applied psychological principles of the person's interaction with the group.

SOCAN 353 Penology 3(3-0)
Prisons in historical perspective; treatment models as they affect the incarcerated individual.

SOCAN 354 Urban Sociology 3(3-0)
Development of urban places; analysis of socio-economic organization, urban social forces and the consequences for individuals, groups and social institutions.

SOCAN 355 Political Sociology 3(3-0)
Analysis of the major sociological variables associated with political decision-making and other political processes.

SOCAN 356 Social Stratification 3(3-0)
Inquiry into inequalities of wealth, power, and the consequence for individuals and society.

SOCAN 357 Sociology of Community Development 3(3-0)
Current issues and concerns of the community: leadership, conflict, change, neighboring, community or organization, planning and service.

SOCAN 391 Special Topics (2-4 VAR)
Special areas of faculty/student interest within the discipline.

SOCAN 401 Sociology of Health 3(3-0)
Sociological analysis of how social, cultural, and psychological factors influence health and health care.

SOCAN 402 Sociology of Aging 3(3-0)
Demographic, sociological and socio-psychological dimensions of aging.

SOCAN 403 Human Sexuality and Social Behavior 3(3-0)
Sexuality and sexual conduct from a sociological and developmental perspective.

SOCAN 404 Poverty 3(3-0)
Poverty in the U.S., its measurement and extent, perpetuating conditions, lifestyle and anti-poverty programs.

SOCAN 405 Sociology of Law 3(3-0)
Laws in Western society and criminological theory are examined.

SOCAN 406 Sociology of Small Groups 3(3-0)
Microsociological analysis of group structure, interaction and dynamics in institutional settings in modern society.

SOCAN 407 Family Violence 3(3-0)
Family violence explores the extent, seriousness, and impact of the major forms of domestic violence. This includes an overview of such types of family violence as wife battering, courtship violence, and child abuse. A sociological analysis provides clues as to why family violence exists, what can be done to prevent it and how its victims can be helped.

***SOCAN 411 Laboratory and Field Techniques (1-10 VAR) Prerequisite Previous work in anthropology recommended and permission of instructor.**
Training in field and/or laboratory techniques by participation in projects of anthropological concern.

SOCAN 430 Industrial Organization 3(3-0)
Modern industrial society; emphasis on industry as a type of social organization including roles of management and labor.

SOCAN 432 Organization Theory 3(3-0)
Prevailing theoretical model of large organizations and suggested alternatives.

SOCAN 451 Culture/Deviance/Psychopathology 3(3-0)
Analysis of the relationship between culture and the causes and manifestations of deviance and psychopathology.

SOCAN 452 Clinical Anthropology 3(3-0)
An examination of the patient-healer relationship from a cross-cultural perspective.

SOCAN 453 Southwestern Archaeology 3(3-0)
Investigations of the prehistories of diverse peoples and cultures of the Southwest.

SOCAN 491 Special Topics (1-3 VAR)
Topic identified by subtitles taught. Students may enroll as often as new topics are introduced.

SOCAN 492 Research 3(3-0)
Analysis of the research process in Sociology and Anthropology.

SOCAN 493 Seminar (2-4 VAR)
Major principles, propositions and concepts which establish sociological understanding.

SOCAN 494 Field Experience (3-12 VAR)
Practical on-the-job experience in an agency setting. Only with permission of instructor.

SOCAN 495 Independent Study (1-10 VAR) Prerequisite Previous work in sociology or anthropology and permission of instructor.
Directed study of students interested in specific areas of anthropological or sociological concerns.

*NOTE: A maximum of 10 credit hours from SOCAN 111, 211, 311, 411 count toward completion of the major. 5 credit hours from these courses may be used for upper division requirement. Fifteen (15) credit hours from these courses may be used toward number of hours required toward baccalaureate degree.

SPEECH COMMUNICATION AND THEATRE

Faculty: Benton, Bradley, O'Leary, Plonkey, Podgurski, Sherman, Threlkeld

The program in speech communication and theatre offers courses leading to the degree of bachelor of arts (BA) and bachelor of science (BS). The program also offers a minor and cooperates with the departments of English and education in offering a course of study in Language Arts.

The program participates actively in extracurricular activities closely integrated with the academic curriculum. Open to all students, regardless of their majors, the department's SPCOM 115 and 315 and SPCOM 168 and 368 provide experience both in intercollegiate competition and in community service. In the nationally acclaimed forensic program, students may participate in debate, dramatic reading, interpretation of literature and other individual and group events. The highly successful theatre program seeks to provide public performances of the highest quality to the university, the community and the region. Performances include one-act plays, major dramatic productions, musical comedies, children's plays and a summer stock theatre, providing experience in both technical theatre, production and performance.

Career opportunities for graduates of the program will vary according to the emphasis area studied. The program prepares students for graduate school where they can receive advanced degrees in communication disorders, theatre and general speech communication. Graduates typically find work in educational institutions, clinics and in professional theatre.

MAJOR

All students enrolled in the program in speech communication and theatre must complete a course of study within one of four emphasis areas: 1) general speech communication; 2) theatre; 3) communication disorders; 4) speech communication education. Each of the emphasis areas requires the following core courses:

			Credits
SPCOM	211	Public Speaking	3
SPCOM	231	Oral Interpretation	3
SPCOM	261	Voice and Diction	3
SPCOM	331	Directing	3
SPCOM	493	Seminar	3
			15

No grade below C is accepted toward a major or minor.

A maximum of two credits in SPCOM 115 and 1 credit in SPCOM 315 may be included in credit toward any major or minor. SPCOM 101 or its equivalent, or permission, is prerequisite for all courses above the one-hundred level. Requirements for each of the emphasis areas are:

General speech communication: (32 hours) Core courses (15 hours), plus an additional 17 elective SPCOM hours of which a minimum of eight must be upper level. Students receive the BA degree.

Theatre: (36 hours) Core courses (15 hours), plus an additional 21 elective SPCOM hours of which a minimum of eight hours must be upper level. Students receive the BA degree.

Speech communication education: (33 hours) Core courses (15 hours), plus SPCOM 100, 115, 212, 221, 241, 242, 312, 315, 360, 375, 376, and 377. A coordinate course, MACOM 101 (3 hours) is required. In addition, the full teacher education program for certification is required, which includes BBE 283 (2 hours). Students receive the BA degree.

Communication disorders: (48 hours) Core courses (15 hours), plus 3 elective SPCOM hours, plus 250, 324, 351, 352, 353, 360, 361, 365, 451, 452, 462, 463, and 469. In addition, coordinate required courses (25 hours) are: PSYCH 101, 102, 251, 252, 351, and 362 as well as BIOL 221 and PHYS 361. Students receive the BS degree.

Language arts: The course of study in language arts is a composite of courses from English, speech communication and theatre and education. It does not include the core courses previously cited. It does **require** all of the following in addition to the teacher education program for secondary education certification. (70 hours) SPCOM 100, 115, 211 (2 hrs.), 212, 231 (2 hrs.), 131, 135, 168, 241, 242, 261, 331, 332, 360, 368, 376; MACOM 101; ENG, 212, 222, 232, 241, 304, 315, 316, 341, 342. Additionally, the full teacher education program for certification is required which includes the speech methods course, SPCOM 377.

Specific courses scheduled for each student are mutually determined by the student and a program adviser who strives to tailor individual programs to prepare students to attain their career objectives and goals.

A typical general speech communication schedule is:

Freshman Year			**Credits**
ENG	110, 211	Composition I and II	6
RDG	120	College Reading	2
SPCOM	100	Introduction to Speech Communication	1
SPCOM	101	Expository Speaking	2
SPCOM	103	Effective Listening	2
SPCOM	211	Public Speaking	3
Group	I	Humanities	6
Group	III	Natural Sciences	9
			31

Sophomore Year			**Credits**
SPCOM	212	Argumentation	2
SPCOM	214	Parliamentary Practice	1
SPCOM	222	Group Discussion	3
SPCOM	221	Interpersonal Communication	3
SPCOM	231	Oral Interpretation	3
SPCOM	241	Organizational Communication	3
SPCOM	261	Voice and Diction	3
Group	I	Humanities	9
Group	II	Social Sciences	4
		Electives	2
			33

Junior Year			**Credits**
SPCOM	312	Persuasion	2
SPCOM	360	Language Acquisition and Linguistics	3
SPCOM	361	Phonetics	2
Group	I	Humanities	1
Group	III	Natural Sciences	1
		SPCOM Electives	4
		Electives	18
			31

Senior Year			Credits
SPCOM	401	Nature of Discourse	3
SPCOM	409	Communication Arts Research Methods	2
		Electives	26
			31

The other emphasis areas offered by the program would require modification of the above schedule.

MINOR

The minor in speech communication and theatre consists of a minimum of 20 semester hours from program offerings, six of which must be upper division. A minor is designed to meet the specific needs of the student. A minor must be planned with the assistance of an adviser and approved by the head of the speech communication and theatre program.

UNDERGRADUATE

SPCOM 100 Introduction to Speech Communication 1(1-0)
Five-week course scheduled prior to SPCOM 101. Builds self-confidence and introduces communication principles. GEN. ED. IG.

SPCOM 101 Expository Speaking 2(2-0)
Institutional requirement in speech. Basic principles of exposition and their application to public speaking.

SPCOM 102 Basic Speech Communication 3(3-0)
Integrated combination of SPCOM 100 and 101. Available only through the continuing education program.

SPCOM 103 Effective Listening 2(2-0)
Principles of good listening introduced and applied through demonstrations and exercises.

SPCOM 105 Responsibility and Freedom of Speech 3(3-0)
Examination of the problem of freedom embodied in the First Amendment, emphasizing both the individual and collective dangers and benefits. GEN. ED. IG.

SPCOM 111 Introduction to Theatre 3(3-0)
A course for non-majors emphasizing understanding and appreciation of the theatre. GEN. ED. IH.

SPCOM 112 Understanding Motion Pictures 3(3-0)
A study of the function of the screenwriter, actor, director, producer, technician, designer and critic in the film entertainment industry.

SPCOM 115 Speech Activity I 1(0-4)
On- and off-campus activities including intercollegiate forensic competition, programs for students and public. Communication skill and experience development. May repeat twice for credit.

SPCOM 131 Introduction to Theatre Technology 3(3-0)
Beginning techniques of stagecraft. GEN. ED. IH.

SPCOM 135 Introduction to Theatrical Performance 3(3-0)
Beginning techniques of acting. GEN. ED. IH.

SPCOM 168 Company Class (1-6 VAR)
Theatre production laboratory for the beginning student. Credit is given for rehearsal and performance in productions, and/or participation in technical theatre crews. May be repeated for credit.

SPCOM 201 Beginning Sign Language 2(2-0)
Introduction to the fundamentals of communicative interaction with and among the deaf by means of hand symbolization.

SPCOM 211 Public Speaking (2-3 VAR)
Emphasis is placed upon audience analysis, proof, and speaker credibility in order to persuade audiences. Application made through classroom presentations and analysis of models. GEN. ED. IG.

SPCOM 212 Argumentation 2(2-0)
Argumentation focuses on the methods an advocate employs to make rational decisions and to win assent to his statements. Particular emphasis on the nature and skills of reasoned discourse. GEN. ED. IG.

SPCOM 214 Parliamentary Practice 1(1-0)
Laboratory and discussion course, providing practical experience in a variety of parliamentary situations. Students become familiar with rules of order and appropriate usage. GEN. ED. IG.

SPCOM 216 Theatre Survey I 3(3-0)
Survey of theatre history from primitive origins to 1800. GEN. ED. IH.

SPCOM 217 Theatre Survey II 3(3-0)
Survey of theatre history from 1800 to present. GEN. ED. IH.

SPCOM 221 Interpersonal Communication 3(3-0)
The principles and skills of speaking applied to informal speaking situations. Topics covered include openness, genuineness, and talking appropriately to people. GEN. ED. IG.

SPCOM 222 Group Discussion 3(3-0)
Emphasis is on cooperative speaking within a small group in order to improve understanding, solve problems and stimulate thought. GEN. ED. IG.

SPCOM 224 (MACOM 224) Broadcast Announcing 3(3-0) Prerequisite MACOM 102.
Study and application of the principles of oral communication to radio and television announcing.

SPCOM 231 Oral Interpretation (2-3 VAR)
Basic principles and techniques of oral reading, designed to aid the student in discovering and sharing with an audience the meanings and feelings in literature. GEN. ED. IG.

SPCOM 232 Intermediate Theatre Technology 3(3-0) Prerequisite SPCOM 131.
Intermediate principles of scenic and lighting design and theatre technology.

SPCOM 235 Film and T.V. Acting 3(3-0)
A beginning course in acting before the camera. Principles of dramatic and commercial acting are introduced. Monologues, scenes and commercials are prepared and then recorded on video tape for evaluation.

SPCOM 236 Character Workshop 3(3-0)
Instruction in characterization techniques for actors and directors. Emphasis on dialects.

SPCOM 241 Organizational Communication 3(3-0)
Study of the dynamics of communication within the context of complex human organizational systems. Understanding how theories of organization, leadership, information flow, and interpersonal communication contribute to solving communication problems in the organization. GEN. ED. IG.

SPCOM 242 Interview and Conference Techniques 3(3-0)
Principles and techniques of interviewing in a variety of situations and concepts of participation and leadership in task-oriented groups. GEN. ED. IG.

SPCOM 249 Communication and the Law 1(1-0)
Role that persuasive communication plays in the application of law and the establishment of justice in the courtroom and communication roles of roles of the lawyer, juror, witness and judge. GEN. ED. IG.

SPCOM 250 Introduction to Communication Disorders 2(2-0)
Survey course about major communicative disorders. Emphasis on classification and descriptions. Treats certification requirements, licensure and professional opportunities.

SPCOM 261 Voice and Diction 3(3-0)
Voice improvement course for teachers, actors, broadcasters, professional speakers. Emphasis on breath support, phonation, resonation, articulation and pronunciation. Individual attention stressed.

SPCOM 291 Special Topics (1-3 VAR)
Directed study not contained within content of a regular course. Class activity supervised by the department, with credit specified in accord with academic value.

SPCOM 295 Independent Study (1-3 VAR) Prerequisite Permission of instructor.
Designed to permit flexibility in exploration of areas of speech communication or theatre not otherwise available. The student works individually, with advisement, on project of own design.

SPCOM 301 Intermediate Sign Language 3(3-0) Prerequisite SPCOM 201 or permission of instructor.
Study and application of the American Sign Language, including conversational skills, gestures and Deaf Cultures.

SPCOM 304 (ENG 304) Language Awareness and Human Behaviors I 3(3-0)
Uses incidents and patterns of personal language in participants' lives to explore humans as semantic reactors who can deceive, coerce or nurture with their forms of language.

SPCOM 312 Persuasion 2(2-0) Prerequisite SPCOM 211, 212 or permission of instructor.
Examination of the principles and theories of persuasion and their application to persuasive settings. Emphasis on using language to secure belief and action.

SPCOM 315 Speech Activity II 1(0-4)
On- and off-campus activities including intercollegiate forensic competition, programs for students and public. Continuation of SPCOM 115. May repeat twice for credit.

SPCOM 324 (BIOL 324) Anatomy of the Head, Neck and Chest 2(2-0) Prerequisite BIOL 221 or BIOL 321. Corequisite SPCOM 324L.
Anatomical structures of the head, neck and chest with analysis of development and function.

SPCOM 324L (BIOL 324L) Anatomy of the Head, Neck and Chest, Dissection 1(0-2) Corequisite SPCOM 324.
Dissection and examination of the anatomical structure of the head, neck and chest.

SPCOM 331 Directing 3(3-0) Prerequisite SPCOM 131, 135 or permission of instructor.
Directing theory and practice. Students choose and analyze scripts and direct one-act plays.

SPCOM 332 Advanced Theatre Technology 3(1-2) Prerequisite SPCOM 131.
Advanced techniques of scenic design and stage lighting.

SPCOM 335 Advanced Acting 3(3-0)
Instruction in acting for verse plays. Emphasis on Shakespeare.

SPCOM 351 Articulation Disorders 2(2-0) Prerequisite SPCOM 250 or permission of instructor.
Causation, diagnosis and clinical management of articulation disorders.

SPCOM 352 Voice Disorders 2(2-0) Prerequisite SPCOM 250 or permission of instructor.
Causation, diagnosis and clinical management of voice disorders.

SPCOM 353 Stuttering 2(2-0) Prerequisite SPCOM 250 or permission of instructor.
Nature and theories of stuttering with an introduction to therapeutic and counseling procedures utilized in clinical management.

SPCOM 360 Language Acquisition and Linguistics 3(3-0)
Normal processes of development of language in children, growth of language, including structure, comprehension, use of oral and written language; other symbolic behavior.

SPCOM 361 Phonetics 2(2-0)
Designed to teach the student to identify speech sounds and to transcribe them according to the International Phonetic Alphabet (IPA).

SPCOM 365 Basic Audiology 3(3-0) Prerequisite SPCOM 250 or permission of instructor.
Introduction to the field of audiology: the ears and hearing. Emphasis on initial battery testing and interpretation of test results. Overview of selected clinical diagnostic tests. Practice in hearing testing is required.

SPCOM 368 Company Class (1-6 VAR)
Theatre production laboratory for advanced students. Credit is offered in the areas of rehearsal, performance and technical crews. May be repeated for credit.

SPCOM 370 Creative Dramatics 2(2-0)
Classroom techniques in dramatics for the teacher.

SPCOM 376 Directing Speech Activities 2(2-0)
Methods of coaching competitive and non-competitive speech activities, management of speech tournaments, administration of secondary school forensic programs and recreational speech activities programs.

SPCOM 377 Speech Education Methods 2(2-0) Prerequisite Junior standing and permission of instructor.
Provides instruction and practice in the principles of teaching speech. Geared to foster a thoroughly professional teacher.

SPCOM 401 The Nature of Discourse 3(3-0) Prerequisite SPCOM 323.
Theory course; stresses the process of articulate sequential thought, verbally manifested in human life. Focuses on man, the being capable of replying in kind.

SPCOM 412 Speech Composition 2(2-0) Prerequisite SPCOM 211, 312 or permission of instructor.
Writing of speeches. Manuscript models are studied to reveal how speeches are written for aural qualities.

SPCOM 416 Theatre Survey III 3(3-0)
Survey of dramatic literature from the classic period through the 18th century.

SPCOM 417 Theatre Survey IV 3(3-0)
Survey of dramatic literature from the 19th century to the present.

SPCOM 418 Theatre Criticism 3(3-0)
Survey of the current professional season with emphasis on writing play reviews.

SPCOM 431 Advanced Directing 3(3-0) Prerequisite Junior or senior standing or permission of instructor.
Techniques of script analysis, creating style and preparing a production planbook are covered.

SPCOM 443 Conflict Management 3(3-0) Prerequisite SPCOM 241 or permission of instructor.
The nature of conflict and its resolution in organizations. The communication attitudes, strategies and tactics that are useful in managing conflict and the principles of bargaining and negotiation.

SPCOM 451 Aural Rehabilitation 3(3-0) Prerequisite SPCOM 365 or permission of instructor.
Detailed study of auditory training procedures and speech reading methods. Discussion of hearing aids included.

SPCOM 452 Diagnosis and Methods in Speech Pathology 2(2-0) Prerequisite Six semester hours in speech pathology or permission of instructor.
Clinical principles and methods with emphasis on diagnosis and evaluation. Discussion of Federal Law PL 94-142 and the Individualized Education Program (IEP) for the communicatively handicapped in the public schools. Experience with clinical tests, therapy materials and diagnostic equipment.

SPCOM 462 Organic Disorders of Speech 3(3-0) Prerequisite Six semester hours in speech pathology or permission of instructor.
Nature and causes of aphasia, cerebral palsy, cleft palate, and neurological disabilities. Introduction to clinical management of these disorders.

SPCOM 463 Language Disorders in Children 2(2-0) Prerequisite SPCOM 360 or permission of instructor.
Study of the cause, nature, diagnosis of language disorders in children. Introduction to clinical management.

SPCOM 469 Clinical Experience in Communication Disorders 1(0-1) Prerequisite Permission of instructor.
Supervised clinical practice. Fifty clock hours must be completed to earn one semester hour of credit. May be repeated three times for credit. (S/U grades.)

SPCOM 475 Communication Disorders in the Classroom 2(2-0)
Identification and classification of common communication disorders found in the classroom. Speech improvement techniques and referral procedures are included. Recommended for all teachers.

SPCOM 491 Special Topics (1-3 VAR) (When appropriate) Prerequisite Permission of instructor.
Advanced study not touched upon in regular courses. Academic value consistent with senior level requirements.

SPCOM 493 Seminar (1-3 VAR) Prerequisite Junior or senior standing and permission of instructor.
Class activity supervised by the department, centering around an advanced level of some aspect of discourse. Credit value assigned according to course objectives.

SPCOM 495 Independent Study (1-3 VAR) Prerequisite Permission of instructor.
Designed to permit flexibility in exploration of areas of speech communication or theatre not otherwise available. Student works individually with advisement on project of own design.

SPCOM 496 Cooperative Education Placement (1-4 VAR) Prerequisite Permission of instructor.
Arrangment between employers and faculty members to provide students with an opportunity to earn academic credit and monetary reimbursement for on-the-job training in their field of study. Two placements must occur in academic semesters and one in a summer session for the equivalent of at least 12 months employment. The student must re-enroll each placement term. 12 credits maximum allowed toward graduation.

GRADUATE

SPCOM 568 Company Class (1-6 VAR) Prerequisite Graduate standing.
Theatre production for graduate students. Credit is offered for directing, design, rehearsal, performance and technical crews. May be repeated for credit.

SPCOM 570 Creative Dramatics 2(2-0) Prerequisite Graduate standing.
Graduate-level creative dramatics for the classroom teacher.

SPCOM 575 Communication Disorders in the Classroom 2(2-0) Prerequisite Graduate standing, permission of instructor.
Identical with SPCOM 375, but with additional requirement for individual activity and research reports.

SPCOM 576 Directing Speech Activity 2(2-0) Prerequisite Graduate standing, permission of instructor.
Identical in content with SPCOM 376 but higher quality of work and greater understanding of course objectives must be attained. Research report is required.

SPCOM 591 Special Topics (1-3 VAR) Prerequisite Graduate standing.
Similar to SPCOM 491 above, but with more demanding requirements of quality and significance. A research report is required.

SPCOM 595 Independent Study (1-3 VAR) Prerequisite Graduate standing.
Similar to SPCOM 495 above, but with more demanding requirements of quality and significance. A research report is required.

WOMEN'S STUDIES

Program Advisers: Bassein, Hearn

The Women's Studies multi-disciplinary program is designed to acquaint students with the current scholarship on women — particularly in humanities and the social sciences. Courses are taught with a positive approach toward correcting conditions for women and raising awareness for advancement possibilities.

Students may pursue the program by taking the following courses: Chicano Studies 210; English 260; Mass Communications 235; Nursing 117; Psychology 211 and 212; and Sociology/Anthropology 205, 206, 403 and 407. (See appropriate departmental listings for course titles and descriptions.) The courses may be taken as electives, and some satisfy university requirements. Some departments also offer individualized projects or special topics courses which could add to the program offerings. With approval of departments offering the major program, students may pursue Women's Studies as an area of concentration in lieu of a minor.

For advisement, students should contact course instructors, Women's Studies Committee members or department heads.

GRADUATE STUDIES PROGRAM

The College of Professional Studies offers selected graduate programming for degree and non-degree seeking students and participates in a consortial arrangement with Adams State College for a master of arts (MA) in elementary education. Presently, the following graduate degrees are available.

Business Administration	MBA
Industrial Education	MA
Elementary Education (Consortium Program with Adams State College)	MA

The Graduate Studies Program is administered by the director of Research and Graduate Studies. Graduate policies and regulations are developed by the University Graduate Council, a representative body of faculty.

General graduate admissions procedure. Applicants seeking admission to the Graduate Studies Program should submit the following items to the director of Research and Graduate Studies, University of Southern Colorado, 2200 Bonforte Blvd., Pueblo, CO 81001-4901:

1) A completed application for admission to graduate studies and a $10 application fee. The fee is non-refundable and is not applicable toward tuition; **Exempted:** Students who have previously attended USC are exempt from payment of the application fee.

2) An official transcript of all college and university work attempted and completed (graduates from the University of Southern Colorado are exempted; the records will be obtained directly from the Office of Registration and Records);

3) The score from the aptitude portion of the Graduate Record Examination (GRE) is required before admission to candidacy status is achieved for students in elementary and industrial education. Students desiring to enroll in the MBA program must submit scores from the GMAT for admission;

4) A copy of current teacher certification for students in elementary education and industrial education;

5) The score from an English language proficiency test (TOEFL or Michigan) for students whose native language is not English. A minimum score of 500 TOEFL or 80 Michigan, level 109 ELS, or level five from the American Language Academy level is required for admission;

6) International students also must show proof of financial responsibility. Additional details are available from the Office of Research and Graduate Studies;

7) Any post-baccalaureate student, who is not pursuing a graduate degree may be accepted as a non-degree graduate student. In non-degree graduate status a student may take undergraduate courses, and with the permission of each instructor, up to 12 hours of graduate classes. Graduate students who have applied for a graduate degree program, but who have been accepted in non-degree status pending completion of application materials, also may take courses with the same stipulation. No more than 12 hours taken in non-degree status may be applied toward a graduate degree, if the student is subsequently accepted into a degree program. Walk-in registrations are accepted for non-degree students. International students cannot be accepted as a non-degree graduate student.

CLASSIFICATION OF GRADUATE STUDENTS

A graduate student is one who has completed a baccalaureate degree and is enrolled for additional courses, either at the undergraduate or graduate level. The following categories are recognized:

Regular Status: A student who is seeking a degree, and whose grade point is 2.7 or better and who has met all admission requirements.

Conditional Status: A student who is degree-seeking and whose grade point is less than 2.7 but above 2.25 but has otherwise met all admission requirements.

Non-degree: A student who wishes to pursue a graduate degree but whose grade point is below 2.25 or who has in some other manner not satisfied admission requirements. Such students may petition acceptance into a degree-granting program after demonstrating that the lack of qualifications has been rectified. No more than 12 graduate hours taken in non-degree status may subsequently be applied towards a graduate degree.

Non-degree for Professional Improvement: A student who wishes to take additional undergraduate or graduate courses without being considered for a graduate degree.

Auditor: Same as undergraduate auditor. See page 65.

ACADEMIC POLICIES

1) Students may transfer a maximum of nine semester hours of graduate credit into a degree program, with approval of the student's graduate counselor and the director of Graduate Studies. That credit must be directly applicable toward the degree, must be in courses in which grades of A or B were received, must have been taken within the time limit specified for graduate degrees, and must be from an accredited institution where the student's graduate GPA was 3.0 or better.

2) To remain in good graduate standing a graduate student's GPA must remain at 3.0 or better. If the graduate GPA falls below 3.0, a student will be placed on probation. If the graduate GPA falls below 2.25 or if a graduate student on probation is not making progress toward good standing, a graduate student can be suspended.

3) Students may apply a maximum of six hours of graduate work with a grade of C toward a graduate degree. Courses in which grades of D or F were earned shall not apply toward a graduate degree.

4) All degree seeking students are required to submit a degree plan. The plan is usually submitted during the first semester of graduate study.

5) All degree-seeking students shall be assigned a graduate adviser and a graduate committee by the dean of the College of Professional Studies. The committee consists of three members of the faculty, one of whom shall be the graduate adviser.

6) All graduate programs require a comprehensive examination and some may require a thesis or directed research project. If a thesis or directed research project is required, the student must schedule an oral defense. The report on the outcome of the oral examination must be submitted at least 10 working days prior to commencement.

DEGREE REQUIREMENTS

Graduate students must fulfill the specific requirements of their program and the following university requirements:

1) A minimum of 30 semester hours of graduate work. Some programs may require additional work. At least 24 of the hours must be earned on the Pueblo campus of the university.

2) A cumulative graduate GPA of 3.0 or better.

3) Notification of acceptable performance on the comprehensive examination.

4) If a thesis or directed research project is required, filing of the final written document with the graduate office. Directions for preparation of the thesis are available in the adviser's office and in the Office of Research and Graduate Studies.

5) A request for graduation submitted during the semester prior to graduation.

Limitation on older credit. Courses completed six or more years before the date of graduation will not be accepted as satisfying the requirements for a graduate degree. This limitation applies to transfer credit as well as credit earned at USC.

Undergraduates admitted to graduate work. In general undergraduate classes do not apply to a graduate degree and courses taken for graduate credit cannot apply toward an undergraduate degree. Courses taken as an undergraduate cannot be repeated for graduate credit, even if the course is dual numbered.

Senior undergraduate students with approved graduation planning sheets may enroll in graduate classes (for graduate credit) during the last semester of undergraduate enrollment with the approval of the director of Research and Graduate Studies.

Appeals. All graduate policies, procedures, and regulations may be appealed. Appeals should be made in writing to the University Graduate Council through the director of Research and Graduate Studies.

Consortium policies. Students in the Adams State College consortium program must meet the admission and graduation requirements of Adams State College.

Program requirements. A complete listing of the requirements for each graduate program is available in a **Graduate Handbook** available from the adviser or the Office of Research and Graduate Studies.

BUSINESS ADMINISTRATION

(MBA DEGREE)

Purpose. The purpose of the MBA program, offered by the School of Business in the College of Professional Studies, is to prepare students for high-level general management careers in business and other organizations. To this end, students acquire knowledge of management operations; an appreciation of the interrelationships involved; an understanding of the eco-

nomic, political and social environments in which business operates; and behavioral skills that are essential in the manager's role in the implementation of business decisions. The MBA program endeavors to provide an atmosphere conducive to the development of each student's ability to think in a creative and effective manner. The program makes extensive use of lectures, seminars, field trips, group projects, case studies and independent research.

The program is open to applicants with a bachelor's degree, regardless of the undergraduate field of study. Students, however, will be expected to demonstrate, through academic or experiential preparation, an appropriate background in the key areas of accounting economics, finance, quantitative methods, business law, the principles of management and the principles of marketing. Students without this background may be required to complete some undergraduate leveling requirements.

Graduate admission procedure:

1) *Eligibility for admission.* Applicants for admission to the program leading to the degree of Master of Business Administration must have a bachelor's degree with an acceptable level of scholarship from an accredited institution of higher learning. The degree may be in any academic discipline.

2) *Application.* All persons who wish to enroll in the program apply for admission through the director of Research and Graduate Studies.

3) *GMAT.* All prospective MBA students are required to take the Graduate Management Admissions Test (GMAT). An admission formula of 200 times the undergraduate GPA (4.0 system) plus the GMAT score constitutes a scaled admission score for each applicant. Regular admission is given to those students who satisfy the university's general admission requirements for graduate study, have a scaled admission score of at least 950; and have satisfactory preparation in the key areas.

4) *Acceptance for admission.* Students are admitted to the program as candidates for the MBA degree on the basis of interest, aptitude and capacity for business study as indicated by previous academic record, achievement scores on the GMAT (Graduate Management Admission Test), letters from faculty members and employers (while not required, will be considered) and pertinent information from the student's application. The MBA program has a selective admission policy to insure small class size and close student-teacher contact. Individuals who have not been admitted to the MBA program will not be allowed to attend MBA classes.

Program of study. Successful completion of the MBA requires coursework in the basic disciplines, and in the functional areas of business. The structure of the program covers the common body of knowledge and breadth components as suggested by the American Assembly of Collegiate Schools of Business. In addition to core courses, a total of 12 hours of directed research and electives numbered 500 must be completed. With approval of the director of Research and Graduate Studies, up to six hours of coursework from other graduate programs may be transferred. A grade-point average of B (3.0) or better must be maintained on all coursework. Failure to do so will result in probation/disqualification.

Leveling courses. A group of required fundamental courses that the student with an undergraduate degree other than business has to take before being enrolled as a regular MBA student. The courses are:

ACCTG 201	ECON 202	MKTG 340
ACCTG 202	BUSAD 200	FIN 330
ECON 201	MGMT 310	BUSAD 260

Leveling courses are assigned by evaluation of previous academic transcripts.

The MBA program consists of a minimum of 36 hours of approved coursework in the following three groupings: 1) 24 semester hours of core or foundation courses; 2) 6 semester hours of electives or emphasis courses, and 3) 6 semester hours of directed research.

1) The core or foundation courses are designed to provide the basic principles for each functional area of a business organization. Completion guarantees that all students of the MBA program will have reached the same level of knowledge regardless of previous education or experience. Core courses are:

			Credits
ACCTG	510	Managerial Accounting	3
BUSAD	550	Quantitative Methods in Managerial Decision-Making	3
ECON	501	Managerial Economics	3
FIN	530	Financial Management	3
MGMT	520	Management Theory and Practice	3
MKTG	540	Marketing Management Strategies	3

2) Electives or emphasis courses are designed to provide the student with a focus to his or her program. Areas in which such focus or emphasis might be developed include: Accounting, Management Information Systems, Economics, Finance, Management and Marketing. Other areas such as Health Care Management, Industrial Management and Non-Profit Organization Management will be approved as needs indicate. The program requires six hours of emphasis courses.

3) Directed research is designed to provide the student with the basic research tools and methods. Directed research is selected with the assistance and approval of a graduate adviser. The program requires six hours of directed research.

Course descriptions may be found in separate departmental listings.

ELEMENTARY EDUCATION GRADUATE CONSORTIUM

(MA DEGREE-ADAMS STATE COLLEGE)

Purpose. The program provides graduate students who are elementary teachers an opportunity to attain credits toward a masters degree in elementary education from Adams State College. USC's College of Professional Studies' School of Education offers some of the graduate courses needed in the program. Students in the consortium program develop advanced skills and knowledge in research, curriculum development, classroom management, subject matter background, and in-depth methods and techniques of teaching.

Admission procedure. Applicants should seek admission through the USC director of Research and Graduate Studies. All applicants must have a valid teaching certificate endorsed in elementary education.

Program. A minimum of 30 semester hours of graduate work must be earned with a minimum GPA of 3.0, with at least 12 hours earned in courses taught by professors from Adams State College, taught on USC's campus.

The remainder of the courses are taught by USC professors. The student must pass a graduate English usage exam (to be taken in ID 503) and a final comprehensive exam. A written plan for the degree must be filed with the director of Research and Graduate Studies. Elective courses must be chosen with the approval of the graduate adviser.

A minimum of 24 months is required to complete the program. The courses are scheduled evenings and summers. Students are encouraged to enter at the beginning of a program cycle. Students entering at other times are accepted but continuation of the program from one cycle to another is not guaranteed. Adams State College offers a field-based guided study option or a regular research core option. The sequence of courses needed to complete the program of study may be obtained from USC's School of Education or the director of Research and Graduate Studies.

INDUSTRIAL EDUCATION

(MA DEGREE)

Purpose. The graduate program in industrial education, offered by the School of Education in the College of Professional Studies, was designed to meet the needs of secondary and post-secondary teachers. The master of arts degree is intended for experienced, certified teachers who wish to increase competence in pedagogy, technical skills and related information in their teaching fields. The work leading to the degree is competency-based and individualized. The major is designed to meet specific needs of individual students. The student's background, experience, and professional aspirations are important factors in designing each student's course of study.

Graduate admission procedure. Applicants for degree-seeking status as graduate students should follow the USC Graduate Studies admissions policy.

Advising. Each degree-seeking (regular or conditional) graduate student is assigned a graduate adviser. The adviser shall act as the chairperson for a graduate committee for each student. The graduate committee shall

consist of three faculty members (including the adviser) and is appointed by the dean of the school in which the program resides. One member of the committee must be from outside the discipline of the student's graduate program. Changes in membership in the graduate committee may be requested through the director of Research and Graduate Studies.

The responsibilities of the graduate adviser and the graduate committee include advisement, approval of the degree plan, approval of a thesis or directed research topic and final document (if appropriate), and administration and approval of comprehensive and/or oral examinations.

Facilities and faculty. Large unit laboratories are provided with the latest traditional and innovative tools, materials, and equipment available. The facilities are among the best in the Rocky Mountain region.

The faculty has been selected to meet specific needs in the program. Each is a master craftsman in a specific area and has three or more years of experience, several years of successful teaching experience and appropriate academic degrees.

Program. The objective of the Master of Arts in industrial education is to prepare students who wish to teach industrial subjects in the public schools, community colleges, or vocational schools.

Since the degree is designed to meet the needs of secondary and postsecondary teachers of industrial and vocational education, students are required to possess appropriate teacher certification, an interest in education, and appropriate academic preparation in education and industrial education coursework. With their applications, applicants are required to submit a letter of recommendation from an individual familiar with their teaching and background.

The MA in industrial education will be conferred upon students who successfully complete a minimum of 30 hours of approved coursework. The curriculum is composed of three categories of courses:

1) 13 semester hours of required core in industrial education courses.

2) 6 semester hours of approved professional education graduate coursework; and

3) a minimum of 11 semester hours of approved graduate electives. See page 199 for course descriptions.

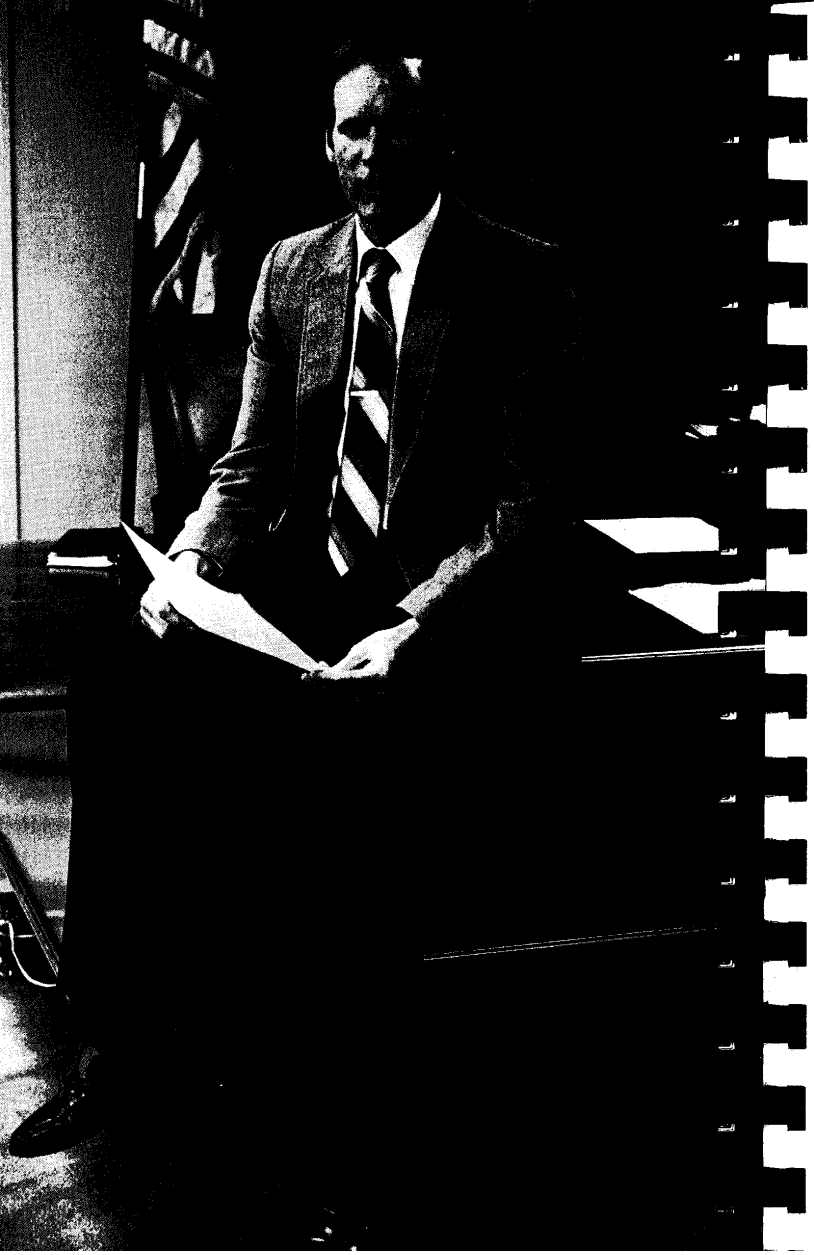
The **required** core courses (13 hours) are:

			Credits
IED	581	Curriculum Development in Industrial Education	3
IED	582	History of Industrial Education	3
IED	584	Philosophy of Industrial Education	3
IED	585	Organization and Administration of Industrial Education	3
IED	586	Seminar in Industrial Education	1
			13

PLUS

*Professional education electives	6
Electives	9
	30

*Professional education electives must be approved by the adviser and the department of teacher education.



UNIVERSITY PERSONNEL

STATE BOARD OF AGRICULTURE

Name	Address
Katherine A. Cattanach	Denver
Patrick J. Conley	Ignacio
Thomas T. Farley	Pueblo
Susan W. Furniss	Fort Collins
Gordon Hattersley[2]	Fort Collins
Charles W. Henning	Denver
Alan P. Love[3]	Pueblo
Andy Love	Denver
Richard Podlesnik[1]	Durango
Tim R. Prager[1]	Durango
Richard Robinson	Denver
Harry Rosenberg[2]	Fort Collins

Paul S. Salas. . . . . Fort Collins
Paul M. Smith[3] . . . . . Pueblo
John Stencel, III . . . . . Denver

[1]Representative from Fort Lewis College
[2]Representative from Colorado State University
[3]Representative from the University of Southern Colorado

ADMINISTRATIVE OFFICERS

Shirley, Robert C., president
Kashner, James B., interim vice president of Academic and Student Affairs
Garcia, Nasario, interim assistant vice president for Academic Affairs
Murdoch, George W., vice president for Business Affairs

EXECUTIVE STAFF

Bronn, Stephen D., interim director of Budget/Institutional Research
Garcia, Pat, Legal Counsel
Mason, Robert, director of University Computing
Montoya, Ronald R., director of Affirmative Action
Nichol, Elizabeth A. (Betty), director of Development and Alumni Relations

DEANS

Hill, Richard H., dean, Student Services
Ezell, Annette D., dean, College of Professional Studies
Sisson, Ray L., dean, College of Applied Science and Engineering Technology
Steeples, Douglas W., dean, College of Liberal and Fine Arts
Valerio, Luis G., dean, Extended Programs
Watkins, Sallie A., interim dean, College of Science and Mathematics

ADMINISTRATIVE OFFICES

ADMISSIONS

Padilla, Jose A. (Rudy), director
Martinez, Deborah A., assistant director of Admissions/coordinator of Minorities and Women
Melin, Carl, admissions counselor

ALUMNI RELATIONS

Nichol, Elizabeth A. (Betty), director

AMERICAN LANGUAGE ACADEMY

McNamara, Lynn, director

ATHLETICS

Mullen, Robert W., director

AUXILIARY SERVICES

Johnson, Cheryl D., director
Finney, Joni, coordinator of student activities

BUSINESS AFFAIRS

Murdoch, George W., vice president
Partridge, Gary W., controller
Neari, John J., director, Purchasing
Quinlan, James, director, Physical Plant
Quirk, Thomas J., director, Safety/Environmental Health

CAREER SERVICES AND COUNSELING

Gerber, Gerald I., director
Axelrath, Joyce, coordinator, Student Development Center
Zeleny, Richard D., coordinator, Career Counseling/Veteran's Affairs

COMMUNICATION SERVICES

McGill-Eagan, Mary L. (Sally), director

EXTENDED PROGRAMS
Valerio, Luis G., dean
Stubenrouch, Roger E., director of Off-Campus Programs

FINANCIAL AID
Mestas, Gina, director

HOUSING
Engber, Micah, director

INTERNATIONAL STUDENT SERVICES
Wells, Elmer E., coordinator

KTSC-TV
Sinn, Greg, general manager
Lundahl, Sandra L., assistant to general manager
Allen, Rebecca, coordinator, public information

PERSONNEL
Kendall, Anita L., director

RECORDS
Pobst, Alice, acting registrar

RESEARCH AND GRADUATE STUDIES
Sublette, James E., director

STUDENT HEALTH
Wilfredo, David, M.D.
Gutierrez, Eva, nurse

SUMMER SESSION
Garcia, Nasario, interim assistant vice president for Academic Affairs

UNIVERSITY COMPUTING
Mason, Robert, director
Dehn, Ronald, manager, systems operations
Orzich, Mary Jo, consultant, Academic Computing

UNIVERSITY LIBRARY
Moore, Beverly, director
Moffeit, Tony, assistant director, Library Services
Payne, John Jr., assistant director, Instructional Media Services

UPWARD BOUND
Pineda, Juan N., director
Amella, Gary, assistant director

EMERITUS FACULTY

Anderson, Norris D., 1965; BA, MA, Ed.D., professor emeritus of education
Bartlett, Thomas J., 1967; BS, MA, professor emeritus of mathematics
Binfield, Ann L., 1946; BA, MA, BSLS, professor emeritus librarian
Blake, Marvin, 1949; BE, professor emeritus of manufacturing engineering technology
Blasing, James A., 1956; AA, professor emeritus of physical education
Bond, John A., 1967; BS, MA, Ph.D., professor emeritus of political science
Boss, Marion L., 1964; BSBA, MSBE, Ed.D., professor emeritus of business administration
Cotner, Jane, 1960; AB, BSLS, professor emeritus of library sciences
Davison, Earle, 1950; BS, professor emeritus of industrial technology
Dudley, Lloyd P., 1956; BA, MA, professor emeritus of speech communication
Ervin, Dwain T., 1964; BA, MA, Ph.D., professor emeritus of history
Farwell, Hermon W., 1966; AB, MA, professor emeritus of speech communication
Fouts, Kenneth B., 1962; AA, BFA, MA, Ph.D., professor emeritus of speech communication
Given, Jacqueline, 1933; BS, MA, professor emeritus of engineering & mathematics
Griffith, Gerald V., 1947; BS, MA, professor emeritus of agriculture
Hobbs, Harold C., 1966; BA, MA, Ph.D., professor emeritus of psychology
Hobson, Henry, 1948; BE, professor emeritus of air conditioning/refrigeration

Howard, Maurice L., 1962; Th.B., AB, MA, Ed.D., professor emeritus of psychology

Ihrig, Paul R., 1946; BS, MA, professor emeritus of fine arts

Jurie, Carl A., 1956; BA, MA, professor emeritus of geology

Kahn, Theodore C., 1965; BA, MA, Ph.D., Sc.D., professor emeritus of behavioral science

Kenyon, Gordon R., 1960; BA, MA, Ph.D., professor emeritus of history

Kurtin, Alfred D., 1945; BA, MA, emeritus registrar

Levy, Ralph W., 1957; BA, MA, professor emeritus of music

Lund, Carl, 1957; professor emeritus of welding

McClary, William B., 1946; BA, MA, professor emeritus of economics

McCown, Dean A., 1963, BS, MS, Ph.D., professor emeritus of physics

Middleton, Donald S., 1948; BA, M.Ed., professor emeritus of electronics

Mikkelsen, Harry E., 1958; BA, M.Basic Science, professor emeritus of physics

Miller, Robert E., 1952; BS, MS, professor emeritus of chemistry

Orman, Leonard M., 1970; BS, MA, professor emeritus of mathematics

Pardun, Horace M., 1947; BA, MA, professor emeritus, dean of Student Services

Pope, Gerald, H., 1955; BS, M.Ed., professor emeritus of mechanical engineering technology

Rudd, John P., 1965; BA, MA, Ed.D., professor emeritus of psychology

Sanderson, James M., 1947; BS, MA, professor emeritus of history

Shih, Tsang Yu (Tom), 1964; BSM, professor emeritus of metallurgical engineering technology

Simmons, Harry H., 1946; BABE, M.Ed., professor emeritus of physical education

Simms, Houston, C., 1947; BA, MA, professor emeritus of biology

Singer, Olive, 1943; BA, MS, professor emeritus of English and developmental reading

Taussig, Anna, 1960; AB, MA, professor emeritus of foreign language

Tilley, Lewis L., 1965; BFA, MFA, professor emeritus of art

Townley, Rodney D., 1945; B.Mus.Ed., M.Mus.Ed., professor emeritus of music

Wack, Dunstan J., 1969; BS, MA, Ph.D., professor emeritus of psychology

FACULTY AND STAFF FOR 1985-86

Abebe, Teshome, 1983; BA, MA, Illinois State University; Ph.D., Northern Illinois University; interim assistant dean, School of Business

Adams, Robert M., 1981; BA, George Washington University; development director, Telecommunications Division

Aguilar, M. Kay, 1964; BS, Lock Haven State College; MA, Adams State College; Ed.D., University of Northern Colorado; professor of physical education

Aichele, Ronald G., 1972; BA, MA, Ph.D., University of Missouri; associate professor of philosophy

Allen, Ernest E., 1963; BS, Wayne State University; BS, MA, Michigan State University; MATM, University of Detroit; Ed.D., University of Northern Colorado; professor of mathematics

Allen, Rebecca, 1984; BS, University of Southern Colorado; public information coordinator, Telecommunications Division

Amella, Gary, 1980; BA, University of Colorado; MA, Colorado State University; assistant director, Upward Bound/Special Programs

Anderson, Deyrol E., 1983; BA, Washington State University; MA, San Francisco State University; Ph.D., University of Denver; associate professor of mass communications

Angelotti, Stephen, 1984; BS, University of Southern Colorado; development assistant, Telecommunications Division

Angus, Charles, 1984; BBA, University of Minnesota; MBA, Case Western Reserve University; Ph.D., University of Arkansas, professor of marketing

Antista, James V., 1980; master control operator, Telecommunications Division

Askwig, William J., 1962; BSBA, MBA, University of Denver; DBA, Texas Technological University; professor of economics

Atterberry, John, 1984; master control operator, Telecommunications Division

Aube, Thomas R., 1980; chief engineer, Telecommunications Division

Axelrath, Joyce, 1983; BA, Colorado State University; MA, University of South Carolina; coordinator of Student Development Center

Baca, Judy M., 1981; BS, University of Southern Colorado; MSW, ACSW, Arizona State University; assistant professor of social work

Baldauf, Boyd J., 1964; BS, Nebraska State College; MA, Ed.D., University of Northern Colorado; professor of education

Banks, Jessie F., 1966; BS, Central State University; MA, Adams State College; assistant professor of physical education, assistant director of Athletics, women's basketball coach

Bard, Eugene D., 1965; BS, MS, Oklahoma State University; Ed.D., University of Northern Colorado; professor of physics

Barker, Charles, 1984; continuity coordinator of Telecommunications Division

Bassein, Beth Ann, 1966; BA, Tarkio College; MA, Ph.D., University of Missouri; professor of English

Beck, J. Michael, 1970; BA, Southern Colorado State College; MA, Western State College; assistant professor of music

Benton, Johnny, 1968; BA, Panhandle A&M; MA, University of Arkansas; Ph.D., University of Oklahoma; professor of speech communication

Blandford, Robert D., 1965; BS, Eastern New Mexico University; MA, Bowling Green State University; DA, University of Northern Colorado; professor of mathematics

Borton, John M., 1983; BA, Purdue University; MS, University of Northern Colorado; assistant professor of computer science technology

Bottini, Patrick W., 1968; BS, Southern Colorado State College; MA, Adams State College; associate professor of industrial education

Bradley, Lawrence B., 1966; BA, University of Northern Colorado; MA, San Jose State College; associate professor of theatre

Bramlett, Lindsey L., 1982; BA, University of California; MA, California State University; instructor of mathematics

Brassill, Joann A., 1967; BA, Notre Dame College; MA, Western Reserve University; MFA, University of Notre Dame; professor of art

Bright, A. Leon, 1963; BS, Central Missouri State College; MA, University of Kansas; Ph.D., University of New Mexico; professor of Spanish

Bronn, Stephen D., 1971; BS, University of Nebraska; MS, Ph.D., Northwestern University; professor of mathematics and director of Budget/Institutional Research

Buckles, William G., 1965; BA, MA, Ph.D., University of Colorado; professor of anthropology

Cain, Robert L., 1970; BA, Baylor University; MS, Louisiana State University; documents librarian, The University Library

Cameron, James T., 1970; BA, The Colorado College; MA, Ph.D., University of Colorado; professor of psychology

Cedrone, Frank J., 1969; artist diploma in piano, Boston Conservatory; artist-in-residence

Chandler, William D., 1979; BS, Massachusetts Institute of Technology; MBA, University of San Francisco; assistant professor of computer science technology

Chen, Frank T., 1982; BSME, Chung Cheng College of Science and Engineering, Taiwan; MSME, Clemson University; Ph.D., North Carolina State University; associate professor of mechanical engineering technology

Cheng, Joseph K., 1973; BS, Taiwan Christian College; MS, University of Massachusetts; Ph.D., University of Oklahoma; professor of engineering

Chinn, Jacqueline, 1970; BBA, The Colorado College; MA, University of Colorado; assistant professor of Reading

Connelly, Jerald L., 1979; BS, Ph.D., University of Rochester; professor of chemistry

Cook, Robert N., 1981; BEE, General Motors Institute; MSE, University of Michigan; M.Sc., Ph.D., University of Western Ontario; associate professor of computer science technology

Cottrell, Donald E., 1970; BSEE, University of Denver; MSEE, University of Colorado; Ph.D.EE, University of Denver; professor of electronics engineering technology

Cranmer, Joseph W., 1965; BS, Brigham Young University; MA, University of Wyoming; Ed.D., University of Utah; professor of physical education

Croxton, Carol I., 1978; BA, MA, Ed.D., Ball State University; associate professor of English

Daxton, Lawrence E., 1966; BA, MA, University of Northern Colorado; Ph.D., University of Colorado; professor of history, director, Center for Humanistic Policy Studies

Dawson, Roseanne, 1984; BA, Drake University; MA, University of Iowa; MLS, University of Denver; assistant reference librarian, The University Library

Derr, James B., 1984; BA, College of St. Thomas; Ph.D., Michigan State University; associate professor of mathematics

DeFore, Richard A., 1981; BA, University of Wisconsin; MA, University of Northern Colorado; learning resources specialist, Instructional/Media Services

Dhatt, Yashwant S., 1983; MA, University of Delhi; MBA, McGill University; Ph.D., Georgia State University; assistant professor of management, marketing and finance

Dille, Ralph G., 1976; BA, BS, MA, Bowling Green State University; Ph.D., Ball State University; professor of English

DiPrince, Linda S., 1970; BS, University of Southern Colorado; financial aid counselor

Dorsch, John A., 1965; BA, Willamette University; MS, Ph.D., Oregon State University; professor of biology

Dragmeister, Richard W., 1984; BA, MA, Western New Mexico University; head basketball coach

Driscoll, Donald J., 1965; BA, Sophia University; MA, Ph.D., New School for Social Research; professor of philosophy

Duncan, James L., 1958; BM, Central College; MM, Eastman School of Music; professor of music

Eagan, William T., 1962; BA, University of Denver; MA, Claremont Graduate School; professor of history

Eberling, Kathleen G., 1981; BS, University of Southern Colorado; JD, University of Colorado; assistant professor of political science

Engber, Micah, 1984; BA, M.Ed., Ohio University; director of residence hall

Ezell, Annette S., 1985; BS, MS, University of Nevada; Ed.D., Brigham Young University; professor and dean, College of Professional Studies

Farris, Gerald C., 1967; BA, Dakota Wesleyan University; MS, University of Utah; Ph.D., Colorado State University; professor of biology

Finney, Joni E., 1985; BA, Westminster College; MA, Bowling Green State University; Ph.D., The Pennsylvania State University; coordinator of Student Activities

Forsyth, Dan W., 1983; BA, University of California; MA, University of Chicago; Ph.D., University of California; assistant professor of anthropology

Freark, Dorman G., 1982; ME, MS, Stevens Institute of Technology; Ph.D., University of Cincinnati; professor of engineering

Garcia, Nasario, 1973; BA, MA, University of New Mexico; Ph.D., University of Pittsburgh; professor of Spanish and interim assistant vice president for Academic Affairs

Gardner, Rick M., 1969; BA, Humboldt State University; MA, Ph.D., University of Nevada; professor of psychology

Gashler, Franz P., 1985; BS, University of Southern Colorado; master control operator, Telecommunications Division

Genty, Don A., 1970; BSBA, Carroll College; MBA, University of Denver; manager of sponsored programs, accounting

Gerber, Gerald I., 1969; BA, Buena Vista College; M.Ed., Colorado State University; director of Career Services and Counseling

Gerig, Robert C., 1983; BJ, University of Missouri; MA, Central Missouri State University; assistant general manager and program director, Telecommunications Division

Gilbert, Gail L., 1980; BS, Texas Women's University; ADN Texarkana Community College; BSN Metropolitan State College; MSN, University of Texas at Arlington; assistant professor of nursing

Gill, John P., Jr., 1971; BS, University of Georgia; MA, University of Alabama; Ph.D., Colorado State University; professor of mathematics

Gloe, Esther M., 1981; BA, University of Missouri at Kansas City; MA, M.Ed., University of Oklahoma; Ph.D., Oklahoma State University; assistant professor of English

Goodman, Jon B., Lieutenant Colonel, U.S. Army; 1985; BS, United States Military Academy; MA, University of Southern California; professor of Military Science

Graham, Robert E., 1980; BS, University of Tulsa; MS, Ph.D., University of Arkansas; associate professor of physics

Green, Pearl (Penny) A., 1982; BA, City College of New York; MA, Ph.D., Southern Illinois University; assistant professor of sociology

Greet, Richard J., 1983; BEE, Rensselaer Polytechnic Institute; MS, Ph.D., Harvard University; professor of mechanical engineering technology

Griffin, John R., 1963; BS, MA, Xavier University; Ph.D., Ottawa University; Ph.D., Trinity College; professor of English

Gutierrez, James M., 1978; BA, University of Southern Colorado; MA, New Mexico Highlands University; assistant professor of education

Haering, Charles L., 1971; BA, The Colorado College; MA, Western State College; assistant professor of physical education, head track coach

Hamidzadeh-Eraghi, Hamid Reza, 1983; BSc, Ayra Mehr University; MSc, Ph.D., Imperial College of Science and Technology (University of London); assistant professor of mechanical engineering technology

Hammer, Charles R., 1964; BA, Ph.D., University of Utah; associate professor of chemistry

Hammond, William A., 1957; BSBA, MBA, University of Denver; professor of accounting

Haskin, Daniel L., 1985; BS, Western Texas State University; BBA, MS, Ph.D., Texas Tech University; associate professor of accounting

Hearn, June L., 1967; BA, Rice University; MS, Iowa State University; assistant professor of psychology

Hench, Robert W., 1965; BFA, University of Denver; MA, The Colorado College; associate professor of art

Hernandez, Carl, 1984; master control operator, Telecommunications Division

Herrmann, Scott J., 1968; BS, Northern Illinois University; Ph.D., University of Colorado; professor of biology

Hill, Richard H., 1982; BA, University of Northern Colorado; M.Ed., Colorado State University; Ph.D., University of Wyoming; dean, Student Services

Hill, Warren R., 1981; BSE, University of Nebraska; MSEE, Wayne State University; Dr. Engr., University of Detroit; associate professor of electronics engineering technology

Hirth, Alan, 1975; BA, University of Colorado; assistant professor of civil engineering technology

Holderness, Ward L., 1969; AAS, BS, Southern Colorado State College; assistant professor of civil engineering technology

Hostetler, Charles E., 1964; BA, MA, University of Northern Colorado; Ed.D., University of Denver; professor of education

Hughes, Cornelius G., 1976; BA, Belmont College; MA, California State University at Northridge; Ph.D., The Pennsylvania State University; associate professor of sociology

Hutchison, Scott, 1984; master control operator of Telecommunications Division

Illick, Peter M., 1971; BA, University of Vermont; MA, University of Wyoming; assistant professor of English

Janes, Donald W., 1963; BA, Baker University; MA, University of Kansas; Ph.D., Kansas State University; professor of biology

Jenkins, Robert B., 1972; BS, University of Washington; ME, The Pennsylvania State University; professor of electronics engineering technology

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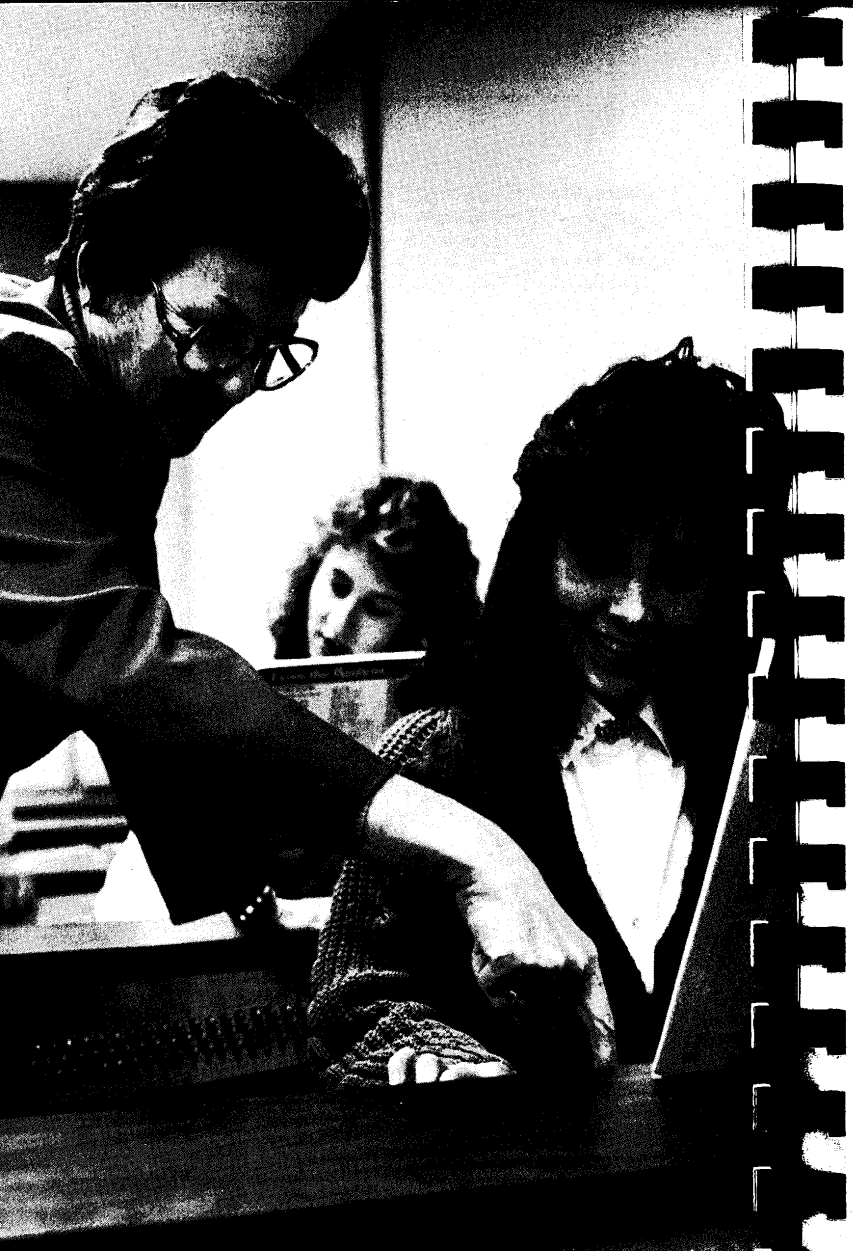

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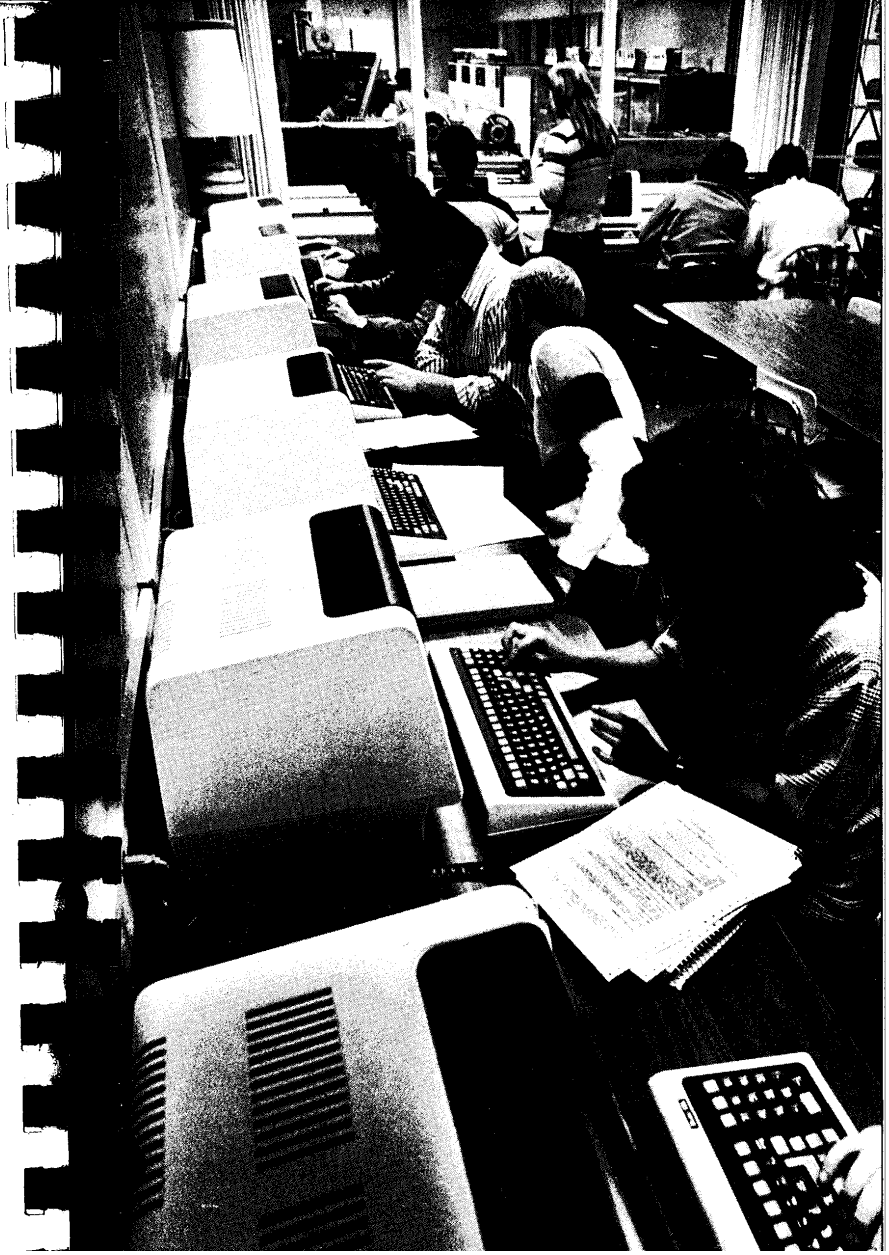

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