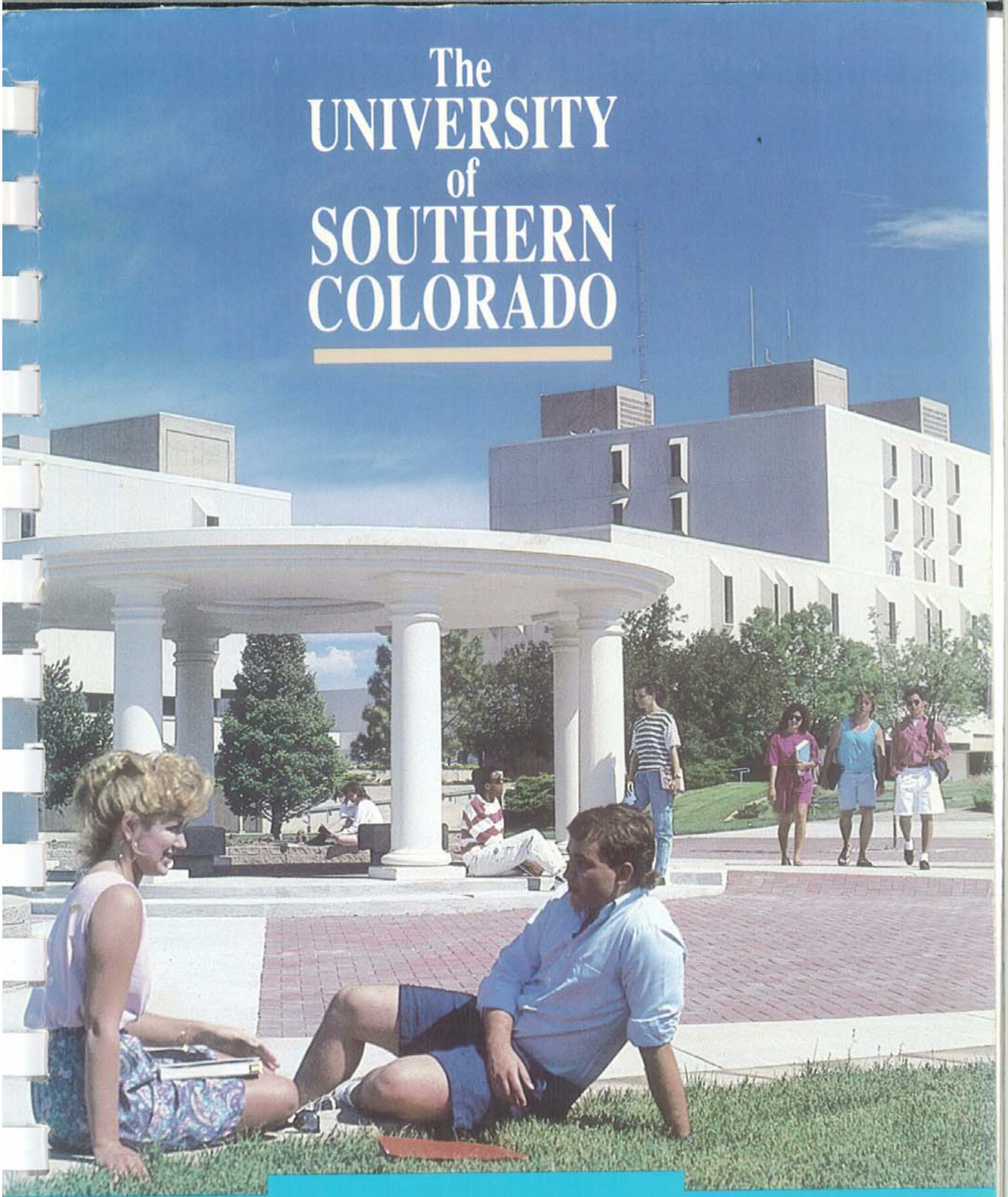
The UNIVERSITY of SOUTHERN COLORADO



BULLETIN

1990/1992

1990-92

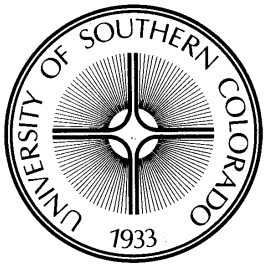
BULLETIN

catalog issue

Pueblo, Colorado
Vol. XXVII 7/90 No. 4

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 a.m. to 5 p.m. Monday through Friday. Please call or write the admissions office in advance of your visit.



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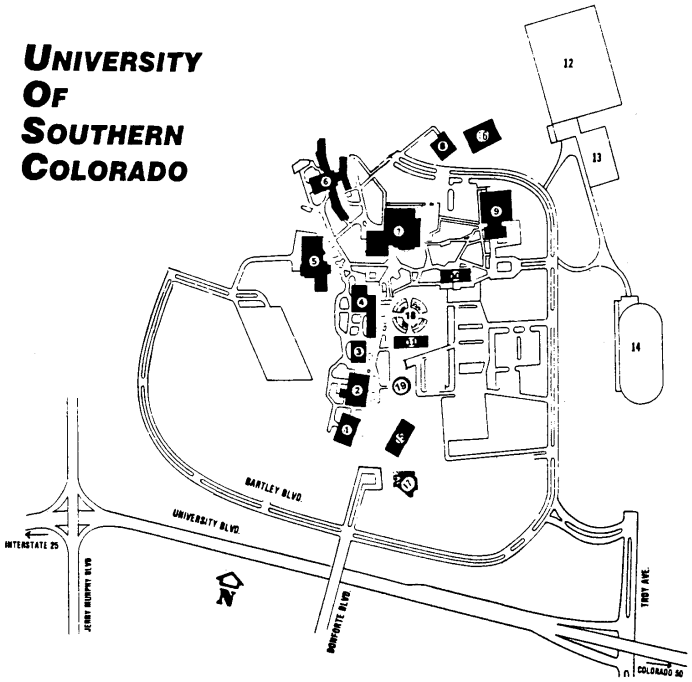

1. Physics/Mathematics building
2. Life Sciences building
3. Chemistry/Geology building
4. Library building
5. Art/Music building
6. Belmont Residence Hall
7. Joseph Occhiato University Center
8. Heating Plant
9. Health, P.E. and Recreation building (Massari Gymnasium)
10. Administration building
11. Psychology building
12. Field - baseball
13. Tennis courts
14. Field - football and track
15. Technology building
16. Physical Plant building
17. Buell Communications Center
18. University Fountain Plaza
19. McKinney Pavilion

The University of Southern Colorado does not discriminate on the basis of race, color, national origin, sex, age, or handicap in admission or access to or treatment of employment in its educational programs or activities. Inquiries concerning Title VI, IX, and Section 504 may be referred to: Affirmative Action Director, University of Southern Colorado, 2200 Bonforte Boulevard, Pueblo, Colorado 81001-4901, phone 719-549-2936 or Office for Civil Rights, Department of Education, 1961 Stout Street, Denver, Colorado 80294.

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XXVII **July 1990** **No. 4**

The University of Southern Colorado Bulletin (USPS 857-100) is published four times a year; two times in March, once in July and once in November. Second-class postage paid at Pueblo, Colorado 81003. POSTMASTER: Send address changes to the UNIVERSITY OF SOUTHERN COLORADO, Office of Admissions and Records, 2200 Bonforte Boulevard, Pueblo, Colorado 81001-4901.

THE UNIVERSITY

HISTORY

The University of Southern Colorado has served the changing needs of the citizens of Colorado for more than 50 years.

In 1933, the institution 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 on the Orman Avenue campus site was donated by the Colorado Fuel and Iron Corporation. One year later, local citizens decided to support the institution with county taxes; they organized the Pueblo County Junior College District, and the institution 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 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 of the University. In 1986, USC, Colorado State University and Fort Lewis College joined to form the Colorado State University System.

MISSION

The University of Southern Colorado, in accordance with the mission defined by the Colorado Commission on Higher Education in 1978 and revised in 1985, provides a unique contribution to higher education in the state. USC strives to become an **excellent regional university** with a polytechnic emphasis, continuing its tradition of teaching effectiveness and increasing its efforts in basic and applied research while maintaining a high degree of service to the citizens of Pueblo, the region and the state.

USC is an accredited institution with a specific mission: 1) to emphasize career-oriented, technological and applied programs, while maintaining strong programs in the liberal arts; 2) to engage in basic and applied research for the benefit of society; and 3) to function as the major educational resource for cultural, industrial and economic growth throughout the southeastern Colorado region.

The university places special emphasis on polytechnic education: the preparation of men and women for useful and productive careers in a technological society. This special component of the university's mission focuses strongly on career preparation because students must be provided with the technical knowledge and skills necessary for meaningful work. The polytechnic mission also demands a commitment to the liberal arts if students are to be broadly educated and knowledgeable about the diverse forces at work in our society, both historically and in modern times.

High-quality teaching is the number one priority at the University of Southern Colorado. Student development is of primary concern. At the same time, faculty engage in scholarly activity to add to the store of knowledge in various disciplines and fields, and apply that knowledge to solving community and regional problems. Faculty involvement in research as well as in scholarly and creative activities substantially enhances the quality of teaching at the university.

In addition to the primary emphasis on teaching and the accompanying obligation to engage in scholarly endeavors, the university is committed to serving the surrounding community and region. The service obligation is fulfilled primarily through the processes of teaching and research, since the outcomes of those activities significantly address the needs of society. However, as a regional university which strives for excellence, we contribute to the overall quality of life and economic growth in our surrounding environment by sponsoring cultural events, clinical activities, student internships, research on community and business problems, and other special means of interaction.

To enhance its overall relationship with the city and region, the university is strongly committed to providing access for members of all minority groups, particularly the large Hispanic population within its service area; emphasizing and fostering cultural pluralism; enhancing the traditions of culture and language; encouraging the development of economic opportunities; providing appropriate academic support programs and ensuring equal opportunity for all persons who are, or may become, members of the university community.

Thus the university's mission has three components: teaching (the primary emphasis), scholarly activity (necessary to the advancement of knowledge and to high-quality teaching) and service (contributing to the development of the city and region).

GOALS AND PRIORITIES

In fulfilling its basic mission, the university regularly establishes long-range and short-term goals. Students, faculty, staff and administrators actively work together to achieve such important goals and to establish priorities for the institution's future. Copies of the most recent strategic plan are available for inspection in the Office of Planning and Budgeting.

GOVERNANCE

As part of the Colorado State University System, the University of Southern Colorado is governed by the State Board of Agriculture, which also governs Fort Lewis College in Durango and Colorado State University in Fort Collins. The Colorado Commission on Higher Education, the central policy and coordinating board for all public institutions, establishes policy on legislative, academic and fiscal matters.

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.

Individual programs approved by accreditation agencies include: chemistry, the American Chemical Society; engineering technology, the Accreditation Board for Engineering and Technology; education, the National Council for Accreditation in Teacher Education and the Colorado State Board of Education; music, the National Association of the School of Music; nursing, the National League for Nursing; and social work, the Council of Social Work Education.

AFFIRMATIVE ACTION/EQUAL OPPORTUNITY COMMITMENT

The University of Southern Colorado does not engage in unlawful discrimination in employment against any person because of race, color, religion, sex, national origin, age, handicap, or veteran status. Also, the university takes affirmative action to ensure that protected class applicants are employed and that all employees are treated during employment without any regard to their race, color, religion, sex, national origin, age, handicap, or veteran status, in accordance with the laws of the United States and

the State of Colorado. Such action includes, but is not limited to, affirmative efforts with respect to employment, promotion, transfer, recruitment, advertising; layoff, retirement, or termination; rate of pay or other forms of compensation; and selection for faculty development activities. The university posts in conspicuous places notices setting forth the provisions of nondiscrimination policy, affirmative action plans and programs, and equal opportunity commitments.

The University of Southern Colorado does not discriminate on the basis of race, color, national origin, sex, age, or handicap in admission or access to, or treatment of, employment in its educational programs or activities. Inquiries concerning Title VI, IX, and Section 504 may be referred to: Affirmative Action Director, University of Southern Colorado, 2200 Bonforte Boulevard, Pueblo, Colorado 81001-4901, phone 719-549-2936 or Office for Civil Rights, Department of Education, 1961 Stout Street, Denver, Colorado 80295.

THE CAMPUS

USC's campus, spanning more than 275 acres, crowns the north end of Pueblo, an historically and culturally rich city of 100,000 located near the Greenhorn Mountains in the colorful Pikes Peak region of southern Colorado.

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.

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 exceeds 4,000 students from throughout southeastern Colorado, the state, the nation and several foreign countries, representing a diversity of age groups and backgrounds, both rural and urban.

TERMS OF THIS CATALOG ISSUE

Students graduate under the catalog requirements noted in the *Academic Policies* section of this catalog. The 1990-92 issue becomes effective fall semester, 1990. Information contained within the catalog is current as of April 1990, but is subject to change without notice and therefore is not to be regarded as an irrevocable contractual commitment. Modification may occur at any time during the student's term of residence in the interest of lawful missions, processes and functions of the institution. The university will make reasonable efforts to inform students of any modifications occurring prior to publication of the 1992-94 catalog issue.

ADMISSION

The University of Southern Colorado welcomes applications from all persons interested in post-secondary education. The Office of Admissions, located in the Administration building, is the visitors' center for the university. Prospective students may obtain information about all USC programs, as well as university admission 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 admission and campus visits should be addressed to the Office of Admissions, USC, Pueblo, CO 81001-4901.

ENTERING FRESHMEN

Admission standards. The University of Southern Colorado's admission process is designed to promote diversity within the student population and to assure equal access to qualified applicants. The final admission decision is based on the applicant's potential for attaining a degree at the university.

First-time applicants are eligible for consideration for admission to the University of Southern Colorado if they achieve a CCHE admissions index score of 79 or higher. This score can be achieved by various combinations of high school grade-point average and ACT composite or SAT combined scores. Such combinations include:

High School GPA	Minimum ACT	or	SAT Composite
2.0	22		890-981
2.2	21		820-850
2.5	18		700-720
2.7	17		650-660
3.4	12		570-600

If applicants do not achieve an index score of at least 79, their credentials will be reviewed by an admissions committee, which will base a recommendation for admission on:

a) the applicant's academic and personal potential to benefit from or contribute to university programs; and,

b) the applicant's previous academic record.

Students with non-traditional backgrounds are encouraged to apply.

Admission requirements. Students may apply any time after the completion of their 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 agency issuing the GED tests forward the test scores (not the certificate) to the Office of Admissions.

Applicants must submit:

1) a completed USC application;
2) a $15 application fee (non-refundable);
3) an official transcript of high school records or GED scores; and
4) scores from either the ACT or the SAT.

NOTE: Acceptance by the university does not necessarily mean acceptance into a particular degree program, some of which 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 credits should be addressed to the Office of Admissions.

TRANSFER STUDENTS

Students who have attended other colleges or universities and are seeking admission to USC for the first time must file with the Office of Admissions an application for admission, the $15 application fee, and official transcripts from each institution attended. ACT or SAT scores and final high school transcripts also must be submitted if total transfer credits earned are less than 12 semester hours.

Transfer students must be in good standing at the institution they last attended and have at least a 2.0 cumulative grade point average. If not, their records will be reviewed and a recommendation on their admission will be made by an admissions committee.

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 of all previous college work will be subject to cancellation of enrollment.

USC accepts the Colorado Community/Junior College Common Core Curriculum of 33 (A.S.) or 34 (A.A.) credit hours for all baccalaureate degree candidates with the understanding that to graduate from USC students must satisfy the university's academic requirements as stated in the Academic Requirements section in this catalog.

Transfer Agreements. The Colorado State University system is dedicated to the concept of guaranteed transfer opportunities for students enrolled at any of the system's three campuses: the University of Southern Colorado, Fort Lewis College and Colorado State University. For a complete list of transfer agreements in effect, students should contact the Office of Admissions.

In addition, USC maintains transfer agreements with the two-year institutions in Colorado. Information on these agreements, which include course equivalencies, is available in the Office of Admissions.

Transfer of credit. Credit is accepted by USC from regionally accredited institutions recognized by the American Association of Collegiate Registrars and Admission Officers. USC accepts a maximum of 64 semester hours from community or junior colleges and/or a maximum of 96 semester hours from senior colleges for credit toward degree requirements.

Grades of D and F are not accepted, with one exception. Grades of D are accepted in transfer of the Colorado Community College and Occupational Educational System General Education Core Courses if the student has fully completed either an A.A. or A.S. degree and has attained at least a 2.0 cumulative grade point average in completion of the associate's degree.

The University of Southern Colorado accepts the Colorado Community College and Occupational Educational System General Education Core Transfer Program (33 credit hours for the A.S. or 34 credit hours for the A.A. degree) as a substitute for the university's lower-division institutional and general education requirements for each student who has completed that core curriculum.

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

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.

A maximum of 30 hours of correspondence and/or extended studies 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 counted toward a baccalaureate degree. Credit is not given for military service work experience.

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 applicability to major requirements.

Transfer students should be aware of the 10-year time limit on credit earned toward a bachelor's degree, which applies to both transfer and resident credit. (Additional information appears in the *Academic Requirements* 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.

Transfer Evaluation Appeals Process. If the student disputes the university's evaluation of credits from other Colorado public institutions, the student must file a written appeal with the director of Admissions and Records within 15 class days of receiving the evaluation. The student will receive a written response from the director of Admissions and Records within 15 days of receipt of the appeal. If the student fails to file an appeal within the 15-day period, the decision made in the transfer evaluation will be binding.

If this action does not resolve the dispute, the student may appeal in writing to his/her transfer institution within 15 class days of receipt of the USC response. The institutions will attempt to resolve the dispute within 30 class days of receipt of appeal by the transfer institution. Agreement between the transfer institution and the university will constitute a final and binding decision. USC will communicate the decision to the student in writing.

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 unless otherwise approved in writing by the appropriate department chair and dean. If a student has taken humanities or social science classes before taking CLEP tests, those credits are deducted from the CLEP credits.

INTERNATIONAL STUDENTS

Students who are residents of another country must submit the following to be admitted to USC:

1) The official application for university admission, accompanied by a $15 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 no institutional funds are 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 change policy. Exceptions are at the discretion of the director of Admissions and Records.

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.

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 in which they wish to enroll. Students who withdraw, or are withdrawn, from the university for any reason and are subsequently readmitted after an absence of two or more semesters are governed upon readmission by the catalog current at the time of readmission. Any exceptions to the policy

must have prior approval from the provost. Degree-seeking students who have attended another post-secondary institution or have taken college-level correspondence or extended studies courses must provide complete official transcripts of such studies.

The application fee is not required of undergraduates who are readmitted to the university as degree-seeking students.

ACADEMIC RENEWAL

Students who return to the University of Southern Colorado after an absence of at least two years, and have not attended full-time at any other college or university, may request academic renewal at the time of readmission to the university. Students who take advantage of the Academic Renewal Policy will not have grade-point averages carried forward upon readmission, and courses with grades of D or F will not count toward graduation.

Students who seek readmission to the university after an absence of 10 years or more will not have grade-point averages carried forward. Any college credit earned more than 10 years before the date of readmission is not applicable toward the degree desired unless approved by the chair of the department offering the course(s) [or equivalent(s)], and by the appropriate dean.

Students who elect Academic Renewal will be required to complete at least 32 hours of credit after readmission before they are eligible for a baccalaureate degree.

UNCLASSIFIED STUDENTS

Students may enroll at the University of Southern Colorado as unclassified (non-degree seeking) students if they fall into one of the following categories.

Special Student: Special student status is reserved for applicants who are 20 years of age or older and who wish to enroll in courses without degree-seeking status. Applicants who wish to register as special students are required to file an application with the Office of Admissions each term that they wish to enroll.

A special student may carry up to 15 hours per semester and may earn a maximum of 30 semester hours while maintaining special student status. The student must maintain a 2.0 cumulative grade-point average as a special student. Special students who wish to exceed the 30-semester-hour maximum may file a petition with the Office of Admissions. However, no more than 30 semester hours may be applied to the baccalaureate degree should the student decide to become a degree candidate.

Degree-Plus Student: Non-degree-seeking students who have completed a baccalaureate degree may enroll as unclassified degree-plus students after filing the appropriate application with the Office of Admissions.

Guest Student: Students who are enrolled as degree candidates at other institutions of higher education may enroll for the summer term at the University of Southern Colorado as guest students. Guest students must complete the appropriate application with the Office of Admissions.

High School University Program: High school seniors may register for classes at the university. Students must submit an admission application approved by their high school counselor, principal and parents for each term they wish to enroll. In some cases, the high school district may pay students' tuition. Information on such programs is available in the Office of Admissions.

Senior Citizens: Persons 65 years of age or older, or 62 and retired, may audit courses on a space-available basis without paying tuition. Permission of the instructor is required.

Unclassified students are ineligible to receive financial assistance from the university, including aid from all federal and state financial assistance 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 in the Administration building.

ADMISSION PROCEDURES

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 1990-92 are:

Fall Semester 1990	July 20, 1990
Spring Semester 1991	November 30, 1990
Summer Session 1991	April 26, 1991
Fall Semester 1991	July 19, 1991
Spring Semester 1992	November 30, 1991
Summer Session 1992	April 25, 1992

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 Counseling and Career Services, Room 236 of the Psychology building.

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

Payment of tuition and fees. Tuition and fees are assessed in accordance with approved policies. Instructions for payment and payment deadlines are stated in the class schedule bulletins. 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 records office.

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 established 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.

RESIDENCE CLASSIFICATION

A person moving to Colorado must be domiciled in the state for 12 continuous months before becoming 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 relevant point is that one retains a former domicile until a Colorado domicile is established by the 12-month residency.

Intent is determined by:

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

2) documented evidence of overt actions that link the student to Colorado.

Examples which establish intent are: payment of Colorado state income tax, a Colorado driver's license, Colorado motor vehicle registration, the compliance with 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 nonresident 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 the semester. The governing board normally acts on tuition and fee charges at its June meeting prior to the start of an academic year. Current information can be obtained from the university controller at (719) 549-2232. Tuition and fees per semester for 1989-90 were as follows:

Resident

No. of hours	Tuition	Fees	Total
1	$ 63	$ 13.86	$ 76.86
2	126	27.72	153.72
3	189	41.58	230.58
4	252	55.44	307.44
5	315	69.30	384.30
6	378	83.16	461.16
7	441	97.02	538.02
8	504	110.88	614.88
9	567	124.74	691.74
10-18	630	138.60	768.60

Tuition surcharge for each hour over 18: $42

Nonresident

No. of hours	Tuition	Fees	Total
1	$ 250	$ 13.86	$ 263.86
2	500	27.72	527.72
3	750	41.58	791.58
4	1,000	55.44	1,055.44
5	1,250	69.30	1,319.30
6	1,500	83.16	1,583.16
7	1,750	97.02	1,847.02
8	2,000	110.88	2,110.88
9	2,250	124.74	2,374.74
10-18	2,499	138.60	2,637.60

Tuition surcharge for each hour over 18: $167

OTHER SPECIAL FEES

The following are examples of special fees approved for the 1989-90 academic year. (The parking fee has been approved for 1990-91.) For a complete list of special fees, contact the university controller at (719) 549-2232.

Original student/faculty/staff identification card ..... $ 3
Identification card replacement 5
Faculty/staff identification card validation 11
Fee to activate placement file-per packet 3
General Education Development tests-battery 30
Parking permit (per year) 24
Parking permit replacement 2
Returned check charge 15
Application fee 15
Transcript fee 2
Credit by Examination (per course) 50
Music fee (per lesson credit hour) 30
Television production fee 25

Physical education fee-designated classes per semester
Bowling 20
Scuba Diving 55
Training Room 25
Windsurfing 35
Ice Skating 20
Skiing 95
General fee 3

ROOM AND BOARD RATES

(Subject to change by governing board action)

Occupancy and damage deposit $100
The deposit is required with each application for space in the residence hall and is held for the duration of occupancy.

Room (per semester, 1989/90)
Single (continuing residence hall student) ..... $ 965
Single (incoming student) $1,014
Double (continuing residence hall student) ..... $ 645
Double (incoming student) ..... $ 678
Board (per semester) ..... 19-meal plan ..... $ 893
..... 14-meal plan ..... $ 863
..... 10-meal plan ..... $ 830

Room and Board (10-week summer semester, estimated)
Single room ..... $ 550
Double room ..... $ 367
..... 15-meal plan ..... $ 400

Room and Board (5-week summer semester, estimated)
Single room ..... $ 325
Double room ..... $ 215
..... 15-meal plan ..... $ 280

PAYMENT OF STUDENT ACCOUNTS

Tuition and fees are calculated according to the number of credit 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 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: Students will not be permitted to register for subsequent terms until all debts have been paid.

ADDITIONAL PROCEDURES

Additional admissions procedures are published before the beginning of each semester in the class schedule bulletin. The procedures described include the distribution of financial aid, payment-due date, drop/add and withdrawal, administrative withdrawal for non-payment and refund policies. Students will be held responsible for adhering to the policies and procedures contained in that publication.

DELINQUENT STUDENT ACCOUNTS

Students who do not pay tuition and fee charges for the current semester **will not** receive grades and will not be permitted to register for subsequent semesters.

ADJUSTMENTS

The Tuition Adjustment Appeals Committee will consider requests for adjustment to billed tuition and fee charges when a student must withdraw due to extenuating circumstances. Please see the semester class bulletin for procedures on how to file an appeal.

FINANCIAL ASSISTANCE

Financial aid is a resource for students and their parents to seek monetary assistance to help defray the costs of higher education. Eligible students who demonstrate financial need may receive assistance from either a grant, loan, work-study or scholarship funds. Students may obtain applications and other necessary forms from the Office of Financial Aid, Room 309 of the Administration building.

The primary responsibility of paying for education rests with students and their families; assistance offered through the university is intended to supplement the family contribution. Requests for assistance always exceed the funds available, and federal monies are related to documented financial need. Therefore, the Office of Financial Aid requires students to follow the instructions for applying for aid outlined in the Student Financial Aid Handbook available in their office.

FINANCIAL AID POLICIES

Student s must complete all necessary forms and submit the required documents to be considered for financial aid. Full-time students receive funding priority.

Funds are awarded with consideration for high need first, then moderate to low need.

When to apply (priority filing date). To be considered for financial assistance, students must complete **either** the Financial Aid Form (FAF) Need Analysis Report processed by College Scholarship Service **OR** the Family Financial Statement (FFS) processed by the American College Testing Program. Processing of either of the applications requires approximately 30 days. Therefore, to meet the file completion deadline for any fall semester, students must mail the FAF or FFS by March 1 of each year.

The USC Office of Financial Aid requires a separate institutional application for aid recipients. This application, the FAF or FFS Need Analysis, and other required documentation must be in the financial aid office on or before the following file completion dates:

Summer:	April 16
Fall - Spring:	May 16
Spring:	November 30

Requirements for processing an application. To have an application processed and be considered for financial assistance, students must:

1) be accepted for admission to USC as a degree-seeking (classified) student; and

2) have a complete financial aid file.

Continuing students must be in good standing and comply with the financial aid Satisfactory Progress Policy, and must apply each year.

Students may **not** receive financial aid if they are:

1) on financial aid or academic suspension;

2) in default on student loans or owe repayment on grants previously received to attend USC or other institutions, or if parents are in default on a PLUS loan; or

3) not citizens or permanent residents of the United States.

Definition of 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 Financial Aid.

For more detailed information on financial aid policies, contact the Office of Financial Aid for a copy of "Satisfactory Academic Progress Policy for Financial Aid."

FINANCIAL AID PROGRAMS

GRANTS

Pell Grant. A Pell Grant is an award to help undergraduates pay for their education after high school. For the Pell Grant Program, an undergraduate is one who has not earned a bachelor's degree.

For many students, Pell Grants provide a "foundation" of financial aid, to which aid from other federal and non-federal sources may be added. Unlike loans, grants do not have to be paid back.

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 with a five-year limit.

Colorado Student Grant (CSG). The CSG is awarded to undergraduate residents on the basis of financial need. The amount of this grant cannot be greater than $2000 an academic year and generally will not exceed one-half the documented financial need.

Supplemental Education Opportunity Grant (SEOG). The SEOG is a form of non-repayable financial aid and is designed to assist undergraduate students with exceptional need. Awards may not exceed $4000 per year.

State Student Incentive Grant (SSIG). The SSIG is awarded to undergraduate resident students on the basis of financial need. Stipends attached to the award are usually not greater than $2500 per academic year and generally will not exceed one-half of the documented financial need.

WORK-STUDY

College Work-Study Program (CWSP). The CWSP is designed 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 approximately 800 students in the work-study program.

Full-time work-study. Full-time work-study is a program designed to provide students with employment during the summer. Some of the earnings from the employment must 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 degree-seeking (classified) students;
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 date;
4) save a major portion of their earnings to assist with next year's educational expenses; and
5) forego enrollment in summer classes.

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 limited to students who have specified work opportunities on campus which will provide valuable 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 (FAF) or the American College Testing Program Family Financial Statement (FFS). Students should not assume that they will be found ineligible for need-based financial aid. Those who are declared ineligible, however, may qualify for the no-need work study.

LOANS

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

Students may be eligible to borrow up to a total of:

- $4500 if they are enrolled in the first two years of a degree program, or have completed less than two years of a program leading to a bachelor's degree;
- $9000 if they are undergraduates who already have completed two years of study toward a bachelor's degree and have achieved third-year status (total includes any amount borrowed under Perkins Loan or NDSL for the first two years of study);
- $18,000 for graduate or professional study (total includes any amount borrowed under Perkins Loan or NDSL for undergraduate study).

Repayment of the loan begins nine months after students graduate or leave school. Students 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 university may agree to a lesser amount because of extraordinary circumstances such as prolonged unemployment.

In case of default on an a Perkin's Loan which the university is unable to collect, the federal government may take action to recover the loan. Questions about the terms of loan, repayment obligations, deferment or cancellation should be directed to the financial aid office or to the accounting office.

Stafford Loan (formerly GSL). A Stafford Loan 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. For new borrowers who receive loans for periods of enrollment beginning on or after July 1, 1988, the interest rate is 8 percent for the first four years of repayment and 10 percent after that. For new borrowers who took out a loan between July 1, 1987, and June 30, 1988, the interest rate is 8 percent.

For students who are not new borrowers and who currently have a 7, 8 or 9 percent Guaranteed Student Loan, the interest rate(s) for any Stafford Loans borrowed in the future will remain 7, 8, or 9 percent. To be sure what your interest rate is, check your promissory note.

A freshman and sophomore can borrow up to $2,625 each year. A junior or senior can borrow up to $4,000 each year. A graduate student can borrow up to $7,500 a year (In some states these amounts may be less). At no time can the amount of a Stafford Loan exceed the student's financial need; therefore, the amount borrowed may be less than the amounts indicated above.

The total aggregate amount of a Stafford Loan that an undergraduate may borrow is $17,250; the total a graduate or professional student may borrow is $54,750 (including any Stafford Loan borrowed as an undergraduate student).

A Stafford Loan application may be obtained from a private lender, the Office of Financial Aid, or a guarantee agency.

Borrowers placed on financial aid suspension are not eligible for a GSL and the lender will be notified.

NOTE: Applicants for Stafford Loans must complete the Financial Aid Form (FAF) (Needs Analysis), or CFAR and submit it to the College Scholarship Service.

PLUS loans. PLUS loans are meant to provide additional funds for secondary educational expenses. The interest rate for PLUS loans is 10.45 percent. PLUS applications may be obtained through participating banks or credit unions.

Parents of dependent undergraduate students may borrow up to $4,000 per year to a total of $20,000 for each child who is enrolled at least half-time and is a dependent student. The borrower (parent) must begin the monthly repayments of a PLUS loan 60 days after the check is received.

The parent may request deferments of repayment under certain conditions established by the Colorado Student Loan Program

Supplement Loan for Student (SLS). This loan is available for independent students to help pay for the cost of higher education. The interest rate is 10.45 percent. Independent students can borrow $4,000 per year, up to an aggregate amount of $20,000. SLS borrowers begin repayment within 60 days of disbursement. Principal (loan amounts) repayment may be deferred. Interest payments, if deferred, will be capitalized (added to the principal balance).

NOTE: PLUS and SLS applications must be submitted to the financial aid office for completion of the "school" section before mailing to the lender. SLS requires completion of the Financial Aid Form prior to submission of the SLS application.

For additional information on PLUS or SLS contact: Colorado Student Loan Program, (303) 450-9911; or the USC financial aid office.

Short-term loan. Short-term loans are intended only for those financial emergencies that present extreme hardship which could not reasonably be foreseen and which seriously threaten the continuation of students' enrollment at the university.

Students must be currently enrolled for at least 12 semester credits, must be in good standing and must not have an unpaid university account. Short-term loans will not be made at any time when the university is not in session.

Short-term loans will not be made to students who are in their first semester at USC (freshmen and transfer students). Maximum loan amount is $100 per semester.

Loans are to be repaid within a short period of time (normally within 60 days). 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 Financial Aid. A $3 fee assessed for processing the loan, will be deducted from the loan amount.

SCHOLARSHIPS

USC President's Scholarship. The President's Scholarship is designed to provide recognition for outstanding academic performance and talent (art, creative writing/journalism, music, speech/theatre) and is awarded to undergraduate Colorado residents who are graduates of Colorado high schools, community or junior college transfer students or continuing students at USC. The amount of the award 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. Grade-point averages of transfer students are not considered in determining cumulative grade-point averages. 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 may be awarded to non-resident (out-of-state) students provided they meet all established criteria. Applications are available in the financial aid office.

Private scholarship program. The University of Southern Colorado Foundation administers many scholarships awarded by corporations, businesses, foundations, individuals and other private sources. 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 the USC Foundation. Still other awards for designated scholarships are made by the USC scholarship committee.

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;
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. Information about most scholarships is available at the USC Foundation office, 317C Administration building, phone 549-2380, and from high school counselors.

ADDITIONAL ASSISTANCE PROGRAMS

Student employment services. The Office of Financial Aid provides a Job Locator and Development (JLD) program designed to encourage the development and expansion of off-campus part-time employment opportunities for all students, regardless of financial need. Additional information on the JLD program can be obtained in the financial aid office.

Veteran's benefits. All students who expect to receive veteran's or dependent's educational 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 319 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. For additional information, write to: Joseph Gregory, Scholarship Office, U.S. Department of Interior, Bureau of Indian Affairs, P.O. Box 370, New Town, North Dakota 58763.

Disabled/handicapped students. The Office of Counseling and Career Services, Room 236 of the Psychology building provides information and limited services for disabled and handicapped students.

REFUNDS AND REPAYMENTS

Students may have to refund or repay financial aid if they withdraw. If financial aid recipients become 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 financial aid awards before any payment is made. 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.

Example - Refund and Repayment

Jennifer received the following financial aid per semester:

Pell	$1000
CSG	$ 250
GSL	$1250
Scholarship	$ 500
Student Contribution	$ 500
Total	$3500

Jennifer withdrew the 6th week of the semester; therefore, she is entitled to a 40 percent adjustment (possible refund) on tuition and fees.

Total tuition/fees	$706	
due for 6 weeks	$423.60	(60% due)
Total refund adjustment	$283	

The $283 is refunded to the federal and state financial aid programs, not to Jennifer. In this example, Jennifer earned the rest of her financial aid for room/board and other expenses; she does not have to repay those funds.

There is **no** refund or repayment adjustment after the ninth week of classes. Depending on the week of withdrawal, budget, and total financial aid, a repayment also may be expected from a student who withdrew before the end of the ninth week.

Upon withdrawal, students must report their last day of attendance to the financial aid office. **This date will be verified with the instructor**.

STUDENT LIFE AND DEVELOPMENT

PROGRAMS, SERVICES, AND POLICIES

The Division of Student Life and Development operates a number of offices, facilities, programs and organizations which exist primarily to enhance and support students' academic lives at the university.

HOUSING

Belmont Residence Hall (BRH) houses nearly 500 on-campus students. It is a modern, multi-story building consisting of three wings which are joined by a large commons area. A main lounge serves as a gathering area, a movie theater, and a large-screen satellite television viewing area. 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 full-service laundry room. Belmont Residence Hall also has computer terminals for use by residents only.

All rooms are designed for two people, although single occupancy is available. Rooms contain beds, desks, bookshelves, study lamps, closets, dressers, and chairs. Linen service is available for a nominal charge.

Freshman live-in policy. All full-time (enrolled for 12 or more hours), single, non-veteran freshman students under 21 years of age, enrolled in any university program must live in the residence hall and participate in one of three meal plans. Students who make application to USC with permanent

home addresses and high school transcripts from communities that are within a 50-mile radius of the campus are exempt from the live-in requirement. Applications for appeals from the live-in requirement are due by the first day of classes each semester.

A $100 security/damage deposit must accompany each application for space in the BRH. 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. Presently, no housing is available on campus for married students. Married students should contact the Joseph Occhiato University Center office (Room 113) for referral to housing in the community.

Contract board policies. Belmont 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 Joseph Occhiato University Center office maintains a file of off-campus, privately owned rooming houses and apartments. Since listings change rapidly, prepared housing lists are not furnished.

FOOD SERVICE

Most campus food services are located in the Joseph Occhiato 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 Joseph Occhiato University Center and is open weekdays.

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, Joseph Occhiato University Center, Room 114.

COUNSELING AND CAREER SERVICES

The counseling and career services department, located in Suite 236 of the Psychology building, houses many services available to student.

Academic and Career Advisement. The Advisement Center is open throughout the academic year to assist undeclared and unclassified students with course and major selection. Professional career counseling is provided to assist students in making academic decisions and vocational choices. Standardized testing instruments are administered to evaluate an individual's interests and potential, and career materials are provided to promote career awareness and understanding. Once committed to an academic major, students are referred to faculty members in their major field for advising.

Career Development and Placements. The Placement Center provides resources and information to help potential graduates and alumni find career-related employment. On-campus career recruitment interviews are scheduled through the center. Information on career-related work experiences, cooperative education opportunities, and internships is available to assist undergraduate students with career development. The Career Resource Center provides written and video materials on employer organizations, as well as on job search strategies.

Counseling. USC provides professional counseling services for students with personal, social, or wellness concerns. This includes crisis intervention and referral services. In addition, student discussion groups, seminars and workshops are offered.

Handicapped Services. The USC campus is accessible to disabled persons and the Belmont Residence Hall provides adequate living facilities for handicapped students. Individualized support services such as readers, tutors, note-takers and interpreters are available for qualified students. All handicaps, including learning disabilities, are eligible for support.

Orientation. A program of orientation for new and transfer students is offered during the summer and at the beginning of each semester. Orientation acquaints students with the unique characteristics of the university and introduces important policies and procedures. The program also offers academic advising and early registration for classes. All new and transfer students are urged to attend.

Testing Services. USC is a national test center for standardized tests, including ACT, SAT, GRE, GMAT, CLEP, and MAT, and provides other interest, aptitude and personality assessments.

Women's Resource Center. Many adults and re-entry students use the services of the Women's Resource Center, which includes information on university and community resources. Special programs and peer counseling are available. Staff members are particularly sensitive to the needs and concerns of non-traditional students.

OTHER STUDENT SERVICES

Orientation. At the beginning of each semester, a program of orientation for transfer and 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 and transfer 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. 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 Joseph Occhiato 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 helps students from other countries during their stay at the university. The office includes among its concerns, immigration matters, academic problems, student organizations, housing and subsistence emergencies. It is located in the Joseph Occhiato University Center, Room 160.

STUDENT ACTIVITIES

Clubs and organizations. USC students have opportunities to take part in the activities of a number of clubs, organizations, 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 Charter Committee.

Student activities. The Office of Student Activities in Room 036 of the Joseph Occhiato University Center houses the Student Activities Board, funded by student fees. The board is responsible for planning, coordinating and implementing student-oriented activities. The board is composed of several committees: Special Events, Cultural Events, Town and Gown, Ethnic and Minority Programs, On-Stage, Outdoor Programs, and Production.

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 director of Business Affairs. 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 Athletic Conference. USC sponsors the following intercollegiate sports:

Men: basketball, cross country, track and field, wrestling, golf and tennis.

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

INTRAMURALS

Intramurals involve 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.

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 319 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. Recipients also include the new Montgomery GI Bill (Chapter 30), which encompasses service personnel recently discharged and active reservists. Veterans and dependents who plan to utilize benefits ad-

ministered 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.

JOSEPH OCCHIATO UNIVERSITY CENTER

During the academic year, the Joseph Occhiato 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. Center hours are extended to accommodate events and meetings.

USC BOOKSTORE

The USC bookstore is a modern 20,000 square-foot store in the Joseph Occhiato University Center serving USC faculty, staff and students. Texts for classes, general-interest books, current magazines, classroom supplies, sundries, 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.

EDUCATIONAL RECORDS

Annual notification of rights. The university informs students annually of their rights accorded under the General Education Provisions Act, Title IV of Pub. L. 90-247 as amended. Heretofore, provisions of the act have been discussed under the headings of "The Family Rights and Privacy Act" or "The Buckley Amendment."

Prior consent for disclosure required. The university shall obtain the written consent of the eligible student before disclosing personally identifiable information from the education records of a student, other than directory information, except as provided in section 99.31 of the act.

The university may disclose personally identifiable information from the education records of a student without the written consent of the parent of the student or the eligible student if the disclosure is:

- to other school officials, including teachers, within the educational institution or local educational agency who have been determined by the agency or institution to have legitimate educational interests;
- to officials of another school or school system in which the student seeks or intends to enroll, subject to the requirements set forth in section 99.34 of the act;
- subject to the conditions set forth in 99.31-99.35 of the act.

"Directory information" includes the following information relating to a student: The student's 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.

"Education records" means those records which: 1) are directly related to a student, and 2) are maintained by the institution or by a party acting for the institution. At this institution, education records are defined as: student social security number or student number, grade reports, transcripts, disciplinary files and class schedules.

The university may disclose personally identifiable information about a student who is in attendance at the institution if the information has been designated as directory information.

The university may disclose personally identifiable information from the education records of a student to appropriate parties in connection with an emergency if knowledge of the information is necessary to protect the health or safety of the student or other individuals.

VEHICLE REGISTRATION

Students operating vehicles on campus must register their vehicles with the University Police 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 Joseph Occhiato University Center office (Room 113) during regular working hours Monday through Friday from 8 a.m. to 5 p.m. To obtain an ID, students must show a picture identification and the computer printout of a class schedule for the semester. Continuing students must have ID's validated each semester, and must present confirmation of registration.

VIOLATIONS OF LAW ON CAMPUS

To protect its educational mission, the university takes a firm and fair stand concerning violations of law on campus. The University Police are 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 regarding 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 behavior.

An offense necessitating police action also may 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-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; or
22) any fraudulent misuse of university computer hardware or software.

DISCIPLINARY PROCEDURE

The primary responsibility for administering student discipline rests with the Office of Student Life and Development. In this capacity, the dean serves as the disciplinary ombudsman who receives and investigates all disciplinary complaints in an effort to alleviate unnecessary duplication of efforts while affording to all parties equal protection of the law. The dean delegates the responsibility for administering the judicial 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 Student Life and Development provides upon request the institutions's **Standards of Conduct Handbook,** which contains a detailed explanation and description of institutional disciplinary philosophy, rules and regulations.

ACADEMIC POLICIES

Students are well advised to become familiar with the academic policies of the university. Each student owns the responsibility to comply with those policies. The Office of 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 a degree.**

CATALOG REQUIREMENTS

Students may graduate under the catalog requirements for the year in which they are first enrolled, provided they complete graduation requirements within a continuous period of no more than 10 years. If a student withdraws or is withdrawn for any reason from the university and is subsequently readmitted after an absence of two or more semesters, readmittance will be governed by the catalog current at the time of readmission. Any exceptions to this policy must have prior approval from the provost. Students should obtain and keep a copy of the catalog under which they enter or are readmitted.

Students who transfer from Colorado community or junior colleges may graduate under the catalog requirements for the year in which they are first enrolled at the transfer college, provided they maintain continuous enrollment between the transfer college and USC and complete graduation requirements within 10 years. If a student withdraws or is withdrawn for any reason from the transfer college or USC and is subsequently readmitted after an absence of two or more semesters, readmittance will be governed by the catalog current at the time of readmission.

Students in the College of Applied Sciences and Engineering Technology, however, are required to meet the degree program requirements listed in the catalog in effect at the time they are admitted to that degree program, provided they subsequently complete graduation requirements within a continuous period of no more than 10 years.

TIME LIMITATION ON CREDIT

Any college credit earned more than 10 years before the date of admission or readmission is not applicable toward the degree desired unless it is approved by the chair of the department offering the courses(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 minimum grade-point average of 3.5 and place in the upper 10 percent of all eligible full-time students. To be eligible, students must be degree-seeking and must earn at least 12 credit hours in the semester 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.

CLASS HOURS AND CREDIT HOURS

A class hour consists of 50 minutes. One class hour a week of lecture or discussion for a semester earns a maximum of one credit hour. Two or three class hours a week of laboratory activities for a semester earn a maximum of one credit hour. The number of credits awarded for a given course is determined by the number of lecture or laboratory hours spent each week in class and is authorized in accordance with guidelines of the Colorado Commission on Higher Education.

FULL-TIME PROGRAM

A full-time program of study minimally consists of 12 credit hours per semester and normally consists of 15 to 18 credit hours per semester during the regular academic year. Under a typical full-time program, most students can complete a bachelor's degree in four years. To receive financial aid, insurance discounts, or full veterans' benefits, students must earn at least 12 hours per semester.

LIMITS ON PROGRAMS OF STUDY

Programs of study in excess of 18 semester credit hours are defined as overloads. Both resident and extended studies courses are counted in the credit-hour total.

Freshmen who have earned fewer than 15 semester credit hours may not take an overload. Students with 15 or more semester hours may enroll for an 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 enroll for more than a total of 25 semester credit hours in a single semester.

CREDIT BY EXAMINATION

Departmental faculty shall identify those undergraduate courses, if any, for which students may earn credit by examination.

A student may earn credit by examination in any of the approved courses subject to the following conditions:

- The student has not previously earned credit in the course at USC, has not previously failed a challenge exam for the course, or has not previously failed the course itself.
- The student has approval of the appropriate department chair (with appeal rights to the dean) to take the challenge examination.
- The student's performance on the examination is at the level of B or better.
- The student is currently admitted to USC or enrolled and in good academic standing at the time the examination is administered.
- The student does not use the challenged course to satisfy the residency requirement for graduation.
- The student must satisfy any additional criteria as specified by the department.

A student may earn a maximum of 30 hours of credit by examination, with no more than 10 hours of general education courses included in the total.

If the student is successful in challenging a course, the title of the course, credit hours and notation of credit by examination will be recorded on the student's permanent record. Unsuccessful attempts are not recorded on the transcript.

The credit hours earned by examination do not count in the student's load for the semester or in the calculation of the student's grade-point average.

The non-refundable fee for credit earned by examination is $50 per course. Application forms for credit by examination are available in the records office.

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 the Graduate Studies section for classification information.

Unclassified: A student who has made no commitment to earning a degree. An unclassified student may be classified as degree-seeking when and if admission status is determined. Students under suspension, or those denied regular admission, are not eligible to enroll as non-degree students. Additional information on unclassified students is contained in the *Admissions* section of this catalog.

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 as auditors must declare their intention at registration. Auditor forms are available in the Office of Records.

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
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.

Grades of S and U are available only in certain approved courses. Although a D is passing, it does not constitute a satisfactory grade. Students must have a 2.00 cumulative grade-point average of 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 except as specified under *Transfer of Credit.* 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 major or institutional requirements.

In progress. A grade of IP (in progress) may be given at the close of the term in certain approved courses. Students receiving an IP must register in the same course the next term, pay tuition and must complete the work during that term. Courses for which IP grades are accrued are identified in the *Course Description* section of this catalog.

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 failed to complete other course requirements. Any instructor giving an IN grade must submit an incomplete grade form in four copies. One copy is sent to the student, one to the Office of Records, one to the department chair's 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 must be assigned by the instructor. Students are responsible for completing the course and initiating the change of an IN to a permanent grade. Re-registration is not necessary.

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, department chair and the dean. Academic appeals should be made first to the classroom instructor, next to the department chair, then to the dean of the college involved. If a satisfactory resolution cannot be reached, a final appeal may be made to the provost.

Grade-point average computation. The 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 is 44, the GPA is 2.75. S's, U's, W's, IP's, IN's, and NC's are not computed in the grade-point average. For the purposes of computing grade-point average, only USC hours are used.

Grade changes. Final grades entered in the Office of Records are unalterable unless a grade-change form is completed and signed by the instructor, the department chair, 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. Letter grades of A, B, C, D or F may be changed by instructors to letter grades of 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, WF and NC may not be changed. Students are responsible for initiating requests for grade changes.

FINAL EXAMINATIONS

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

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 submitted to the Office of Records at the end of each term. Records are retained by the faculty member's department for one year. They are treated in confidence by the faculty member and chair of the department.

REPEATING 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 Records. The previously attempted courses and grades remain in the academic record but are not computed in the overall average. Some academic departments place limitations on repetition of courses for majors and/or minors.

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

Students are encouraged to secure adviser approval for all schedule changes. When students do not secure this approval, they assume full responsibility for their progress toward meeting degree requirements.

Changes of major. All changes of major must be made through the records office with the approval of the appropriate department chair.

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

Students are responsible for processing schedule changes during the drop/add period. **Under no circumstances** shall the instructor assume this responsibility on behalf of the student.

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

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

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

When a student drops a course before 80 percent of the course duration has passed, the instructor gives a grade of W if the student is currently passing the course, or WF to a student who is not passing. After 80 percent of the course duration has transpired, all drops result in grades of WF.

NOTE: 80 percent of a 15-week course occurs at the end of the 12th week.
80 percent of a 10-week course occurs at the end of the eighth week.
80 percent of a 5-week course occurs at the end of the fourth week.
80 percent of an 8-week course occurs at the end of the sixth 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 effect 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 FROM THE UNIVERSITY

To withdraw officially from the university, students must file a withdrawal form with the records office.

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 also must check out at the housing office.

Retroactive withdrawal. Students may request that all grades in a previous semester be retroactively removed and replaced by entries of W on the transcript if they have experienced, during that term, health and/or personal problems so severe that they could not reasonably have been expected to complete the semester satisfactorily. The requests must be submitted with documentation of the problem to the dean of Student Life and Development within one calendar year from the end of the semester for which retroactive withdrawal is being sought. With the provost's approval, the transcript will be changed with a notation of the retroactive withdrawal and the effective date.

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) an 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 department chair and dean.

AUDITED COURSES

A student may register for a course as an auditor, without credit, provided the instructor concerned gives permission. The tuition for audited courses is the same as the tuition for credit courses.

Persons 65 years of age or older, or 62 and retired, may audit courses without paying tuition on a space-available basis. 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 to 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 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 also must 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 to the provost. 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 department chair 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. After a student has attempted 12 semester credit hours, he or she must have a cumulative grade-point average of 2.0 or higher to remain in good academic standing.

Probation. Students are placed on academic probation at the end of any semester in which the cumulative grade-point average falls below 2.00. Notice of probation is given on the grade report. Once a student attains

good academic standing (cumulative 2.0 GPA), probationary status is removed. Students on pro bation are encouraged to contact Counseling Services or their advisers for assistance.

Suspension. Students on probation are subject to suspension if at the end of spring semester the cumulative 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. For purposes of computing grade-point averages of transfer students, only USC hours are used.

Students who have been suspended are not eligible to re-enter for a period of two semesters after the date of suspension except by special permission of the provost. Suspended students 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 suspension must submit a letter of appeal to the Office of the Provost. All letters must be postmarked no later than June 30 for admission to the succeeding fall semester. Students submitting appeal letters after June 30 and before October 1 will be considered for spring semester admission. Appeal letters should be addressed to the associate vice president and should explain specific reasons for seeking readmission. Students are responsible for initiating the appeals process.

CLASS ATTENDANCE

Students are expected to attend all meetings of the class for which they are enrolled unless excused by the instructor, and are not allowed to attend courses for which they are not properly enrolled, unless permitted 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. Each instructor establishes an attendance policy for his or her classes and must inform students in writing of the policy at the beginning of the term.

Although students may drop classes on their own initiative within timeliness established by policy, faculty members have the right to drop students for non-attendance.

ACADEMIC INTEGRITY

Any use of unauthorized assistance in preparing materials which students submit as original work is considered cheating and constitutes grounds for dismissal. Instructors use practical means of preventing and detecting cheating, but the responsibility for maintaining academic integrity and avoiding dishonest scholarship rests with students. 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. Academic dishonesty violates the Student Code of Conduct (see *Student Life* section of this catalog) and subjects students to the university disciplinary procedure.

CLASSROOM BEHAVIOR

The classroom instructor is responsible for setting standards 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 may be 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, department chair and the dean. Academic appeals should be made first to the classroom instructor, next to the department chair, then to the dean of the college involved. If a satisfactory resolution cannot be reached, a final appeal may be made to the provost.

TRANSCRIPTS OF CREDIT

Official transcripts are issued by the records office at the request of the student. The first official transcript is free; for additional copies, a $2 fee is assessed.

Students are not issued transcripts until they have arranged to clear any outstanding financial obligations.

COMMENCEMENT

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

UNDERGRADUATE PROGRAMS

DEGREE REQUIREMENTS

Candidates for the baccalaureate degree must satisfy institutional and general education requirements, as well as specific requirements for the major and minor or area of concentration. Students should plan to complete the basic competency requirements in the freshman year and should plan to complete the general education requirements in the freshman and sophomore years. Students must file an approved graduation planning sheet with the Office of Records before midterm of the semester prior to the one in which they plan to graduate.

INSTITUTIONAL REQUIREMENTS

To earn a baccalaureate degree, students must without exception:

1) earn a point average of at least 2.00. The 128 semester 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 department of the major must be earned in residence at USC;

2) demonstrate basic competencies in speech communication, writing, and mathematics:

   a) Successful completion of SPCOM 101, with a grade of D or better satisfies the speech requirement.

b) Successful completion with grades of D or better of six credit hours of English 110 and 211 or 115 and 216 satisfies the writing requirement.

c) The mathematics requirement must be satisfied in one of two ways:

- scoring 23 or above on the mathematics component of the ACT;
- successful completion with a grade of C or better of MATH 120 or an approved higher level mathematics course (**NOTE:** MATH 240, 241, 360, 377, 463 may not be used to satisfy this requirement; and substitutions for MATH 120 may be authorized by the chair of the department of mathematics);

3) complete the requirements for an approved major and 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; and

4) meet all financial obligations.

GENERAL EDUCATION REQUIREMENT

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 in at least two subgroups within each group. Substitutions may be authorized only by the dean of the college or school offering the course. For example, the dean of the College of Liberal and Fine Arts may authorize a substitution in Subgroup A of Group I, or Subgroup C of Group II.

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 sub-groups. For example, psychology majors may not count PSYCH 101, 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 (Humanities)

Subgroup		
A	ART	100, 101, 102, 103
B	FL	100
	FRN	101, 102
	GER	101, 102
	ITL	101, 102
	RUS	101, 102
	SPN	101, 102, 281, 282
C	ENG	130, 210, 212, 221, 222, 231, 232, 254, 260
D	MACOM	101, 102, 215
E	MUSIC	101, 118, 119, 120, 126
F	PHIL	100, 101, 103, 105, 108, 109, 110, 121, 122, 123, 205, 220
G	SPCOM	100, 211, 212, 221, 231, 241, 242
	MILSC	211
H	TH	111, 131, 135, 216
I	HUM	100
	IST	130, 135
J	CS	220
K	HUM	150, 151
L	IS	101, 104, 201, 204

Group II (Social Science)

Subgroup		
A	PSYCH	101, 101L, 110, 130, 151, 211, 212, 220, 221, 231
B	ANTHR	103, 105, 106, 107, 108, 251, 252
	MACOM	280
	NSG	117
	SOC	101, 152, 153, 201, 202, 203
	SOCSC	151, 208, 209, 231
C	GEOG	113, 201, 210
	HIST	101, 102, 185, 201, 202, 211
	POLSC	100, 101, 102, 104, 150, 185, 201, 202, 250
	SW	100, 201
D	ACCTG	210
	BUSAD	100
	ECON	101, 201, 202
E	CS	101, 201, 202, 230
F	IS	102, 105, 202, 205

Group III
(Natural Science)

Subgroup		
A	ANTHR	104
	BIOL	101, 112, 121, 132, 141, 162, 191, 191L, 201, 201L, 202, 202L, 221, 221L, 223, 223L, 224, 224L, 262, 262L
	PSYCH	120
B	CHEM	101, 111, 111L, 121, 121L, 122, 122L
C	CST	101, 102
	MET	111
D	EN	103
	GEOG	102, 103, 281
	GEOL	101, 101L, 123, 123L
E	MATH	109, 121, 122, 124, 126, 131, 132, 156, 207, 221, 231, 232, 245
F	PHYS	100, 110, 130, 131, 132, 133, 134, 135, 201, 201L, 202, 202L, 221, 221L, 222, 222L
G	IS	103, 106, 203, 206

MAJOR REQUIREMENTS

Every baccalaureate student must elect a major and successfully complete all the requirements of that major prior to receiving a 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 course work in the program of study.**

Emphasis Area/Options. Programs of study may specify emphasis or option areas within majors. Students may decide to select emphasis areas within a major and may have the emphasis areas or options recorded on their transcripts with approval of the department chair.

MINOR OR AREA OF CONCENTRATION REQUIREMENTS

In addition to a major, every 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 offering the minor. Students taking double majors satisfy the minor requirement. 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. All courses in the area of concentration must be taken outside the student's major.

DOUBLE MAJOR

Students seeking a double major must satisfy the requirements of both majors as stated by both departments involved.

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 course(s).

Courses satisfying the BA requirement are two semesters of "introduction to" a foreign language (six semester hours) or two semesters of beginning French, German or Spanish (8-10 semester hours). Separate "introduction to" courses are offered in Italian, Russian and Spanish. Other languages are taught when enrollment permits. If a foreign language is chosen to satisfy the BA requirement, two semesters of the same language must be completed.

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 may elect to complete one semester of FL 100: Introduction to Comparative Linguistics (three semester hours), and ANTHR 106: Language, Thought and Culture (three semester hours). International students may substitute six semester hours of English courses.

SECOND BACCALAUREATE DEGREE

A student who wishes to earn a second bachelor's degree must complete a minimum of 32 hours of credit in addition to the total number of credits required for the first degree. The additional 32 hours of credit must have the approval of the department from which the second degree is to be earned and must be earned in residence at USC.

The additional credits required for the second degree may be completed concurrently with those credits applying to the first degree and the two degrees may be granted simultaneously, providing all requirements are completed for both degrees.

If the student possesses a baccalaureate degree from a regionally accredited college or university, the general education and institutional requirements are considered complete. A cumulative grade-point average of at least 2.0 is required for all work completed at USC toward the second degree. Students seeking a second degree are eligible for the Dean's List and for graduation with distinction. (32 hrs)

ACCOUNTABILITY PROGRAM REQUIREMENTS

In 1985, the Colorado General Assembly enacted legislation (C.R.S. 23-13-101) requiring higher education institutions to develop accountability programs to comply with the intent of the legislature that:

a) institutions of higher education be held accountable for demonstrable improvements in student knowledge, capacities and skills between entrance and graduation;

b) such demonstrable improvements be publicly announced and available;

c) institutions express clearly to students their expectations for student performance; and

d) such improvements be achieved efficiently through the use of student and institutional resources of time, effort and money.

The University of Southern Colorado, in response to the aforementioned legislation, has adopted an accountability plan which contains the following provisions:

a) The basic educational goals for all undergraduates shall be communicated to students in the form of performance expectations for all students.

b) Each department shall develop and publish specific curricular, co-curricular, and appropriate student performance expectations for students by major.

c) Information on student improvement from entrance to graduation shall be collected, used, and publicly reported at three levels:

   1) The total student body level (that is, information on all students collected by year of entrance and tracked to graduation).

   2) The major level (that is, qualitative assessments of the extent to which students meet the performance expectations stated by the department).

   3) The individual student level (that is, qualitative assessments of the extent to which individual students demonstrate growth in knowledge, intellectual capacities, and skills between entrance and graduation).

d) Information on after-graduation performance of students shall be collected by means of surveys of graduates, employers, and graduate/professional schools.

e) Information on student and alumni satisfaction with their education shall be collected by means of surveys.

f) Information collected for the accountability plan shall be reported annually to the State Board of Agriculture and the Colorado Commission on Higher Education and used for the purposes of improving the quality of the educational experience at the university.

In recognition of the evolutionary nature of an accountability program, the university acknowledges that the provisions of the plan, as they are stated in this catalog, may change at any time during students' residence. The university will make reasonable efforts to inform students of any modifications to the accountability plan occurring prior to the publication of the 1992-1994 catalog issue.

Basic Educational Goals for all Undergraduates

Effective for students entering in fall semester 1990, the university requires its graduates to meet or exceed the following performance expectations:

1) Fields of Study Goals

Major Field

The graduate shall demonstrate outcomes (proficiency) in the major by a variety of assessments specified by the faculty of the department offering that major. Faculty will determine and publish the expected outcomes for each major offered, and the students in the major will be provided with career planning in terms of the expected outcomes.

Minor Field

The graduate shall demonstrate outcomes in the minor by a variety of assessments specified by the faculty of the department offering that minor. Faculty will determine and publish the expected outcomes for each minor offered.

2) Intellectual Skills Goals

Literacy Skills

The graduate shall demonstrate effective skills in reading, writing, speaking and listening (public and interpersonal communication), visualizing, computing, locating and documenting sources of information.

Quantitative Skills

The graduate shall demonstrate the ability to understand and interpret numerical and graphical data.

3) Intellectual Capacities Goals

Problem Solving, Logical Inquiry and Critical Analysis

The graduate shall demonstrate the ability to: identify, define and solve complex problems through logical inquiry and creative exploration; engage in critical analyses; test hypotheses; and discriminate between observation and inference.

4) Knowledge Goals

Aesthetic and Ethical Values

a) Creative and/or Performing Arts — The graduate shall demonstrate knowledge of aesthetic values and artistic processes.

b) Values (Social/Ethical) — The graduate shall demonstrate knowledge of ethical values and social and civic responsibilities.

Understanding People

a) International and Multicultural Experiences — The graduate shall demonstrate knowledge of cultural differences and global interrelatedness.

b) Historical Consciousness — The graduate shall demonstrate knowledge of the past as a means for analyzing contemporary issues.

c) Health Consciousness — The graduate shall demonstrate knowledge of the principles of mental and physical health.

Science and Technology

a) Science — The graduate shall demonstrate knowledge of natural and physical phenomena.

b) Technology — The graduate shall demonstrate knowledge of technology and its interrelationship with society.

Economic, Political, and Social Systems

a) The graduate shall demonstrate knowledge of the social, economic, and political institutions and systems.

Assessment of Basic Educational Goals

To assess the extent to which students meet or exceed the above performance goals, the university requires that all first-time freshmen who enroll full-time for or after fall semester 1990, complete the First General Education Exam prior to the beginning of classes in their initial semester of enrollment. The exam is scheduled during summer, fall and spring orientation programs at convenient times and is offered at no cost to students. In extraordinary circumstances, students may petition the director of Accountability to delay taking the exam until after classes begin. Failure to complete the exam prior to the beginning of classes for the second consecutive semester of enrollment automatically disqualifies students from progressing toward degree candidacy.

In addition, beginning with fall semester 1992, the university requires that all full-time students who have completed at least 60 but not more than 90 credit hours must complete the Second General Education Exam prior to the beginning of classes in the semester for which they enroll in their ninety-first credit. Failure to complete the exam automatically disqualifies students from progressing toward degree candidacy. The exam is scheduled at convenient times and offered at no cost to students. Students failing to show gains in general education outcomes between the first and second exams will not be penalized. However, their scores will be reported to them to provide feedback on their progress toward meeting the basic undergraduate goals.

To assist students in preparing to meet the performance expectations stated in basic educational goals provision of the accountability program, the faculty recommend that students:

1) meet the institutional requirements as early as possible in their academic careers, preferably in the freshman year;

2) meet their general education requirements by the end of the sophomore year, to the extent allowed by the degree program; and

3) complete the General Education Exams in a timely fashion.

Students may benefit from enrolling in general education courses based upon analysis of the outline presented below. At present, the general education requirement mandates successful completion of 30 credit hours in the groupings shown in the general education requirements section of this chapter. General education courses are grouped below in categories according to the basic educational goals for undergraduates. The grouping is intended to serve as a guideline. Some courses contain subject matter relevant to several goal areas. For the sake of convenience, however, each course has been categorized into a primary goal area.

By comparing the following outline with the groupings provided in the general education requirements section, students and their academic advisers can design a program of study which maximizes educational benefit and increases the probability of showing measurable growth in general education outcomes between entrance to and exit from the university.

Intellectual Skills Goals

Literacy Skills

CST 101, 102, 130, 211, ENG 110, MILSC 211, SPCOM 100, 101, 211, 212, 221, 231, 241, 242

Quantitative Skills

MATH 120, 121, 122, 124, 126, 131, 132, 156, 207, 221, 231, 232, 245

Intellectual Capacities Goals

Problem Solving, Logical Inquiry and Critical Analysis

HIST 185, PHIL 105, 205, POLSC 185

Knowledge Goals

Aesthetic and Ethical Values

Creative and/or Performing Arts:

ART 100, 101, 102, 103, ENG 210, 212, 221, 222, 231, 232, 254, HUM 100, 150, IST 130, 135, MUSIC 101, 118, 119, 120, 126, PSYCH 221, TH 111, 131, 135

Values (Social/Ethical):

CS 220, ENG 260, PHIL 108, 109, 110, 220, POLSC 102, 150, 201, PSYCH 211, 212, SW 100

Understanding People

International and Multicultural Experiences:

ANTHR 103, 104, 105, 106, 107, 251, FL 100, FRN 101, 102, GER 101, 102, GEOG 113, 210, ITL 101, 102, PHIL 100, 103, RUS 101, 102, SOC 202, SPN 101, 102, 281, 282

Historical Consciousness:

HIST 101, 102, 201, 202, 211, NSG 117, PHIL 121, 122, 123, SOSC 231

Health Consciousness:

BIOL 112, 141, 162, PSYCH 101/L, 110, 130, 151, 220, 231, SOC 152, SW 201, TH 216

Science and Technology

Science:

BIOL 101, 121, 132, 191/L, 201/L, 202/L, 221/L, 223/L, 224/L, 262/L, CHEM 101, 111/L, 121/L, 122/L, GEOG 102, GEOL 101/L, 123/L, PHIL 101, PHYS 100, 110, 130, 131, 132, 133, 134, 135, 201/L, 202/L, 221/L, 222/L, PSYCH 120

Technology:

ANTHR 108, EN 103, HUM 151

Economic, Political, and Social Systems:

ACCTG 210, BUSAD 100, CS 101, 201, 202, 230, ECON 101, 201, 202, GEOG 103, 201, 281, MACOM 101, 102, 215, 280, POLSC 100, 101, 104, 202, 250, SOC 101, 153, 201, 203, SOCSC 151, 208, 209

Educational Goals for Majors and Minors

Effective for students entering full-time in the fall semester 1990, individual departments expect graduates to meet or exceed their performance expectations as stated in each college/school section of this catalog.

Departmental accountability plans differ in accordance with requirements of specific disciplines; however, each plan typically includes the following information:

Departmental Goals
Expected Student Outcomes
  General Requirements
  Specific Requirements for Majors
  Specific Requirements for Minors
  Co-curricular Requirements (if any)
  Outcomes Assessment Activities

In consideration of the evolutionary nature of departmental accountability plans, departments reserve the right to make modifications in their accountability plans as appropriate and necessary. Departments will notify students majoring and minoring in their areas of modifications in accountability plans if those modifications occur prior to the publication of the 1992-1994 catalog.

Student Surveys

During students' enrollment and for a period of five years after they graduate, the university will conduct surveys to assess the level of students' satisfaction with their education. Students are strongly encouraged to respond to surveys and to provide other appropriate forms of feedback so that the university may more effectively use the results of surveys to improve the quality of education students receive.

Dissemination of Results

Students will receive reports of general education growth from the Office of Accountability; other assessment results will be disseminated by the faculty of students' major departments in accordance with departmental accountability plans.

Inquiries about the accountability program may be directed to the director of Accountability in care of the Office of the Provost.

THE COLLEGE OF APPLIED SCIENCE AND ENGINEERING TECHNOLOGY

Dr. Ray L. Sisson, dean

Academic Departments	Majors	Minors
Computer Science Technology	Computer Science Technology (BS) • Applications programming • Systems programming • Hardware/software	Computer Science Technology
Engineering	Industrial Engineering (BSIEN) Systems Engineering (MS)	
Engineering Technology	Civil Engineering Technology (BSCET)	

	Electronics Engineering Technology (BSEET) Mechanical Engineering Technology (BSMET)	
Industrial Technology	Automotive Parts and Service Management (BS) Industrial Science (BS) • Teaching IST • Facilities Technology	Automotive Parts and Service Management Industrial Science and Technology
Military Science		Military Science

The College of Applied Science and Engineering Technology degree programs reflect USC's polytechnic emphasis and are designed to prepare graduates for professional positions in industry, business and governmental agencies.

The computer science technology degree offers three distinct program options: Applications programming, systems programming, and hardware/software.

The industrial engineering degree program prepares graduates to work with the design, improvement and installation of systems. Students learn to consider human characteristics along with those of materials and equipment to produce quality products and services more efficiently.

USC's two-year engineering transfer program provides a solid foundation in basic engineering education for any specialty field the student ultimately selects at USC or at other engineering colleges.

USC's baccalaureate degrees in civil, electronics and mechanical engineering technology are accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology. In addition to practical, hands-on laboratory experience, students receive a rich academic education in small classes taught by faculty with industrial experience.

USC's automotive parts and service management degree program combines technical courses and practical labs on the automobile with management courses in business — an unequaled combination.

Industrial science and technology majors may select the option in facilities technology to serve in administrative and supervisory positions, or the option for teaching industrial arts and technology education with state teaching certification.

The master's degree program in systems engineering uses techniques from engineering disciplines, mathematics, behavioral and physical sciences to analyze and design large scale human/machine/software systems for commercial, governmental and non-profit organizations.

The ROTC program enables a student to earn both a U.S. Army commission and a bachelor's degree in the student's chosen field during four years of college. A more concentrated, two-year program is available for upperclass students who did not take ROTC during their freshman and sophomore years.

COMPUTER SCIENCE TECHNOLOGY DEPARTMENT

CHAIR: Knight
FACULTY: Borton, Cook, May, Padgett, Sathi, Smith, Tappan

The major in computer science technology leads to a bachelor of science (BS) degree 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, systems analysts and specialists in software engineering.

Departmental Goals

- To provide a high quality bachelor of science degree in computer science technology consistent with the curriculum recommendations of the Association for Computing Machinery (ACM)
- To provide three specific educational program options:
  a) Applications programming
  b) Systems programming
  c) Hardware/software
- To provide education for a career as a computer scientist through extensive hands-on laboratory experiences associated with the majority of the coursework.
- To provide knowledge of computer science practice and theory for students minoring in CST.

Expected Student Outcomes

General Requirements

- Students majoring or minoring in CST are required to earn a grade of C or better in all CST courses.
- Students must complete a minimum of 128 semester hours in an approved program of study, including 48 hours in the major.
- Graduates must demonstrate knowledge of computer science theory, computer organization, architecture, methodology and techniques of computer science, software systems and computational mathematics.

- Graduates must successfully demonstrate mastery of communication skills (verbal and written) and knowledge of practices and/or theory from courses offered outside the major.

Specific Requirements for the CST Major, Option I - Applications Programming

CST Courses		Title	Credits
CST	115	Operating Systems	1
	116	Structured Programming Concepts	1
	121	Computer Science I	4
	122	Computer Science II	4
	210	Introduction to Assembler Language	3
	230	COBOL Programming	3
	240	Systems Analysis and Design I	3
	270	File Processing	3
	321	Advanced Data Structures	3
	331	Professional Programming - COBOL	3
	341	Systems Design and Analysis II	3
	350	Data Base Systems	3
	360	Digital Computer Concepts	3
Approved electives			11
		TOTAL	48

Other Required Courses

ENG	305	Technical and Scientific Report Writing	3
MATH	124	Precalculus Math	5
MATH	156	Introduction to Statistics	3
MATH	245	Introduction to Discrete Mathematics	3
ACCTG	201	Principles of Financial Accounting	4
ACCTG	202	Principles of Managerial Accounting	4
or any 4- or 5-credit calculus course			4 or 5
		TOTAL	26 or 27

Institutional and General Education

ENG	110	Composition I	3
ENG	211	Composition II	3
SPCOM	101	Expository Speaking	2
HUMANITIES			10
SOCIAL SCIENCES			10
NATURAL SCIENCES			10
FREE ELECTIVES			6
APPROVED MINOR			20
		TOTAL	64

Total Credit Hours: 128

Specific Requirements for the CST Major Option II - Systems Programming

CST Courses		Title	Credits
CST	115	Operating Systems I	1
	116	Structures Programming Concepts	1
	121	Computer Science	4
	122	Computer Science II	4
	210	Introduction to Assembler Language	3
	270	File Processing	3
	316	Operating Systems II	3
	321	Advanced Data Structures	3
	330	Programming Languages	3
	350	Data Base Systems	3
	360	Digital Computer Concepts	3
Approved electives			17
		TOTAL	48

Other Required Courses

ENG	305	Technical and Scientific Report Writing	3
MATH	126	Calculus and Analytic Geometry I	5
MATH	207	Matrix and Vector Algebras with Appl.	2
MATH	224	Calculus and Analytic Geometry II	5
MATH	325	Intermediate Calculus	3
MATH	342	Introduction to Numerical Analysis	3
MATH	456	Applied Statistics I	3
MATH ELECTIVE			3
PHIL	205	Deductive Logic	3
		TOTAL	30

Institutional and General Education

ENG	110	Composition I	3
ENG	211	Composition II	3
SPCOM	101	Introduction to Speech Communication	2
HUMANITIES			10
SOCIAL SCIENCES			10
NATURAL SCIENCES			10
FREE ELECTIVES			12
		TOTAL	50

Total Credit Hours: 128

Specific Requirements for the CST Major Option III - Hardware/Software

CST Courses		Title	Credits
CST	115	Operating Systems I	1
	116	Structured Programming Concepts	1
	121	Computer Science I	4
	122	Computer Science II	4
	211	Unix/C	3
	270	File Processing	3
	316	Operating Systems II	3
	321	Advanced Data Structures	3
	350	Data Base Systems	3
	418	Compiler Construction I	3
Approved electives			20
		TOTAL	48

Other Required Courses*

ENG	305	Technical and Scientific Report Writing	3
EET	250/250L	Basic Electronic Principles/Lab	4
EET	254/254L	Introduction to Digital Systems/Lab	4
EET	255/255L	Introduction to Microprocessors/Lab	4
EET	355/355L	Advanced Microcomputer Systems/Lab	4
EET Electives			6 to 8
MATH	131	Algebra/Trig for Engineering Tech	4
MATH	132	Algebra/Trig for Engineering Tech II	4
MATH	231	Calculus for Engineering Technology	3
MATH	232	Calculus for Engineering Technology II	3
		TOTAL	39 to 41

***Note:** An additional three to six hours of lower and/or upper-division courses may be needed to satisfy the university graduation requirement. Also MATH 126, 224, and 325 may be used to satisfy math requirements (see adviser).

Instructional and General Education

ENG	110	Composition I	3
ENG	211	Composition II	3
SPCOM	101	Expository Speaking	2
HUMANITIES			10
SOCIAL SCIENCE			10
NATURAL SCIENCE			10
		TOTAL	38

Total Credit Hours: 128 - 135

Specific Requirements for the CST Minor

CST Courses		Title	Credits
CST	115	Operating Systems I	1
	116	Structured Programming Concepts	1
	121	Computer Science I	4
	122	Computer Science II	4
Electives			4
Upper-division Electives			6
		TOTAL	20

Co-curricular Requirements

The department supports a student computing organization(SPOC) and supports field-based liaisons with professional societies and industries. Students are encouraged to participate in these activities.

Outcomes Assessment Activities

Students in the major are required to take a nationally normed computer science achievement test in their senior year. The results will not be used to determine eligibility for graduation, but students will be advised of the results.

Survey information will be collected after graduation from graduates to follow up on progress toward satisfaction with career goals.

ENGINEERING DEPARTMENT
CHAIR: Giffin
FACULTY: Massey, Mills, Sarper, Sisson

The industrial engineering major leads to a bachelor of science in industrial engineering (BSIEN) degree. The department also provides courses for the first two years of other engineering disciplines for potential transfer students, upper-division courses for engineering options in chemistry and physics, and a master of science in systems engineering (MS) degree.

As defined by the Institute of Industrial Engineers: "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 with applications in manufacturing, service, governmental, and non-profit organizations. Industrial engineers are productivity people who deal with the human aspects of work in addition to the advanced technologies of computer software and production-related hardware.

The master of science in systems engineering is an interdisciplinary degree which utilizes tools and techniques from the engineering disciplines, as well as from the mathematical, behavioral and physical sciences to analyze and design large-scale human/machine/software systems. For more information on the MS in systems engineering see the *Graduate Studies* section of this catalog.

Engineering options in chemistry and physics offer students in each of these majors an opportunity to achieve specific employment or graduate educational goals. The program requirements for the individual engineering options are described in the *Chemistry* and *Physics* sections of this catalog.

Departmental Goals

The fundamental goal of the engineering department is to provide students with high quality instruction in modern industrial engineering which is broad based and strongly rooted in mathematics, physical science and engineering science. Graduates of this program will be well-trained industrial engineers who can make immediate contributions to the operation of high-tech industries, service organizations, and traditional manufacturers in southeastern Colorado and elsewhere.

To help achieve this goal, department faculty members are engaged in scholarly activities which put them at the forefront of their profession; at the same time, they work with industries to maintain a strong applications orientation. Opportunities for students to interact with real world problems are available through co-operative work experiences and the senior engineering design course.

Expected Student Outcomes

General Requirements

- A cumulative average of at least 2.00 in all industrial engineering core courses is required for graduation. Students transferring into industrial engineering from other universities and/or departments must have earned a minimum overall 2.5 grade point average. Students transferring into industrial engineering from the USC pre-engineering (engineering transfer) program must be in good academic standing at the time of the transfer request.
- Successful development of engineering skills requires a thorough understanding of mathematics and science and that knowledge should be cumulative from course to course. Consequently, students attempting any engineering course required in the industrial engineering program are expected to have completed all prerequisite courses with a minimum grade of C.

- Mathematical modelling, computer literacy, scientific inquiry and analysis, communication and empirical methodology skills are necessary requirements for an engineering career. Consequently, engineering courses will emphasize open-ended design-oriented problems in which students must formulate models, use computer solutions as appropriate, collect data and prepare both written and oral reports of their analysis.
- The ability to extract concise problem statements from excess and often conflicting information in an organizational environment, followed by implementable solutions easily understood by decision makers, is the mark of a true industrial engineer. Consequently, every engineering student must take either the senior capstone design course or enroll for co-op experience. Both alternatives require on-site work with real world problems.
- All engineers must have an adequate foundation in science, mathematics, communications, the humanities and social sciences, engineering science and engineering design methods to meet the challenges of society's large-scale system problems. Consequently, the industrial engineering program has been designed to ensure that each of those areas is covered by a logically connected series of courses with strong prerequisite requirements.

Specific Requirements for the Industrial Engineering Major

EN Courses		Title	Credits
EN	105	FORTRAN for Engineers	3
	107	Engineering Graphics	2
	211	Engineering Mechanics I	3
	212	Engineering Mechanics II	3
	231	Circuit Analysis	4
	231L	Circuit Analysis Lab	1
	315	Intro to Indust. & Sys. Engineering	3
	321	Thermodynamics	3
	324	Mechanics of Materials	3
	324L	Mechanics of Materials Lab	1
	340	Human Performance	4
	342	Manufacturing Processes	5
	343	Engineering Economy	3
	440	Safety Engineering	4
	443	Quality Control & Reliability	3
	456	Applied Statistics	3
	465	Stochastic Systems	3
	471	Operations Research	3
	473	Production & Computer Aided Engr.	5
	475	Systems Analysis and Design	3
	477	Operations Planning and Control	3
	488	Senior Design Project	3
		TOTAL	68

Other Required Courses

MATH	126	Calculus I	5
MATH	224	Calculus II	5
MATH	325	Intermediate Calculus	3
MATH	337	Differential Equations	3
MATH	350	Probability	3
PHYS	221	General Physics I	4
PHYS	221L	General Physics I Lab	1
PHYS	222	General Physics II	4
PHYS	222L	General Physics II Lab	1
CHEM	121	General Chemistry I	4
CHEM	121L	General Chemistry I Lab	1
CHEM	291	Chemistry for Engineers	2
BIOL	221	Anatomy and Physiology	3
BIOL	221L	Anatomy and Physiology Lab	1
		TOTAL	40

Institutional and General Education

EN Courses		Title	Credits
ENG	110	Composition I	3
ENG	211	Composition II	3
SPCOM	101	Expository Speaking	2
PSYCH	101	General Psychology I	3
PSYCH	101L	General Psychology I Lab	1
ECON	201	Macroeconomics	3
ECON	202	Microeconomics	3
HUMANITIES			10
		TOTAL	28

Total Credit Hours: 136

Co-curricular Requirements

Engineering graduates should be introduced to the professional world and encouraged to develop a sense of obligation to the development and ethical practice of industrial engineering. Consequently, the faculty will support the activities of the local chapter of the Institute of Industrial Engineers (IIE), encourage student participation and foster the establishment of a student chapter.

Outcomes Assessment Activities

The goal of the BSIEN program is to produce engineers who meet the standards of nationally recognized professional licensing agencies and who are ready to assume the responsibilities of professional practice. Consequently, each senior engineering student will be required to take the Fundamentals of Engineering Exam as prescribed by the Colorado State Board of Registration for Professional Engineers or its equivalent. The exam will be administered on campus once each year near the end of spring semester. No student will be permitted to graduate until he or she has taken the exam.

The engineering department also will participate with the College of ASET in graduate follow-up activities. Employment achievement and continued progress toward full professional engineering registration will be highlighted.

Engineering Transfer Program

Students planning to transfer to Colorado State University must follow the required program. Students planning to transfer to the Colorado School of Mines or other universities should consult an adviser in their expected receiving department for an evaluation of this program.

Freshman Year

Course		Title	Credits
CHEM	121/121L	General Chemistry/Lab	5
CHEM	291	Chemistry for Engineers	2
EN	105	FORTRAN 77	3
EN	107	Engineering Graphics	2
ENG	110	Composition I	3
MATH	126/224	Calculus & Analytic Geometry I/II	10
HYPER Approved Courses			2
PHYS	221/221L	General Physics I/Lab	5
General Education (Group I or II)			3
		TOTAL	35

Sophomore Year

EN	211/212	Engineering Mechanics I/II	6
EN	231/231L	Circuit Analysis I/Lab	5
EN	324/324L	Mechanics of Materials/Lab	4
EN	321	Thermodynamics I	3
MATH	325	Intermediate Calculus	3
MATH	337	Differential Equations I	3
PHYS	222/222L	General Physics II/Lab	5
General Education (Group I or II)			3
		TOTAL	32

See departmental list of acceptable Group I and II courses.

NOTE: 1) For priority consideration, transfer students should have a grade-point average of 2.5 or better with 60 semester-hour credits or more and a grade-point average of 3.0 or better with less than 60 semester-hour credits.

2) Applications must be received by February 1 to qualify for priority consideration.

3) Students who have grades of D in any of the pre-engineering courses will be considered on an individual basis.

ENGINEERING TECHNOLOGY DEPARTMENT

CHAIR: Perkins (Acting)
FACULTY: Burton, Chen, Cheng, Cobaugh, Greet, Hirth, Holderness, Jenkins, Sweet, Warfield, Womack

The major in civil engineering technology leads to a bachelor of science in civil engineering technology (BSCET) degree. The major is designed to produce competent field engineering technologists, surveyors, and soil and concrete technologists, who have supervisory capabilities. The curriculum places emphasis on surveying, construction, design and estimating. The upper-division courses provide a broader and more detailed 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.

The major in electronics engineering technology leads to a degree of bachelor of science in electronics engineering technology (BSEET). The EET program prepares graduates for positions in the electronic and computer industries. Basic design concepts, as well as construction, testing, analysis, and computer applications are included in the program. Specifically, theory and laboratory work cover the design, testing, analysis and computer applications of conventional and state-of-the-art circuits and systems. Creative design relating to typically used circuits and systems involving both discrete components and integrated circuits is included as part of the course work in the junior and senior years. The program also provides the student with an academic background necessary for many advanced positions in the electronics industry.

The major in mechanical engineering technology leads to the degree of bachelor of science in mechanical engineering technology (BSMET). Most MET courses are structured such that students learn theoretical and practical concepts in the classroom, followed by experimental application of the learned concepts in the laboratory. The use of computers and computer-controlled equipment is prevalent throughout the curriculum. MET graduates have been in high demand and have commanded high starting salaries from manufacturing industries and government research laboratories.

Students seeking a degree in one of the engineering technology disciplines should have a mathematics/science background including algebra, geometry and trigonometry. All of the engineering technology programs are accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology.

Departmental Goals

- To prepare graduates in the disciplines of civil, electronics and mechanical engineering technology to become productive, accountable and responsible employees upon entering the work force.
- To ensure that graduates function effectively in the technical workplace, interfacing with both engineers and technicians.
- To develop in students a cohesive, theoretical foundation bolstered by hands-on laboratory experiences.
- To maintain accreditation as defined by the Accreditation Board for Engineering and Technology for all programs.

Expected Student Outcomes

General Requirements

- Graduates are required to complete an approved program of study within their respective disciplines with a cumulative GPA of 2.0 or better.
- Graduates are required to demonstrate intellectual skills and knowledge in the areas of quantitative analysis and science by having a cumulative GPA of 2.0 or better in the math and physics courses common to all programs.
- Engineering technology majors shall demonstrate literacy skills by using a wordprocessor to compose and edit, and quantitative skills by using a spreadsheet to do quantitative analyses.
- All engineering technology majors shall demonstrate the intellectual capacity to solve problems and to engage in logical inquiry. All students will be required to solve problems appropriate to their discipline, to be able to use the computer for both analysis and design, and to complete a design project requiring both oral and written reports.
- All engineering technology students will be required to take one or more programming languages appropriate to their discipline and to demonstrate their programming knowledge by writing appropriate computer programs.

Specific Requirements for the CET Major

It is expected that CET graduates should have the appropriate skills and knowledge regarding surveying and drafting. In addition, they should have a knowledge of basic construction materials along with the fundamentals of statics, strength of materials, hydraulics, structural analysis, and soil mechanics which are central to the discipline.

CET Courses		Title	Credits
CET	101	Introduction to CET	2
	102	Surveying I	4
	103	Surveying II	4
	104	Map Drafting	3
	105	Construction Materials	2
	106	Concrete Mix Design	1
	106L	Concrete Lab	1
	202	Statics	3
	206	Strength of Materials	3
	302	Structural Analysis	3
	303	Construction Contracting & Supervision	3
	304	Construction Cost Estimates	3
	305	Construction Cost Estimates II	3
	311	Advanced Surveying I*	4
	312	Advanced Surveying II*	4
	315	Soil Mechanics	2
	315L	Soil Mechanics Lab	1
	404	Fundamental Structural Design	3
	411	Hydraulics	3
Approved electives			3
		TOTAL	51

***NOTE:** Either CET 311 or 312 must be taken, but not both.

Other Required Courses

CST	105	FORTRAN	3
MET	111	Introduction to Drafting	3
ENG	305	Technical & Scientific Report Writing	3
MATH	131	Math Engineering Technology I	4
MATH	132	Math Engineering Technology II	4
MATH	231	Calculus for Engineering Technology I	3
MATH	232	Calculus for Engineering Technology II	3
PHYS	201	Principles of Physics I	3
PHYS	201L	Physics I Lab	1
PHYS	202	Principles of Physics II	3
PHYS	202L	Physics II Lab	1
CHEM	111	Principles of Chemistry*	3
CHEM	111L	Chemistry Lab	1
GEOL	101	Earth Science*	3
GEOL	101L	Earth Science Lab	1
A total of 6 credits selected from:			
ACT	201	Principles of Financial Accounting	4
BUS	220	Principles of Business Law	3
MGMT	310	Principles of Management	3
MGMT	318	Personnel Management	3
EN	343	Industrial Engineering Economy	3
		TOTAL	42

***NOTE:** Either Chem or Geol must be taken, but not both.

Institutional and General Education

ENG	110	Composition I	3
ENG	211	Composition II	3
SPCOM	101	Expository Speaking	2
GRP I		HUMANITIES	10
GRP II		SOCIAL SCIENCES	10
		TOTAL	28

Total Credit Hours: 121

Specific Requirements for the EET Major

All EET majors will be required to learn the use of basic electronic laboratory instruments and to demonstrate such knowledge through appropriate laboratory experiences. In addition, all EET majors should have a knowledge of electrical circuits, discrete electronic devices, digital circuits, advanced integrated circuits (both digital and analog), feedback control systems, microcomputers, and analog and digital communication.

EET	110	Computer-Aided Electronic Drafting	2
	110L	Electronic Drafting Lab	1
	121	DC Circuits	4
	121L	DC Circuits Lab	1
	122	AC Circuits	4
	122L	AC Circuits Lab	1
	211	Electronics I	3
	211L	Electronics I Lab	1
	212	Electronics II	3
	212L	Electronics II Lab	1
	254	Introduction to Digital Systems	3
	254L	Digital Systems Lab	1
	255	Introduction to Microprocessors	3
	255L	Microprocessors Lab	1
	311	Control Systems I	3
	311L	Control Systems Lab	1
	351	Linear Integrated Circuits	3
	351L	Integrated Circuits Lab	1
	353	Software Development	2
	353L	Software Development Lab	1
	354	Computer Architecture	3
	354L	Computer Architecture Lab	1
	355	Advanced Microcomputer Systems	3
	355L	Advanced Microcomputer Lab	1
	356	Advanced Integrated Circuits	3
	356L	Advanced Integrated Circuits Lab	1
	393	Seminar	1

EET Courses		Title	Credits
EET	412	Communication Systems	3
	455	Control Systems II	3
	455L	Control Systems II Lab	1
	456	Design Projects	1
	456L	Design Projects Lab	1
Approved elective			3
		TOTAL	65

Other Required Courses

CST	225	Introduction to Pascal Programming	3
ENG	305	Technical & Scientific Report Writing	3
MGMT	310	Principles of Management	3
MATH	131	Math for Engineering Technology I	4
MATH	132	Math for Engineering Technology II	4
MATH	231	Calculus for Engineering Technology I	3
MATH	232	Calculus for Engineering Technology II	3
MATH		Approved Math Elective	3
PHYS	201	Principles of Physics I	3
PHYS	201L	Physics I Lab	1
PHYS	202	Physics II Lab	3
PHYS	202L	Physics II Lab	1
Approved Technology Elective			6
		TOTAL	40

Institutional and General Education

ENG	110	Composition I	3
ENG	211	Composition II	3
SPCOM	101	Expository Speaking	2
GRP I		HUMANITIES	10
GRP II		SOCIAL SCIENCES	10
		TOTAL	28

Total Credit Hours: 133

Specific Requirements for the MET Major

All MET majors should have a knowledge of drafting, computer-aided design, engineering materials, statics, dynamics, strength of materials, fluid mechanics, thermodynamics, manufacturing processes, statistical analysis, and quality control and reliability which are central to the discipline.

MET Courses		Title	Credits
MET	105	Materials for Engineering Applications	3
	105L	Materials Lab	1
	111	Introduction to Drafting	3
	112	Computer-Aided Drafting	3
	202	Statics	3
	203	Manufacturing Processes I	3
	203L	Manufacturing I Lab	1
	204	Manufacturing Processes II	2
	204L	Manufacturing II Lab	1
	206	Strength of Materials	2
	305	Computer Programming and Algorithms	3
	322	Dynamics of Machinery	3
	341	Thermal and Fluid Principles	3
	352	Design of Machine Elements	2
	352L	Machine Elements Lab	1
	356	Basic Design Principles	2
	361	Computer Integrated Manufacturing	2
	361L	Computer Manufacturing Lab	1
	441	Thermal and Fluid Principles II	2
	441L	Fluid Principles II Lab	1
	442	Design of Energy Systems	2
	442L	Energy Systems Lab	1
	456	Senior Project	1
	456L	Project Lab	1
	460	Instrumentation and Control Systems	2
	460L	Control Systems Lab	1
Approved electives			3
		TOTAL	53

Other Required Courses

EET	250	Basic Electronic Principles	3
EET	250L	Electronic Principles Lab	1
EET	350	Electronic Motors and Controls	3
EET	350L	Motors Lab	1
EN	443	Quality Control and Reliability	3
ENG	305	Technical and Scientific Report Writing	3
MGMT	310	Principles of Management	3
MATH	131	Math for Engineering Technology I	4
MATH	132	Math for Engineering Technology II	4
MATH	231	Calculus for Engineering Technology I	3
MATH	232	Calculus for Engineering Technology II	3
MATH	456	Applied Statistics I	3
PHYS	201	Principles of Physics I	3
PHYS	201L	Physics I Lab	1
PHYS	202	Principles of Physics II	3
PHYS	202L	Physics II Lab	1
CHEM	111	Principles of Chemistry	3
CHEM	111L	Chemistry Lab	1
Approved technical electives			6
		TOTAL	52

Institutional and General Education

ENG	110	Composition I	3
ENG	211	Composition II	3
SPCOM	101	Expository Speaking	2
GRP I		HUMANITIES	10
GRP II		SOCIAL SCIENCES	10
		TOTAL	28

Total Credit Hours: 133

Co-curricular Requirements

The faculty supports and encourages the involvement of engineering technology majors in at least one technical organization specific to each discipline and actively encourages student participation in such organizations.

Outcomes Assessment Activities

- Students are required to take a departmental exam developed specifically for their major. Results from the exams will be used to advise students regarding the extent to which they have mastered their discipline and to assist the department in the evaluation of its programs. Test results will not be used to determine the student's eligibility for graduation. The exams will be offered once each semester near the end of the term.
- In addition to the tests, survey information from both the graduate and his/her employer will be collected, during the first, third and fifth year following graduation.

INDUSTRIAL TECHNOLOGY DEPARTMENT
CHAIR: Tedrow
FACULTY: Bottini, Hayden, Martinet, Sefcovic, Wade

The major in automotive parts and service management leads to a bachelor of science (BS) degree designed to provide the student with detailed technical knowledge of the automobile and a broad range of management skills applicable to the automotive industry. The curriculum 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.

The major in industrial science and technology leads to a bachelor of science (BS) degree. The program has two options.

Option 1: Teaching Industrial Science and Technology

This option is designed to prepare teachers for junior and senior high schools. Graduates will be skilled in teaching methods, techniques, organization, curriculum, evaluative processes, safety and philosophy. Students will develop manipulative skills in the use and operation of the latest tools, machines, and products used in industry. They will learn technical information as it relates to our industrial society. State of Colorado (I.A.) certification requirements will be accomplished by completing the program and teacher certification.

Option 2: Facilities Technology

This option prepares students to serve in administration and supervisory positions. Graduates will be prepared to plan, program, and supervise plant operation and construction in major physical facilities, such as schools, industry, malls, hotel/motel complexes, hospitals, office buildings, etc.

Departmental Goals

- To prepare graduates to become productive, accountable, and responsible employees upon entering the work force.
- To develop in students a cohesive, theoretical foundation bolstered by hands-on laboratory experiences.
- To prepare APSM graduates for entry-level management positions with automobile-original equipment manufacturers or aftermarket companies.
- To provide students majoring in other areas the opportunity to gain a limited automotive background which could prepare them to pursue a career in the automotive industry by successful completion of an APSM minor.
- To prepare IST graduates for teaching positions in junior or senior high or for administrative or supervisory positions in facilities management.
- To maintain accreditation in the teacher education option of the IST program and to maintain the curriculum in other program areas by recommendation of national advisory committees.

Expected Student Outcomes

General Requirements for the APSM Program

- Graduates of this program are required to complete an approved curriculum with a minimum grade of C earned in all major courses.
- Graduates are required to demonstrate intellectual skills and knowledge in related business courses to satisfy the minor, and institutional requirements and general education courses for students to be successful; therefore, APSM students must complete their courses with a cumulative GPA of 2.0 or better.
- APSM majors shall demonstrate technological literacy by showing the ability to compose and edit using a word processor, and to use a simple spreadsheet for quantitative analysis.

- All APSM students will be required to solve problems appropriate to their discipline; to be able to use the computer for design, analysis, and business transactions; and to demonstrate proper use of measurements and diagnostic equipment.
- Students in the APSM minor program are required to complete the approved curriculum with a minimum grade of C earned in all minor courses.

Specific Requirements for the APSM Major

APSM Courses		Title	Credits
APSM	105	Intro. to the Parts & Service Industry	2
	115	Automotive Engine Design & Operation	4
	125L	Automotive Suspension & Brake Sys./Lab	4
	135L	Automotive Fuel Sys. & Exhaust Ems./Lab	4
	155	Automotive Jobbers & Dealer Parts Oper.	5
	165	Industrial Equipment & Heavy Equipment	2
	205	Automotive Jobber Dist. & Merchandising	5
	215L	Automotive Power Trains & Dr. Lines/Lab	4
	235	Machine Shop Equipment and Operation	3
	245L	Automotive Electrical Systems I/Lab	4
	255L	Automotive Electrical Systems II/Lab	3
	305	Auto Parts and Service Management	3
	325	Fuels & Lube Production, Mktg. & Conserv.	3
	335L	Automotive Shop Practices/Lab.	5
	345L	Advanced Automotive Systems/Lab	5
	405	Automotive Sales Principles & Practices	5
	415	Auto Expense Control & Analysis	5
		TOTAL	66

Other Required Courses

BUSAD	220	Business Law	3
ACCTG	201	Principles of Financial Accounting.	4
ACCTG	202	Principles of Managerial Accounting	4
MGMT	310	Principles of Management	3
MGMT	318	Personnel Management	3
FIN	330	Corporate Financial Management	3
MKTG	340	Principles of Marketing	3
MGMT	414	Small Business Management	3
MET	152	Applied Physical Metallurgy.	2
MET	152L	Metallurgy/Lab	1
		TOTAL	29

Institutional and General Education

SPCOM	101	Expository Speaking	2
ENG	110	Technical & Scientific Communications I	3
ENG	211	Technical & Scientific Communications II	3
MATH	120	Inter. Algebra (or) ACT 23 or Above.	4
ECON	201	Principles of Macroeconomics	3
ECON	202	Principles of Microeconomics	3
BUSAD	100	Introduction to Business	3
SOCIAL SCIENCES		Approved from list	minimum 1
IST	130	Period and Modern Furniture Design	3
IST	135	Period and Modern Architecture	3
SPCOM	100	Introduction to Speech Communication	1
HUMANITIES		Approved from list	minimum 3
CHEM	111L	Principles of Chemistry/Lab	4
CST	101	Computers and You	3
NATURAL SCIENCES		Approved from list	minimum 3
		TOTAL	42

Total Credit Hours: 137

Specific Requirements for the APSM Minor

APSM	115	Automotive Engine Design & Operation	4
	125L	Automotive Suspension & Brake Sys/Lab	4
	135L	Automotive Fuel Sys & Exhaust Ems/Lab	4
	155	Automotive Jobber & Dealer Parts Operation	5
	205	Automotive Jobber Dist. & Merchandising	5
	245L	Automotive Electrical Systems I/Lab	4
		TOTAL	26

General Requirements for the IST Program

- Graduates of this program are required to complete an approved curriculum with a cumulative GPA of 2.5 or better for the Teaching Option and 2.0 or better for the Facilities Option.
- Graduates in the Teaching Option of the IST program should satisfy all the requirements for a teaching certificate in the State of Colorado. Graduates also must complete the requirements of the education department of the University of Southern Colorado.
- Graduates are required to demonstrate intellectual skills and knowledge in math and science as required in their specific disciplines with a cumulative GPA of 2.0 or better.
- Industrial science and technology majors shall demonstrate technological literacy by showing the ability to compose and edit using a word processor and to use a simple spreadsheet for quantitative analysis.

- All IST majors will be required to solve problems appropriate to their discipline, to engage in logical thinking and use the tools for creative and logical inquiry specific to their field by completion of a project requiring both oral and written reports.
- Students in the Teaching Option minor program are required to complete the approved curriculum with a minimum grade of C earned in all minor courses.

Specific Requirements for the IST Major (Teaching Option)

APSM	225	Power Mechanics	3
EET	250	Basic Electronic Principles	4
IST	101	Woods Technology	3
IST	102	Wood Fabrication Technology	3
IST	103	Commercial & Residential Construction	3
IST	120	Introduction to IST	2
IST	202	Industrial Materials Technology	3
IST	204	Production Systems	3
IST	214	Commercial Finishing Materials	3
IST	303	Communication Systems Technology	3
IST	304	Transportation Technology	3
IST	312	Construction Manufacturing Technology	3
IST	320	Metal Casting Technology	3
IST	331	Manufacturing Fabrication Process	3
IST	361	Building Materials	3
IST	375	Plant Layout/Organization	3
IST	377	Methods/Techniques of Teaching IST	3
IST	455	Curriculum Development & Evaluation-IST	3
IST	457	Industrial Safety	3
MET	111	Technical Drafting	3
MET	112	Computer-Aided Drafting	3
		TOTAL	63

Other Required Courses

ED	202	Foundations of Education	3
ED	435	Classroom Management	3
ED	460	Lab in Education	3
ED	461	Atypical Stu. Sec. Schools Mat. & Tech.	2
ED	488	Student Teaching Secondary	15
IST	345	Career Education	2
		TOTAL	28

Institutional and General Education

ENG	110	Freshman Composition I	3
ENG	211	Freshman Composition II	3
SPCOM	101	Expository Speaking	2
MATH	121	College Algebra	4
or			
MATH	131	Algebra/Trig for Engineering Tech I	4
HUMANITIES		Approved from list	10
PSYCH	101	General Psychology	3
PSYCH	151	Human Development	3
SOCIAL SCIENCES		Approved from list	4
CST	101	Computers and You	3
PHYS	100	Physical Science	3
CHEM	101	Chemistry and You	3
or			
BIOL	121	Environmental Conservation	4
		TOTAL	41 or 42

Total Credit Hours: 133

Specific Requirements for the IST Major (Facilities Technology Option)

Course		Title	Credits
CET	313	Architectural Drafting I	3
EET	250	Basic Electronic Principles	4
IST	101	Woods Technology	3
IST	102	Wood Fabrication Technology	3
IST	103	Commercial Finishing Materials	3
IST	120	Introduction to IST	3
IST	202	Industrial Materials Technology	3
IST	214	Commercial Finishing Materials	3
IST	331	Manufacturing Fabrication Process	3
IST	361	Building Materials	3
IST	375	Plant Layout/Organization	3
IST	457	Industrial Safety	3
MET	111	Technical Drafting	3
MET	112	Computer-Aided Drafting	3
		TOTAL	43

Other Required Courses

ACCTG	201	Principles of Financial Accounting	4
BUSAD	220	Principles of Business Law	3
BUSAD	260	Business Statistics I	3
CET	202	Statics	3
CET	206	Strength of Materials	3
CET	303	Construction Contracting & Supervision	3
CET	304	Construction Cost Estimating I	3
IST	332	Facilities Management I	3
IST	333	Facilities Management II	3
IST	362	Building Systems	3
IST	459	Facilities Supervisor	3
MET	341	Thermal and Fluid Principles	3
MET	452	Heating, Ventilating, & Air Conditioning	3
		TOTAL	40

Institutional and General Education

ENG	110	Freshman Composition I	3
ENG	211	Freshman Composition II	3
SPCOM	101	Expository Speaking	2
HUMANITIES		Approved from list	10
PSYCH	101	General Psychology	3
SOCIAL SCIENCES		Approved from list	7
MATH	131	Math Engineering Technology I	4
MATH	132	Math Engineering Technology II	4
CHEM	111L	Principles of Chemistry/Lab	4
PHYS	201L	Principles of Physics/Lab	4
CST	101	Computers and You	3
		TOTAL	47

Total Credit Hours: 130

Specific Requirements for the IST Minor

IST Course		Title	Credits
IST	101	Wood Technology	3
	103	Commercial and Residential Construction	3
	204	Production System	3
	303	Communication System Technology	3
	304	Transportation Technology	3
	331	Manufacturing Fabrication Process	3
	377	Methods/Techniques of Teaching IST	3
	455	Curriculum Dev. & Evaluation in IST	3
		TOTAL	24

Co-curricular Requirements

Automotive Parts and Service Management/Industrial Science Technology

In both programs, the faculty supports and encourages students to have co-curricular experiences that complement and reinforce the curricular experiences by participation in student organizations, clubs, jobs or other activities related to the APSM and/or program.

Outcomes Assessment Activities

Students enrolled in the baccalaureate degree programs of the industrial technology department are expected to meet the following requirements:

1) Students are required to develop and maintain a portfolio containing a record of achievement in showing improvement in intellectual skills, knowledge and capacities between entrance and graduation. During the semester of graduation, the faculty shall evaluate each graduate portfolio. The department will keep a copy of each portfolio on file to be used as a summarization assessment to assist the department in the evaluation of its programs.

2) In addition to the portfolio, survey information from both the graduate and his/her employer will be collected during the first, third and fifth year following graduation.

3) Students minoring in APSM and IST, Teaching Option, must submit a portfolio containing a record of achievement.

MILITARY SCIENCE DEPARTMENT

CHAIR: Dillon
FACULTY: Cumberbatch, Edens, Hill, Miura

The Army Reserves Officers' Training Corps develops college-educated officers for the active U.S. Army and Reserve components. Producing 75 percent of the commissioned officers in the Army, ROTC prepares men and women for positions of leadership in military or civilian careers. It 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 course of instruction is open to all qualified students and may be taken with no military obligation.

ROTC 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, or either the Army Reserve or the National Guard.

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.

The two-year program is designed for junior and community 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. Basic camp is offered at no obligation. Expenses and pay are provided.

The Simultaneous Membership Program (SMP) is designed to allow students to combine Reserve Force 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; and
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 $2,000 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. The military science department has additional information on current Guard/Reserve tuition assistance programs.

The Army ROTC scholarship program is designed to provide financial assistance for the education and training of highly qualified, highly motivated 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. Two-, three- and four-year scholarships are available to qualified students.

Departmental Goals

The Military Science Department is charged, by law, to provide the United States Army with college-educated, commissioned officers. Therefore, the fundamental goal of the department is to provide students with quality instruction in certain military topics with emphasis on leadership development. The majority of recipients of the minor in military science will have a career as an Army officer. While the minor is open to any student on campus, some may elect not to pursue a career as an Army officer. Regardless which direction the student pursues, the skills required of the minor will be of value to any individual involved in exercising leadership.

Expected Student Outcomes

General Requirements

- Graduates are required to complete an approved program of courses described below with a cumulative GPA of 2.0 or higher.
- Military science students will participate in open discussions and situation analysis of the social and ethical complexities faced by the military professional.
- Military science students shall demonstrate their written and oral communication skills in every course.
- Military science students shall demonstrate their leadership skills in problem solving and task accomplishment. All students shall participate in a leadership assessment program (LAP) which analyzes their leadership skills compared to 16 leadership dimensions.
- Military science students shall demonstrate their knowledge of basic tactical theory at the small unit level. All students shall take two tactics courses. They will demonstrate their understanding of small unit tactics at platoon level or lower. Classes include one field exercise per semester.
- Military science students shall demonstrate their knowledge of military history and be able to apply historical lessons learned through the analysis of the nine principles of war.

Specific Requirements for the Minor in Military Science

MILSC Course		Title	Credits
MILSC	101	Adventure Training & Army Systems*	1
MILSC	102	Orienteering*	1
MILSC	201	Basic Survival*	1
MILSC	202	Mountaineering*	1
MILSC	301	Leadership & Basic Tactics	3
MILSC	302	Leadership & Advanced Tactics	3
MILSC	401	American Military Experience	3
MILSC	402	Ethics & Professionalism	3
MILSC ELECTIVES		(choose from 211, 310, 301L, 302L, 401L)	4
GUIDED ELECTIVES		(choose from:)	
Any Indo-European Foreign Language			
POSLC	250	International Relations	3
CST	101 or 102	(Non CST majors only)	3
MACOM	201 or 202	News Writing or Feature Writing	3
		TOTAL	23

Outcomes Assessment Activities

Students pursuing a military science minor with the intention of becoming a commissioned Army officer are assessed using national standards to determine the component in which they will serve (ie., Active Army, National Guard, or Army Reserve). The following tools are used in evaluating student performance:

1) Examinations play an important part in evaluating a student's performance. In accordance with national standards, students must maintain a 2.0 GPA in all military science courses.

2) Students pursuing a commission will attend a six-week summer camp at Fort Lewis, Washington. In addition to meeting Army physical and medical requirements, student leadership performance will be evaluated daily by active-duty cadre. At the completion of camp, students will be given an overall job-performance evaluation. This evaluation is one of the major factors used to determine student preference toward their commissioning status (ie. Active Army, National Guard, or Army Reserve). Successful completion of camp is required for a commission.

3) Students will be placed in various leadership positions throughout the semester and will be evaluated using the 16 leadership dimensions in accordance with the leadership assessment program (LAP).

THE COLLEGE OF LIBERAL AND FINE ARTS

Dr. Friederike Wiedemann, dean

Academic Departments	Majors	Minors
Art	Art (BA, BS)	Art
Chicano Studies/ History/Philosophy/ Political Science	History (BA) Political Science (BA, BS)	Chicano Studies History
Philosophy	Social Science (BA, BS)	Political Science Social Science
English/Foreign Languages	English (BA) Foreign Languages (BA)	English French Italian Spanish
Human Performance/Leisure Studies	Kinesiology (BS) Recreation (BS)	Physical Education Recreation
Interdisciplinary Studies		Honors
Mass Communications	Mass Communications (BA, BS)	Mass Communications
Music	Music (BA)	Music
Psychology	Psychology (BA, BS)	Psychology
Sociology/Anthropology/ Social Work	Sociology (BA, BS) Social Work (BSW)	Anthropology Sociology
Speech Communication/Theatre	Speech Communication (BA, BS)	Speech Communication Theatre
Teacher Education		Reading Education Bilingual/Bicultural Education Elementary
Certification		Secondary Endorsements for: An (K-12), English, Foreign Languages (French, Spanish) Industrial Arts Mathematics Music (K-12) Physical Education (K-12) Science Social Studies Speech School Nurse

Dedicated faculty, fine facilities, and strong major and minor programs that unite liberal education with career preparation contribute toward making the College of Liberal and Fine Arts an essential part of the university.

Studies in the humanities, arts, and social sciences help students develop their individual ethical and aesthetic priorities and become responsible citizens, while professional studies, most of which provide opportunities for appropriate internships, prepare them for future careers.

Art students enjoy specialized facilities, while learning design, computer imaging, sculpture, ceramics, painting, drawing, printmaking, photography, graphic design, video and art education techniques. Hoag Hall's art gallery rotates exhibits monthly.

Social science, history, and political science students prepare for careers in government, politics and human services, as well as in business and industry. Special opportunities exist for students interested in Chicano studies.

The English program offers students individual attention in expository, technical and creative writing; instruction in linguistics; and the opportunity to enhance their awareness of aesthetic and ethical values through relating literary texts to the human condition from historical, social and personal points of view. Graduates find employment opportunities in business, teaching, writing, the media, or continue their studies in graduate school. Basic support services and laboratory assistance with writing skills are available.

Students learn to better understand and appreciate foreign cultures while developing proficiency in languages and studying foreign literature in the original text. Graduates have found careers in international business, advertising, governmental service, travel and tourism, teaching, journalism, health services and social work.

Students majoring in kinesiology or recreation focus on wellness, fitness, and teaching. Career opportunities include outdoor adventure programming, camp and nature center administration, recreation resource management and therapeutic positions in a variety of clinical settings.

The university honors program, which offers a minor, provides intellectually invigorating challenges for academically talented students. In small, interdisciplinary seminars, students explore the natural-land applied sciences, social sciences, and the humanities. "Graduation with honors" is a significant designation for students applying to graduate or professional schools or seeking employment.

USC's mass communications program, one of the most practical in Colorado, has a graduate placement rate in excess of 90 percent. USC has its own award-winning student newspaper, its own student radio station, and is the only university in Colorado with a public broadcasting television station (KTSC-TV) where students gain hands-on experience in television station operation.

Music majors study and perform in one of the region's finest facilities. Graduates have become opera and musical comedy singers, instrumentalists with professional bands and orchestras, university and college faculty members, and teachers in public schools.

Students in psychology may choose to work closely with faculty in research laboratories, or gain experience in support service delivery through the Counseling Center. Faculty encourage students to individualize their major by selecting certification in elementary education, or an emphasis in educational psychology, mental health, or experimental studies, as well as to consider graduate education.

The sociology program places a major focus on applied sociology, emphasizing the areas of 1) corrections, 2) aging, health and sexuality. Both emphasis areas offer internship opportunities and prepare students for employment in the extensive network of agencies and facilities in the region. Graduates have been successful in undertaking graduate education within the field and in the professions.

The social work program, one of only two accredited in the state, offers outstanding opportunities for individualized learning and interaction with faculty. The program prepares students for beginning generalists social work practice. It offers agency internship placements in such areas as health, aging, corrections, child welfare, mental health and community change as part of the program. The need for social workers in the region has continued to increase. More than 90 percent of our graduates are employed in the field or go on to graduate studies.

The speech, speech correction, and theatre programs offer students excellent opportunities to practice their talents and skills. Theatre students produce several major plays each year, and USC's forensic team successfully competes with other colleges and universities.

Students planning to become teachers complete a major in their chosen academic discipline. Certification is offered for elementary as well as bilingual/bicultural elementary education. Secondary endorsements are available for selected subjects.

ART DEPARTMENT
CHAIR: Jensen
FACULTY: Audrey, Hench, Latka, Marino, Wands

The major in art leads to the degrees of bachelor of arts (BA) and bachelor of science (BS). A minor in art and an endorsement in teacher certification also are available.

Departmental Goals

To prepare graduates in the disciplines of fine art and art education to become creative and responsible citizens with skills in the following areas:

- critical reasoning and aesthetic judgment;
- art history;
- studio processes;
- art education; and
- professional art studies.

Expected Student Outcomes

General Requirements

- The art faculty firmly believes that a quality undergraduate art program must be built from the strong foundation of basic concepts and techniques that are provided by the required ART CORE courses. Art history, Drawing and Design are the traditional disciplines providing the necessary background of information and skills for individual artistic growth and maturity. A strong grounding in the fundamentals of art, as provided in the ART-CORE, indicates the department's insistence upon respect for and commitment to the academic discipline of art as a professional career.

- Art majors must complete the required courses known as the ART-CORE, except Art 410, before proceeding into the beginning courses.
- No grade lower than a C will count toward either an art major or minor.

Specific Requirements for the Art Major

- ART CORE

ART Courses		Title	Credits
ART	101 and 102	Art History Survey I & II	6
	115 and 116	Two- & Three-Dimensional Design	6
	141 and 142	Drawing I & II	4
	210	Art Orientation	1
	410	Career Orientation	1
		TOTAL	18

- The BA degree requires a total of 40 hours of art to be chosen in consultation with a faculty adviser.
- The BS degree requires a total of 48 hours of art to be chosen in consultation with a faculty adviser.
- State certification in Art Education requires a total of 48 hours of art courses prior to certification. Courses are chosen in consultation with an art adviser.

Specific Requirements for the Art Minor

ART	141 or 142	Drawing I or II	2
	115 or 116	Two-Dimensional or Three-Dimensional Design	3
	101 or 102	Art History Survey I or II	3
Art electives approved by minor advisor			12
		TOTAL	20

For teaching endorsement requirements, see the *Education Program* section of this catalog.

Co-curricular requirements

The faculty supports and encourages the involvement of art majors and minors in the Art Club and related activities specific to each discipline and actively encourages student participation in such organizations.

Outcomes Assessment Activities

- Art majors will successfully demonstrate competencies required by the department. Competencies will be evaluated using two basic instruments: grades and portfolio review.

- The art faculty believe that grades are an important and significant tool in indicating the quality of a student's performance; therefore, grades are to be one of the measuring devices in determining the curricular outcomes of art majors.
- Each art major is required to produce and maintain a portfolio of work as a record of achievement. The contents and objectives of this portfolio will be described, discussed and planned in the Career Orientation class (Art 210). Final evaluation of the progressive portfolio will take place during the last semester in the art orientation class (Art 410). The format of the portfolio may vary according to subject matter and content but the general presentation format will consist of 35 mm color slides, color prints and video tapes.
- As a competency indicator of achievements in the area of art history, part of the portfolio may contain samples of a student's written material as related to art history analysis and criticism, as well as a departmental art history exam.
- The intent of the portfolio is to faithfully reflect the ability and competency level of the art student as he or she progresses in the program. The make-up of the portfolio will reflect the personal accomplishments of each individual.
- A representative sampling of student portfolios will be retained by the department for a period not to exceed two years, thus enabling qualified persons to view and assess departmental achievement of stated goals.
- A complete set of syllabi, class assignments, course outlines and examination examples of each art instructor's classes will be maintained and updated by each faculty member and made available to the student. Class objectives and skills to be attained during the class will be denoted clearly in these materials. The complete file of this information will be retained and made available for perusal by qualified persons wishing to determine how courses are adapted to meet stated objectives.

CHICANO STUDIES/HISTORY/PHILOSOPHY/POLITICAL SCIENCE DEPARTMENT

CHAIR: Daxton
FACULTY: Aichele, Driscoll, Eagan, Love, Lovin, Nicholl, Otis, Sandoval

Chicano Studies Program

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 in-depth knowledge of specific aspects of the Chicano community.

Program Goals

- To provide individual courses as well as a minor in fulfillment of the unique role and mission of the University of Southern Colorado; and
- To offer individually designed minors in support of students' majors.

Expected Student Outcomes

General Requirements

- Students in Chicano studies courses should display an adequate and measurable knowledge of subject matter within the course.
- Students in Chicano studies courses should develop an understanding for the relationships of ethnic groups within American society.
- Chicano studies minors will demonstrate their ability to utilize a personal computer through CS 493, the capstone class.
- Students must earn a C or better in all courses applicable to the minor.

Specific Requirements for the Chicano Studies Minor

CS Courses		Title	Credits
CS	101	Introduction to Chicano Studies	3
	201	Aztlan: Genesis to Today	3
	440	History of Mexico	3
	493	Seminar in Chicano Studies	3
Electives			9
		TOTAL	21

Electives may be selected from Chicano studies courses or, with approval by the Chicano studies coordinator, from the following courses:

ANTHR	302	Peoples and Cultures of the Southwest
ART	303	Art History of Latin America
FL	183	Spanish for Spanish Speakers
FL	282	Readings in Hispanic Civilization II
HIST	211	Colorado History
HIST	389	History of the Southwest
PSYCH	212	Sexism and Racism in America
SOC	180	Minority and Ethnic Relations
SW	320	Emergence and Counseling of Minorities

Outcomes Assessment Activities

- Upon identification of a Chicano studies minor, the Chicano studies coordinator will initiate a "Chicano studies program" file on the student, with the student's permission. This file will contain the program of design, the student's orientation (research interest, general interest, personal interest, employment interest, etc.), a history of the student's academic progress, the substantive research paper completed in CS 493, a record of meetings with the coordinator, and other examples of the academic and personal qualities of the student.
- At three-, seven-, and 10-year intervals, the graduate will be contacted and asked to evaluate the program's influence.
- In addition to course syllabi, the Chicano studies coordinator will retain a copy of exams administered in Chicano studies courses for a 10-year period. At five-year intervals, the coordinator and the faculty will determine if consistency and academic integrity are being maintained by reviewing instruments of cognitive measurement, student perception forms and trends, alumni comments, and by comparatively analyzing grade distribution patterns.

History Program

The major in history leads to the degree of bachelor of arts (BA) and prepares students for careers in teaching, law, government, and private enterprise, as well as entry into graduate programs.

Program Goals

- To provide students with a general knowledge of history and historical methodology;
- To prepare students, through written research, positive communication skills and research methods to gain knowledge of a given area of history; and
- To prepare students to continue personal study and learning about specific subject areas in the discipline on an independent basis.

Expected Student Outcomes

General Requirements

No grade below C is acceptable in the major or minor.

Specific Requirements for the History Major

HIST Courses		Title	Credits
HIST	101	World Civilization to 1500	5
	102	World Civilization from 1500	5
	185	Historical Research	2
	201	United States History to 1865	3
	202	United States History Since 1865	3
History Electives			12
		TOTAL	30

Specific Requirements for the History Minor

Option I

HIST	102	World Civilization from 1500	5
	202	United States History Since 1865	3
	211	Colorado History	2
History Electives			10
		TOTAL	20

Option II

HIST	185	Historical Research	2
	201	United States History to 1865	3
	202	United States History Since 1865	3
	211	Colorado History	2
History Electives			10
		TOTAL	20

Option III

HIST	101	World Civilization to 1500	5
	102	World Civilization from 1500	5
	185	Historical Research	2
History Electives			8
		TOTAL	20

Outcomes Assessment Activities

- Demonstrated proficiency in writing coherent and accurate statements on specific topics within the discipline, as determined by the history faculty.
- Acceptable performance on standardized examination. The specific exam is to be either selected from national exams or created by the faculty. (Percentile rankings to be established following a pilot test year.)
- Portfolios, of a random sample of majors, to be started on incoming freshmen and/or transfer students with two or more years before graduation. They will include the following information. Vitas, academic transcripts, major papers written for courses in the discipline, co-curricular data, and other pertinent information. The portfolios will be on file in the department chair's office for a period of not less than five years after the student's graduation. Updated copies of all course syllabi, handouts, assignments and exams will be kept in a central file to enable qualified persons to discover how courses are adapted toward program goals.

Philosophy Program

The minor in philosophy complements majors and careers in politics, law, literature, health care, business, technologies, and the liberal arts. By action of the Colorado Commission of Higher Education, the major in philosophy was eliminated and the degree cannot be awarded after the 1990-91 academic year.

Program Goals

- To provide individual courses as well as a minor in general philosophy;
- To help students understand and appreciate the great ideas from philosophy, to see such ideas in relation to their cultural settings, to develop in students the abilities to think, speak, and write in a clear, analytical manner, and to allow students to begin to develop a viable philosophy of life.

Expected Student Outcomes

General Requirements

The philosophy faculty believe that grades are an accurate indicator of performance and a valid predictor of success. Therefore, students who wish a minor in philosophy must complete a minimum of 21 credit hours of approved philosophy courses with grades averaging C or better only one philosophy course with a grade below D will be accepted as credit toward the minor.

Specific Requirements for the Philosophy Minor

PHIL Courses		Title	Credits
PHIL	100	Introduction to Plato	3
or	101	Introduction to Problems in Philosophy	3
	205	Deductive Logic	3
	220	Ethics and Values	3
	313	History of Philosophy Seminar I	3
	314	History of Philosophy Seminar II	3
	315	History of Philosophy Seminar III	3
	401	Epistemology Seminar	3
or	402	Metaphysics Seminar	3
		TOTAL	21

Outcomes Assessment Activities

- Students are to demonstrate proficiency in writing defenses of theses on philosophical topics as determined by the philosophy faculty. A file of representative samples of philosophical writing by students will be retained for five years to document to qualified persons that students are accomplishing the goal of developing their ability to think and write in a clear analytical manner.

Political Science Program

The major in political science leads to the degree of bachelor of arts (BA) and bachelor of science (BS), which prepare undergraduates for careers in law, government and politics. Courses 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.

Program Goals

To prepare graduates with a major in the discipline to be able to:

- Demonstrate a basic understanding of historical, philosophic and empirical foundations of political science;
- Demonstrate a general command of knowledge about the American political system, comparative and international politics, the history of political thought, and standard political science research approaches; and
- Demonstrate ability to continue personal study and learning on an independent basis about specific subjects in the discipline.

To prepare graduates with a minor in the discipline to be able to:

- Demonstrate a basic understanding of the nature of the discipline; and
- Demonstrate general knowledge and understanding of the American political system and of comparative and world politics.

Expected Student Outcomes

General Requirements

- Majors are expected to complete a minimum of 36 semester credit hours in political science (including 18 hours in the political science core) with a cumulative GPA of 2.5 or higher.
- Minors must complete a minimum of 24 semester credit hours in political science (including 9 credit hours in the core) with a cumulative GPA of 2.0 or higher.
- Students must demonstrate proficiency in writing coherent and accurate statements on specific topics within the discipline, as determined by the political science faculty.
- 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 students and students wishing to receive certification as legal assistants are advised to consult the department chair.
- Depending on their interests and goals, students are encouraged to take one year of foreign language or courses in statistics.

Specific Requirements for the Political Science Major

POLSC Courses		Title	Credits
POLSC	101	American National Politics	3
POLSC	201	Comparative Politics	3
or	202	World Politics	3
	210	Techniques of Analysis	3
	370	History of Political Thought	3
	493	Seminar for Majors	3
Political Science Electives			18
		TOTAL	36

Specific Requirements for the Political Science Minor

POLSC	101	American National Politics	3
	201	Comparative Politics	3
or	202	World Politics	3
Political Science Electives			15
		TOTAL	24

Outcomes Assessment Activities

To assist the political science faculty in the ongoing evaluation of its program and to document accomplishment of the expected outcomes, patterns of achievement for each student majoring or minoring in the discipline will be:

- measured periodically through the assignment of letter grades representing a five-point performance scale; and
- demonstrated by acceptable performance on a standardized national examination, such as the ETS Political Science Achievement Test, conducted during the spring semester for both sophomores and graduating seniors in the discipline.

In addition, a portfolio on each graduate majoring in the discipline will be maintained which will include: vita, academic transcript, major papers written for courses in the discipline over the several years of the student's study at the university and other pertinent information. The portfolios will reflect the graduates' judgment of their academic preparation for subsequent professional and career performance and will be collected at intervals of one, three and five years after graduation.

Social Science Program

- The interdisciplinary major in social science leads to the degrees of bachelor of arts (BA) and bachelor of science (BS) degree.

- Social scientists study people and social institutions, especially the relationships and impacts they have with and on each other. Their research provides insights that help in understanding the ways individuals and groups make decisions, exercise power or respond to change. Social scientists 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 from an industrial- to a service-oriented system, a greater need for "people-oriented" specialists is developing. Job opportunities in applied fields include areas such as program administration, and evaluation and research in both the public and private sectors. Related careers are teaching, planning, law, archives, museology and mass communications.

Program Goals

- To prepare students to function as knowledgeable and responsible individual citizens in society;
- To prepare students for the world of work exercising professional competence in their specific career;
- To prepare students for a role of leadership within the broader society; and
- To maintain accredited status with NCSS and NCATE.

Expected Student Outcomes

General Requirements

- No grade below C in the major or minor.
- A prerequisite of a 2.5 cumulative GPA in the major for student teaching.
- Proficiency in writing coherent and accurate statements on specific topics within the discipline. This is to be demonstrated in those major courses with a specific writing component.
- Students in the elementary and secondary education tracks must demonstrate, before professionals, the following abilities: to communicate knowledge in various areas of the discipline, to demonstrate information contained within those disciplines, to coherently organize that information and to work in group situations.

Specific Requirements for the Social Science Major

General Track	Credits
Social Science Core	27
Specialty Core	24
TOTAL	51

International Relations Track	
Social Science Core	27
Specialty Core	30
TOTAL	57

Public Relations Track	
Social Science Core	25
Specialty Core	27
TOTAL	52

Elementary Education Track	
Social Science Core	49

Secondary Education Track	
Social Science Core	35
Specialty Core	16
TOTAL	51

Courses must be chosen in consultation with a social science adviser. For teaching endorsement requirements, see the *Teacher Education Department* section of this catalog.

Specific Requirements for the Social Science Minor

- Completion of 25 semester hours in four of the disciplines in the eight areas of the social sciences including either POLSC. 150, Human Experience; or SOCSC. 151, Society and Technology; and
- Proficiency in writing coherent and accurate statements on specific topics within the minor course work taken.

Outcomes Assessment Activities

Preparation of a portfolio on randomly selected freshmen to be added to during their career at USC. These portfolios will contain a vita, academic transcripts, major papers written for some courses in the major, co-curricular data and other pertinent data. An evaluation of the portfolios will be located in the department chair's office for a minimum of five years following the student's graduation.

ENGLISH/FOREIGN LANGUAGES DEPARTMENT

CHAIR: K. Taylor
FACULTY: Bassein, Bright, Covi, Croxton, Dille, Griffin, Illick, Kaplan, Milne, Morales, Olin, Senatore, C. Taylor, Vincent, Wiedemann

English Program

The major in English leads to a degree of bachelor of arts (BA) and prepares graduates for advanced academic work and for careers requiring critical, analytic and composing skills in areas such as teaching, business, media, public service and the arts. A minor in English is also available.

Program Goals

- Students will become familiar with significant traditions in literature.
- Students will become familiar with various techniques in the analysis and understanding of literature, as well as gain aesthetic appreciation of great literature.
- Students will become familiar with the development of language and its application relative to vocational and avocational interests.
- Students will gain proficiency in writing (clarity and accuracy), in interpreting, and synthesizing materials and ideas.

Expected Student Outcomes

The English faculty believe that students' grades are valid indicators of students progress and performance; therefore, students must complete, with a grade of C or better, all courses counting toward the major or minor.

Requirements for the English Major

- Major requirements are 36 or more semester credit hours of courses in English, 14 of which must be upper-division. Courses must be chosen in consultation with an adviser in English.
- Students must fulfill the university language requirements for the BA degree.

Requirements for the English Minor

ENG Courses		Title	Credits
ENG	212	American Literature II	3
	232	Literature of English II	3
	340	Advanced Composition	3
	391	Special Topics	1-3
or	491	Special Topics	1-3
ENG Electives (chosen in consultation with an adviser in English)			5
		TOTAL	20

For teaching endorsement requirements, see the *Teacher Education Department* section of this catalog.

Co-curricular requirements

The English faculty supports and encourages English majors' involvement in student organizations and participation in tutoring activities in the community and on campus.

Outcomes Assessment Activities

A central file of course syllabi with representative assignments and examinations, which meet program objectives, will be maintained by the department for inspection by qualified persons.

English major

- Students will submit a portfolio of at least eight papers written in the major field (six or more pages each) which demonstrate curricular outcomes. Portfolio papers may be either initial or revised papers.
- Portfolios will contain students' work from each year of enrollment as a major to demonstrate the progress toward their degrees.
- Students will participate in a senior-year seminar in which vocational and professional standards will be emphasized. The seminar will include evaluation of the portfolio papers.
- Students' portfolios will be maintained in a central file by the department for a period of five years for inspection by qualified persons.

English minor

The course paper(s) prepared in ENG 391 or ENG 491 will demonstrate achievement of the expected student outcomes as determined by the adviser and a second reader designated by the English department.

Foreign Languages Program

The major in Spanish leads to a degree of bachelor of arts (BA) in foreign languages and prepares students for public school teaching and certification, for admission to graduate school, for careers in international organizations, government and businesses.

Minors in French, Italian, and Spanish complement a wide variety of majors to enhance students' abilities to compete for jobs where knowledge of a foreign language is desirable.

Courses in German, Russian, and those with the general foreign language prefix are designed for students with specific interests in foreign languages.

Program Goals

It is the goal of the foreign language major and minors programs to prepare students for teaching, graduate studies, or for careers in international organizations, government, and business.

General Requirements

- The foreign language faculty subscribe to the proficiency standards delineated by the American Council on the Teaching of Foreign Languages which focus on abilities in speaking, listening, reading, writing and culture.
- Majors in Spanish will be required to demonstrate proficiency at the level of "superior" in at least two of the five areas and no less than "advanced plus" in any single area as demonstrated on the ACTFL tests.

- Students minoring in French, Italian and Spanish will be required to demonstrate a minimum proficiency level of "intermediate" in culture and "intermediate high" to "advanced" in the other four areas.
- Students must complete with a grade of C or better all courses counting toward the major or minor.

NOTE: Any language 101 and 102 may be waived for students participating in the Advanced Placement Program.

Specific Requirements for the Spanish Major

SPN Courses		Title	Credits
SPN	101	Beginning Spoken Spanish I	5
	102	Beginning Spoken Spanish II	5
	201	Spanish Grammar and Composition I	3
	202	Spanish Grammar and Composition II	3
	211	Intermediate Spanish Conversation I	2
	212	Intermediate Spanish Conversation II	2
	281	Readings in Hispanic Civilizations I	3
	282	Readings in Hispanic Civilizations II	3
	301	Advanced Spanish Grammar & Conversation	3
	302	Adv. Spanish Composition & Conversation	3
SPANISH ELECTIVES			14
		TOTAL	46

Specific Requirements for the Spanish Major (Bilingual Emphasis)

SPN Courses		Title	Credits
SPN	101	Beginning Spoken Spanish I	5
SPN	102	Beginning Spoken Spanish II	5
SPN	201	Spanish Grammar and Composition I	3
SPN	202	Spanish Grammar and Composition II	3
SPN	211	Intermediate Spanish Conversation I	2
SPN	212	Intermediate Spanish Conversation II	2
SPN	281	Readings in Hispanic Civilizations I	3
SPN	282	Readings in Hispanic Civilizations II	3
SPN	301	Advanced Spanish Grammar and Conversation	3
SPN	451	Studies in Spanish Linguistics	1
FL	100	Introduction to Comparative Linguistics	3
FL	388	Materials and Techniques in Teaching FL	2
ENG	222	Western World Literature	3
ENG	304	Language Awareness & Human Behaviors	3
ENG	340	Advanced Composition	3
ENG	342	English Syntax and Usage	2
ENG	351	Children's Literature	2
		TOTAL	48

Other Required Courses (Both Emphases)

ENG	130	Introduction to Fiction	1
ENG	131	Introduction to Plays	1
ENG	132	Introduction to Poetry	1
HIST	101	World Civilization to 1500	
or			
HIST	102	World Civilization since 1500	5
		TOTAL	8

Specific Requirements for the Spanish Minor

SPN Courses		Title	Credits
SPN	101	Beginning Spoken Spanish I	5
	102	Beginning Spoken Spanish II	5
	201	Spanish Grammar and Composition I	3
	202	Spanish Grammar and Composition II	3
	211	Intermediate Spanish Conversation I	2
	212	Intermediate Spanish Conversation II	2
	281	Readings in Hispanic Civilizations I	3
	282	Readings in Hispanic Civilizations II	3
		TOTAL	26

Specific Requirements for the French Minor

FRN	101	Beginning Spoken French I	4
	102	Beginning Spoken French II	4
	201	Intermediate French I	4
	202	Intermediate French II	4
FRENCH ELECTIVES ABOVE 300			7
		TOTAL	23

Specific Requirements for the Italian Minor

ITL	101	Introduction to Italian I	4
	102	Introduction to Italian II	4
	201	Intermediate Italian I	4
	202	Intermediate Italian II	4
ITALIAN ELECTIVES ABOVE 300			7
		TOTAL	23

Specific Requirements for teaching endorsements in Spanish and French

A minimum of 32 semester credit hours as approved by a departmental adviser.

For teaching endorsement requirements, see the *Teacher Education Department* section of this catalog.

Outcomes Assessment Activities

The proficiency of all foreign language majors and minors will be assessed using materials developed by the American Council of Teachers of Foreign Languages during the senior year.

HUMAN PERFORMANCE AND LEISURE STUDIES DEPARTMENT

Chair: Aguilar
Faculty: Banks, Cockrell, Stutters

The major in kinesiology leads to the degree of bachelor of science (BS). Minors in physical education, coaching and recreation are available. Activity courses are open to all students.

The professional preparation leading to a degree in kinesiology includes teacher certification with endorsements in kindergarten through 12th grade. Certification requirements are met by completing the kinesiology program and the teacher-certification core listed under the kinesiology major requirements.

The major in recreation leads to the degree of bachelor of science (BS) and prepares students for positions of leadership in a variety of recreational service agencies. Prospective employers include parks and recreation departments at the city, county, district and state levels as well as voluntary youth agencies such as the YWCA, boys' and girls' clubs and scouting. Additional areas of employment include recreation programs in the military hospital commercial, and industrial fields or employee recreation, or outdoor recreation.

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. Others prepare for program areas such as sports and athletics, social and cultural recreation programming, arts and crafts or other emphases.

Kinesiology Program Goals

- Graduates will have gained competency in understanding the philosophy and historical basis for kinesiology/physical education as a discipline.
- Graduates will possess a depth of knowledge in the components of kinesiology as they relate to human movement.
- Graduates will have gained competencies related to skills, knowledge and activities included in physical education curricula.

Expected Student Outcomes

General Requirements

Majors are required:

- to complete an approved program of courses which is composed of a minimum of 45 credit hours with a cumulative GPA of 2.5 or higher;
- to earn a minimum grade of C in all major courses;
- to complete a minor or approved area of concentration with a cumulative GPA of 2.0 or higher;
- to earn a cumulative GPA of 2.0 or higher in the required English/speech communications courses;
- to complete with a grade of C or higher a minimum of three term or professional papers that reflect facility in paper-writing in courses in the kinesiology major; and
- to complete a computer literacy course or present documented evidence of competency in computer application.

Specific Requirements for the Kinesiology Major

KIN Courses		Title	Credits
KIN	254	Anatomical Kinesiology	2
	258	Maturational Kinesiology	2
	262	Psychological Kinesiology	2
	364	Mechanical Kinesiology	2
	442	Physiological Kinesiology	2
		TOTAL	10

Other Required Courses

HP	231	CPR	1
	232	Advanced First Aid	2
	233	Hist. & Prin. of PER	3
	242	S&T of Motor Learning and Elem. Act.	3
	243	S&T of Rhythmic Activities	1
	244	S&T of Soccer & Volleyball	2
	245	S&T of Wt. Train. & Fitness Act.	2
	246	S&T of Tr. & Fi., Basketball and Softball	2
	247	S&T of Tumbling	1
	248	S&T of Ind. & Dual Spts (Golf, Tennis, Racquetball & Badminton)	3
	322	Elementary School PE	2
	342	Training Room Methods	2
	343	Measurement & Evaluation in HP	2
	461	Program Administration in PERA	3
	465	Adapted PER	2

Two courses must be selected from among the following:

HP Courses		Title	Credits
HP	276	WSI	2
	471	Coaching & Officiating Football	2
	472	Coaching & Officiating Basketball	2
	473	Coaching & Officiating Track & Field	2
	474	Coaching & Officiating Gymnastics	2
	475	Coaching & Officiating Volleyball	2
	482	Coaching & Officiating Wrestling	2
	483	Coaching & Officiating Baseball	2
		TOTAL	45

For the teaching endorsement requirements, see the *Teacher Education Department* section of this catalog.

Co-curricular Requirements

The faculty of the of human performance and leisure studies department believe that graduates must have co-curricular experiences that complement and reinforce the curricular experiences. Therefore, kinesiology major students must provide documented evidence of successful participation in jobs, clubs, student and professional organizations, or other activities related to their major field of study.

Outcomes Assessment Activities

In addition to the assessment which is inherent in the general requirements, each kinesiology major student must prepare a portfolio which includes academic transcripts, resume, completed placement file, and other pertinent information which indicates increasingly greater accomplishments in progress toward professional goals throughout the student's higher education experience.

Recreation Program Goals

- Graduates will have gained competency in understanding the philosophical, historical and socio-psychological basis of recreation as a discipline.
- Graduates will possess a depth of knowledge in the various emphasis areas of recreation as they relate to humans in society.
- Graduates will have gained competencies encompassing the broad area of recreation including those pertaining to outdoor pursuits, therapeutic recreation, and public and private recreation program administration.

Expected Student Outcomes

General Requirements

Majors are required:

- to complete an approved program of courses which is composed of a minimum of 54 credit hours with a cumulative GPA of 2.5 or higher;
- to earn a minimum grade of C in all major courses;
- to complete a minor or approved area of concentration with a cumulative GPA of 2.0 or higher;
- to earn a cumulative GPA of 2.0 or higher in the required English/speech communications courses;
- to complete, with a grade of C or higher, a minimum of three term or professional papers that reflect facility in paper writing for courses in the recreation major; and
- to complete a computer-literacy course or present documented evidence of competency in computer application.

Specific Requirements for Recreation Majors

Courses		Title	Credits
HP	233	Hist & Prin. PER	3
REC	340	Prin. Comm. Rec. Prog.	2
REC	350	Leader & Supr. Rec.	2
REC	389	Practicum	3
HP	461	Program Admin in PERA	3
REC	480	Rec. for Spec. Popul.	3
REC	481	Outdoor Recreation	3
REC	482	Recreation Management	3
REC	493	Seminar	1
REC	498	Internship	9

Majors select from an approved list of courses in the following areas:

Courses	Title	Credits
Allied		6
Methods		16
	TOTAL	54

Co-curricular Requirements

The faculty of the of human performance and leisure studies department believe that graduates must have co-curricular experiences that complement and reinforce the curricular experiences. Therefore, recreation majors must provide documented evidence of successful participation in jobs, clubs, student and professional organizations, or other activities related to their major field of study.

Outcomes Assessment Activities

In addition to the assessment which is inherent in the general requirements, each student majoring in recreation must prepare a portfolio which includes academic transcripts, a resume, a completed placement file, and other pertinent information which indicates increasingly greater accomplishments in the progress toward professional goals throughout the student's higher education experiences.

Program Goals for Physical Education Minors

- Minors will have gained understanding of the philosophical and historical base of physical education as a discipline.
- Minors will have gained competencies related to skills, knowledge and activities included in physical education programs.

Expected Student Outcomes

General Requirements

- Minors will complete a minimum of 20 credit hours, with a cumulative GPA of 2.5 or higher in approved minor courses.
- Minors will earn a minimum grade of C in all minor courses.
- Minors will earn a cumulative GPA of 2.0 or higher in the required English/speech communication courses.
- Minors will present documented evidence of successful writing skills as indicated by written assignments in academic course work.

Specific Requirements for the Physical Education Minor

HP Courses		Title	Credits
HP	232	Advanced First Aid	2
	233	History and Principles of PER	3
	322	Elementary School PE	2
or	378	Methods in Physical Education	
	461	Program Administration in PERA	3
		TOTAL	10

Skills & Techniques Courses: Select 10 hours

HP	242	Skills & Tech of Mtr Learn & Elem Act	3
	243	Skills & Tech of Rhythmic Act	1
	244	Skills & Tech of Soccer and Volleyball	2
	245	Skills & Tech of Wt. Train & Fitness Act	2
	246	Skills & Tech of T & F, Bskt & Softball	2
	247	Skills & Tech of Tumbling	1
	248	Skills & Tech of Ind & Dual Sports	3
		TOTAL	20

Co-curricular Requirements

Physical education minor students must show successful co-curricular experiences that complement and reinforce the physical education minor.

Outcomes Assessment Activities

In addition to the assessment which is inherent in the general requirements, each physical education minor student must prepare a portfolio which includes academic transcripts and information in regard to successful writing skills and co-curricular experiences related to the discipline of physical education.

Program Goals for Coaching Minors

Minors will have gained:

- knowledge of the anatomical and mechanical principles of human movement;
- understanding of prevention, care and rehabilitation of athletic injuries;
- understanding of organization and administration of athletic programs; and
- knowledge of coaching and officiating techniques in selected sports activities.

Expected Student Outcomes

General Requirements

- Minors will complete a minimum of 21 credit hours, with a cumulative GPA of 2.5 or higher in approved minor courses.
- Minors will earn a minimum grade of C or higher in minor courses.
- Minors will earn a cumulative GPA of 2.0 or higher in the required English/speech communication courses.
- Minors will present evidence of successful writing skills as indicated by written assignments in academic course work.

Specific Requirements for the Coaching Minor

Courses		Title	Credits
HP	232	First Aid	2
KIN	254	Anatomical Kinesiology	2
HP	342	Training Room Methods	2
KIN	364	Mechanical Kinesiology	2
HP	461	Prog Adm In PERA	3

With the approval of their adviser, the student must select 10 credit hours from the following courses:

HP	248	Skills & Tech of Ind. & Dual Spts	3
	471	Coaching & Officiating Football	2
	472	Coaching & Officiating Basketball	2
	473	Coaching & Officiating Track & Field	2
	474	Coaching & Officiating Gymnastics	2
	475	Coaching & Officiating Volleyball	2
	482	Coaching & Officiating Wrestling	2
	483	Coaching & Officiating Baseball	2
		TOTAL	21

Co-curricular Requirements

Coaching minors must show successful co-curricular experiences that complement and reinforce the coaching minor program.

Outcomes Assessment Activities

In addition to the evaluation inherent in the general requirements, coaching minors must prepare a portfolio which includes academic transcripts and information in regard to successful writing skills and co-curricular experiences related to the discipline of physical education.

Program Goals for Recreation Minors

- Minors will have gained knowledge of the philosophical and historical base of recreation as a discipline.
- Minors will possess a depth of knowledge in a selected emphasis area of recreation.

Expected Student Outcomes

General Requirements

- Minors will complete a minimum of 20 credit hours, with a cumulative GPA of 2.5 or higher in approved minor courses.
- Minors will earn a minimum grade of C or higher in minor courses.
- Minors will earn a cumulative GPA of 2.0 or higher in the required English/speech communication courses.
- Minors will present documented evidence of successful writing skills as indicated by written assignments in academic course work.

Specific Requirements for the Recreation Minor

Courses		Title	Credits
REC	340	Principles of Community Rec Prog	2
	350	Leadership and Supervision in Rec	2
	389	Practicum	3
	481	Outdoor Rec	3
	493	Seminar	1
	461	Prog Adm in PERA	3

Recreation minor students must complete an approved emphasis tract of six semester hours in one of the following areas: outdoor recreation, management, or community recreation.

TOTAL 20

Co-curricular Requirements

Recreation minor students must show successful co-curricular experiences that complement and reinforce the recreation minor.

Outcomes Assessment Activities

In addition to the assessment, which is inherent in the general requirements, each recreation minor must prepare a portfolio which includes academic transcripts and information in regard to successful writing skills and co-curricular experiences related to the discipline of physical education.

INTERDISCIPLINARY STUDIES PROGRAM

FACULTY: Ryan

The university's Honors Program provides educational enrichment experiences for academically talented students.

Program Goals for the Minor in Honors

- To provide a sequence of thematic, interdisciplinary seminars that will enhance both the students' depth and breadth of knowledge.
- To offer intellectually invigorating challenges and opportunities to students.
- To provide a program that builds to a project undertaken in the student's senior year under the one-to-one supervision of a faculty mentor in the student's major field.

Expected Student Outcomes

General Requirements

- Students who wish to apply to the university Honors Program may either be: 1) high school seniors who have at least a 3.50 GPA and a composite score of at least 22 on the ACT (or the SAT equivalent); or 2) transfer or continuing USC students who have maintained at least a 3.30 GPA in their college-level courses.
- Students must complete 20 semester hours of honors coursework, labeled Interdisciplinary Studies (IS) in the catalog, in order to receive the minor in honors.
- Students must demonstrate the ability to make formal presentations, to write effectively, and to read and think critically.

Specific Requirements for the Honors Minor

Honors Courses		Title	Credits
IS	101,102,103 (1 hour each)	Freshman Honors Seminar I (Natural and Physical Science)	3
	104,105,106 (1 hour each)	Freshman Honors Seminar II (Liberal and Fine Arts)	3
	201,202,203 (1 hour each)	Sophomore Honors Seminar I (Applied Science & Eng. Tech.)	3
	204,205,206 (1 hour each)	Sophomore Honors Seminar II (Business and the professions)	3
	301	Junior Honors Seminar (International & multicultural issues)	3
	401	Senior Honors Seminar (Issues in research and education)	3
	490	Special Projects (Individualized, directed, independent study on honors project)	2
		TOTAL	20

Co-curricular Requirements

Honors students are encouraged to join various honor societies at USC including Alpha Lambda Delta, a freshman honor society; Alpha Chi, for junior and seniors; and departmental honor societies.

Students in the Honors Program participate in several social, cultural and educational events each semester, including field trips to plays, concerts and museums; special dinners with faculty members, receptions with distinguished visitors; and honors lectures.

Students are encouraged to attend and present papers at regional and national meetings of the National Collegiate Honors Council and various honor societies.

Outcomes Assessment Activities

Student portfolios are compiled for each freshman entering the Honors Program. The portfolios are maintained in the Honors Program office and include, but are not limited to, the following assessment items:

- The student's initial application to the program, including ACT or SAT scores, high school GPA, class rank, hobbies, awards and intended major;
- Videotapes of each student making at least two formal presentations;
- Co-curricular inventories including evidence of awards, presentations student government involvement and participation in campus organizations for each student;
- Selected examples of each student's writing;
- The student's honors project; and
- An updated list of the honors courses taken and the grades received.

MASS COMMUNICATIONS DEPARTMENT

CHAIR: Miller
FACULTY: Anderson, Binkly, Orman, Pavlik

The major in mass communications leads to the degrees of bachelor of arts (BA) and bachelor of science (BS).

A degree in mass communications leads to careers in reporting, editing, broadcast news direction and production, public relations and advertising.

USC TODAY, the university's weekly newspaper, is published each Wednesday of the regular academic year as a laboratory tool of the mass communications department. 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 from qualified students. The newspaper is funded 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.

KTSC-FM is licensed to USC as an educational radio station by the Federal Communications Commission. Operated by the mass communications department, 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.

USC's Public Broadcasting System affiliate, KTSC-TV, provides laboratory training and on-campus jobs for television students.

Departmental Goals

The primary goal of the mass communications department is to offer a pragmatic and professionally oriented program aimed at preparing majors for successful careers in the media and related areas.

Expected Student Outcomes

General Requirements

- Majors are required to specialize in one of four emphasis areas offered by the department.

  News-Editorial
  Telecommunications
  Public Relations
  Advertising

- Successful mass communications majors will demonstrate sufficient knowledge, comprehension and analytical skills by their ability to *evaluate* specific communication events in the proper context of their emphasis area.

- Each mass communications faculty member will keep, in the mass communications department's central file, a set of examination materials as well as all course outlines or syllabi that list the objectives and skills to be achieved during the semester. It is this central pool of materials that describes the detailed expectations and accountability elements for the Mass Communications major.

- The mass communications department feels that grades are valid quantitative indicators of student performance. Students' GPA in the major or minor will be used by emphasis area advisers for both formative and summary evaluations of majors and minors.

- Students graduating with a degree in mass communications must achieve a total grade-point average of 2.5 within the major — The GPA will be calculated on all courses appearing on the student's transcript with the MACOM prefix.

- Students graduating with a degree in mass communications must pass all mass communications *emphasis area* courses with a grade of C or better.

- While it is necessary for mass communications majors and minors to meet the minimum GPA standards set by the department and university, it is expected that graduates will *exceed* these standards.

Specific Requirements for the Mass Communications Major

MACOM Courses		Title	Credits
MACOM	101	The Mass Media	3
	110	Career Orientation	1
	201	News Writing	3
	216	Advertising	3
	265	History of the Mass Media	3
	280	Public Relations	3
	411	Journalism Law and Ethics	5
	415	Theories of Mass Communications	3
	493	Mass Media Seminar	3
		TOTAL	27

Specific Requirements for the Emphasis in Telecommunications

MACOM	222	Broadcast News Writing	3
	223	R-TV Script Writing	3
	226	Intro to TV Production	4
	320	Broadcast Programming	3
	425	Audience Research Methods	3
MACOM ELECTIVES			4
		TOTAL	20

Specific Requirements for the Emphasis in Public Relations

MACOM	202	Feature Writing	3
	311	Copy Editing	3
	421	PR Case Problems	3
	422	PR Campaigns	3
	425	Audience Research Methods	3
MACOM ELECTIVES			5
		TOTAL	20

Specific Requirements for the Emphasis in News Editorial

MACOM	202	Feature Writing	3
	301	Editorial Writing	3
	311	Copy Editing	3
	445	Reporting Public Affairs	5
MACOM ELECTIVES			6
		TOTAL	20

Specific Requirements for the Emphasis in Advertising

MACOM	302	Advertising Writing	3
	316	Advertising Campaigns	3
	425	Audience Research Methods	3
MKTG	340	Principles of Marketing	3
MACOM ELECTIVES			8
		TOTAL	20

Specific Requirements for the Mass Communications Minor

Students who wish to minor in mass communications must complete 22 credit hours of planned course work approved by a departmental adviser. A minor in mass communications may be general or emphasis-specific.

Co-curricular Requirements

1) The thrust of the mass communications department is pragmatic in design. Therefore, all students are encouraged to involve themselves with the opportunities provided by participation in the following media labs:

- Advertising
- Desktop Publishing
- USC TODAY Newspaper
- KTSC-FM Radio
- KTSC-TV Television

The media labs provide the necessary entry to strongly suggested *field experience* and *internship* programs and opportunities.

2) In addition, mass communications majors and minors are encouraged to join and participate in additional co-curricular activities:

- Sigma Delta Chi
- Public Relations Student Society of America
- Community/University Projects

Outcomes Asssessment Activities

Each mass communications major or minor is required to maintain a portfolio of all salient work or projects completed while in the department.

The expectations and requirements for the portfolio are described for each student during the Career Orientation class required of all mass communications majors and minors. The portfolios are proctored by the emphasis advisers and progress is monitored during advisement.

The mass communications department insists that the portfolio demonstrate a pattern of sustained academic growth and development of the major and minor, appropriate to the student's emphasis area.

During the student's last semester, an exit interview and evaluation will be conducted by the mass communications department's faculty.

The portfolio should reflect the quality and level of intellectual and scholarly work undertaken by the student while in the department, relative to the qualitative, quantitative, ethical, legal and aesthetic dimensions of the field. The appropriateness of the content is dictated by the student's emphasis area and is prescribed by the individual's adviser.

All portfolios will remain in the department's central files for two years after the student's graduation, to enable qualified persons to determine how well student performance measures up to program goals. The graduate can claim the material after that period. The department will continue every effort to track graduates in order to gather further indications of success.

MUSIC DEPARTMENT

CHAIR: Beck
FACULTY: Cedrone, Duncan, Kellogg, Markowski, Muller, Strobel, Vorce

The degree in music leads to a degree of bachelor of arts (BA) with emphasis in theory, performance, or music education (K-12). The department is fully accredited by the National Association of Schools of Music.

Departmental Goals

- To educate the student in the fields of music theory and history and to train the student to be proficient in performance in voice or an appropriate instrument.
- To develop increased aesthetic awareness and the capacity to evaluate musical activity. These will be, in part, by-products of the specific educational goals articulated in the Student Music Manual published by the music department. In addition, by means of required attendance at a variety of performances, students will be exposed to a diversity of musical experiences during their stay at the university. The experiences, in addition to the student's own study and personal performance, should serve to realize such broad aims.
- To prepare candidates for the bachelor of arts degree with a music education emphasis with special knowledge in the fields of teaching methodology. Such methodology may be divided into two categories; 1) those pertaining to all disciplines and 2) those pertaining to music. The latter is a matter of concern for the music department.
  1) The student should demonstrate knowledge of the various methodological systems contained within the broad field of music education (e.g., Kodaly, Orff).
  2) The student should demonstrate a knowledge of current pedagogical trends directly affecting the teaching of music.
- To maintain accreditation as defined by the National Association of Schools of Music for all of its programs.

Expected Student Outcomes

General Requirements

- Students are required to complete all major and minor courses with grade of C or better and maintain a cumulative GPA of 2.5 or better.
- A BA degree with an emphasis in music education K-12, music performance or music theory is excellent preparation for a wide variety of careers and a large number of graduate programs, including those of major universities and professional schools and conservatories; therefore, graduates must complete the department's MUS 110 Career Plan-

ning in Music course and design an individualized career plan prior to the beginning of their senior year. The course also assists music minors in career choices.

- The ability to think across disciplines contributes significantly to the educational experience; therefore, graduates must successfully complete an approved minor or area of concentration in a discipline other than music with a cumulative GPA of 2.5 or better. For the music education emphasis, education is the appropriate minor.
- Literacy and quantitative skills are prerequisite to advanced study or careers; therefore, appropriate academic music courses for majors will require students to demonstrate the abilities to compose, sequence and perform musical compositions at a computer synthesizer workstation and to demonstrate basic word-processing skills.
- The attainment of minimum performance skills is a requisite to participating successfully in an ever-changing and competitive world. The minimum *Performance Standards*, identified in the USC Music Student Manual published by the USC department of music, provide representative examples of music literature and repertoire to be successfully completed for each of the three musical areas of concentration . In addition, *all music majors* will be required to complete successfully the piano proficiency requirement.
- Knowledge of specific subject areas, as identified by the Colorado Department of Education and recommended by the National Association of Schools of Music, in music education, music theory, music history and music performance will be measured through pre- and post-testing. An organized portfolio of student progress, pre- and post-testing will be maintained by the music department.

Note: MUS 100, 118 and 147 may be waived for students passing the appropriate departmental tests.

Specific Requirements for the Music Education Major

MUS Courses		Title	Credits
MUS	100	Fundamentals of Music*	3
	101/101L	Theory I/Lab I	4
	102/102L	Theory II/Lab II	4
	110	Career Planning in Music	1
	118	Music Appreciation*	3
	161/162	Applied Major	4
	147	Functional Piano Class/Proficiency *	1
	170-4	Major Ensemble (4 terms)	4
	181/381	Lab Choir	2
	182/382	Lab Band	2
	201/201L	Music Theory III/Lab III	4
	202/202L	Theory IV/Lab IV	4
	261/262	Applied Major	4
	305	Computer and Electronic Technology in Music	1
	321/322	Music History I, II	6
	349/350	Conducting I, Choral; II, Instrumental	4
	361/361	Applied Major	4
	370-4	Major Ensemble (3 terms)	3
	461	Applied Major	2
	400	Arranging/Orchestration I	2
		TOTAL	58

Specific Requirements for the Music Education Major K-12

MUS Courses		Title	Credit
MUS	144	Woodwind Class	1
	145	Brass Class	1
	241	String Class	1
	242	Percussion Class	1
	246	Voice Class	1
	352	Teaching Music in the Elementary School	2
	377	Materials & Tech of Tch Choral Music	2
	378	Materials & Tech of Tch Instrumental Music	2
	420	Counterpoint OR	
	421	Analytical Techniques	2
		TOTAL	13*

*Two additional semester hours are required for piano K-12 majors.

For the teaching endorsement requirements for K-12, see the *Teacher Education Department* section of this catalog.

Specific Requirements for the Music Performance or Theory Major

MUS Courses		Title	Credit
MUS	370-4	Major Ensemble	1
	401	Arranging/Orchestration II	2
	420	Counterpoint	2
	421	Analytical Techniques	2
	462	Applied Music	2
	491	Senior Recital & Upper Division Music Electives	5
		TOTAL	14

Specific Requirements for the Music Minor

MUS Courses		Title	Credit
MUS	101/101L	Theory I/Lab I*	4
	102/102L	Theory II/Lab II	4
	110	Career Planning In Music	1
	118	Music Appreciation*	3
	147	Functional Piano Class	1
	163	Applied Minor Lesson	1
	164	Applied Minor Lesson	1
	170-174	Four terms of large ensemble	4
	263	Applied Minor Lesson	1
	264	Applied Minor Lesson	1

349	Conducting I Choral	
OR 350	Conducting II Instumental	2
	TOTAL	23

*Requires pre-test for admission/placement.

Co-curricular Requirements

Prior to graduation, students must document evidence of participation in student music organizations, clubs, musical performance groups, music-related employment or experiences, or other activities related to the program of study in music.

Outcomes Assessment Activities

- Students must prepare a senior music thesis/writing project and give a performance recital or composition recital to a committee of peers and faculty no later than their penultimate semester of enrollment. The music thesis/writing project and/or musical compositions must be bound and the recital must be recorded for inclusion in the music department's library collection.
- Students must document proof of having submitted for juridical criticism a minimum of three different projects and recitals to the end of classes in their final semester of enrollment.
- Advisers will supervise the development of portfolios for a cross section of music majors. Portfolios will contain evidence of the projects and recitals, and relevant curricular and co-curricular activities.

PSYCHOLOGY DEPARTMENT

CHAIR: Kulkosky
FACULTY: Cameron, Gardner, Hearn, R. Krinsky, S. Krinsky, Madrid, Malouff, Mo, Post-Gorden, Schnur

The major in psychology leads to the degrees of bachelor of arts (BA) and bachelor of science (BS). An extensive curriculum allows the student to choose from a variety of specialties within the field. A modern facility with extensive teaching, counseling and research facilities is available. Psychology faculty are actively involved in research projects in which interested students are invited to participate.

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 for bachelor's degree holders, students who seek careers as professional psychologists should seriously consider the appropriate terminal degree in psychology.

Departmental Goals

- Psychology graduates should have factual knowledge about significant theories, issues, and methods of inquiry. They should be able to compare the major theoretical perspectives represented in psychology.

- Psychology graduates should have acquired the skills needed to comprehend basic psychological concepts such as critical thinking, statistical thinking, the need for control groups, not confusing correlation with cause, and identifying valid and invalid conclusions based on empirical evidence.
- Graduates should be able to read and write complex prose to comprehend journal articles, and to present a coherent and persuasive argument on a psychological topic.
- Graduates should have skills of information gathering and synthesis including appropriate use of library materials and the ability to derive conclusions after surveying a variety of sources.
- Psychology graduates should be able to demonstrate an understanding of theoretical biases, especially as they relate to minority groups and sexist thinking.
- Students should gain practical experience in the form of relevant volunteer activities, work, internships, practical or research assistantships.

Expected Student Outcomes

General Requirements

PSYCH Courses	Title	Credits
PSYCH 101	General Psychology	3
201/201L	Introduction to Data Analysis/Lab	4
301/301L	Intro. to Psychological Experimentation/L.	4
401	History and Systems of Psychology	3
PSYCHOLOGY ELECTIVES		21
	TOTAL	35

Educational Psychology Emphasis (Select 15 credits)

PSYCH	220	Drugs and Behavior	2
	241	Human Sexuality	2
	242	Educational Psychology	2
	251	Child Psychology	3
	252	Preadolescent and Adolescent Psychology	3
	336/336L	Conditioning and Learning/Lab	4
	337/337L	Cognitive Psychology/Lab	4
	350	The Disabled Minority Child	3
	351	Psychology of Exceptional Individual	3
	381	Principles of Psychological Testing	4
	465	Behavior Modification	3

Mental Health Emphasis (Select 15 credits)

PSYCH	220	Drugs and Behavior	2
	231	Psychology of Family Behavior	2
	311	Theories of Personality	3
	362	Psychopathology	3

	381	Principles of Psychological Testing 4
	463	Psychopathology of Childhood 3
	464/464L	Counseling and Psychotherapy/Lab 4
	465	Behavior Modification 3
	471	Clinical Psychology 3
	475	Group Process 3
	484	Diagnosis and Assessment 3
	494	Field Experience 3-6
	496	Cooperative Education Placement 1-4

Experimental Emphasis (Select 15 credits)

Courses		Title	Credits
PSYCH	220	Drugs and Behavior	2
	314	Environmental Psychology	3
	315	Organizational and Administrative Psych	3
	331/331L	Physiological Psychology/Lab	4
	334/334L	Perception/Lab	4
	335/335L	Motivation/Lab	4
	336/336L	Conditioning and Learning/Lab	4
	337/337L	Memory and Cognition/Lab	4
	352	Social Psychology	3
	410	Advanced Data Analysis	3
	420	Advanced Psychological Experimentation	3
	466	Psychology of Biofeedback	3
	495	Independent Study	1-3

Specific Requirements for the Psychology Minor

- Psychology minors should have basic information about significant theories, issues and methodology of the discipline. They should be able to compare major theoretical perspectives represented in psychology, and apply various psychological explanation to common issues.
- Minors in psychology take 20 credits of psychology, which must include PSYCH 101 and nine credits of upper-division coursework. Credits for PSYCH 240, 440, 496 and 497 do not count toward the minor. A minimum of three credits for PSYCH 295/495 may count toward the minor if the project undertaken is research-based.

Outcomes Assessment Activities

In order to demonstrate attainment of outcome goals, the psychology major will, upon reaching senior status, begin assembling a portfolio consisting of relevant materials from the following list. The Portfolios will be kept in the office of the department chair for at least one year, to enable qualified persons to assess ways in which student work satisfies program goals.

1) A research proposal: may include complete research, presentations, etc.

2) A field experience description and evaluation from supervisor. Include case studies, etc., as appropriate.
3) Individual project with evaluation.
4) On- and off-campus extra-curricular activities.
5) Awards, honors, etc.
6) ACT, SAT or other incoming measures.
7) GRE results or Major Field Achievement Test results.
8) A complete transcript.
9) A term paper (or equivalent) dealing with a theoretical psychological issue.
10) A statement of self-evaluation and future plans.
11) A professional-style resume.

The faculty feel that grades are valid measures of student performance. The department will therefore examine, and maintain records of grades earned by students minoring in psychology as one means of assessment.

SOCIOLOGY/ANTHROPOLOGY/SOCIAL WORK DEPARTMENT

Chair: Means
Faculty: Baca, Buckles, Forsyth, Green, Hughes, Keller, Solis, Wright

The major in sociology leads to the degrees of bachelor of arts (BA) and bachelor of science (BS). The BA is designed for students pursuing a broad, general education in sociology; the BS is designed for those pursuing a more applied, career-oriented program. Both degrees prepare students for graduate studies.

Sociology is the study of human social behavior, and concerns itself with conditions such as crime and delinquency, family problems, social inequality, and organizations in contemporary, industrial society. Sociologists are interested not only in understanding problems, but in resolving them.

The major in sociology prepares students to work in a wide variety of occupations, including education, government, business, industry and private research agencies. Although most sociologists work in universities and colleges, they are increasingly employed in such areas as health care, youth services, drug rehabilitation, law enforcement, probation, corrections and counseling. The baccalaureate degree can lead to a career in law, higher education, or to supervisory positions in civil service.

The anthropology minor provides students with an informed understanding of the cultural diversity evident in human societies and the concepts by which anthropologists explain cultural dynamics. The program emphasizes students having a holistic awareness of the relationships of all the parts of

social and cultural systems. This prepares students to understand anthropological methods and theories and to apply them to academic as well as life experiences.

The social work major leads to the bachelor of social work (BSW) degree. The program is accredited by the Accreditation Commission of the Council on Social Work Education. The primary educational objective of this major is the preparation for beginning professional social work practice with a generalist perspective. In addition, the major prepares students for professional social work education at the graduate level.

Sociology Program Goals

- Graduates will be able to understand and identify the major theoretical perspectives that inform modern sociological analysis.
- Graduates will be able to utilize a range of research methods in conjunction with sociological theory in order to explain and analyze complex social relations and organizations.
- Graduates will be able to apply social analysis to the substantive social area of their emphasis; criminology; aging, health, and sexuality; or general, and will be able to present findings in a clear, understandable and concise manner.
- Graduates will be able to engage in critical thinking about the relationship between social and personal experiences.
- Minors will have an understanding of the significant theories, issues and methodology of the discipline.
- Minors will have an understanding of the relationship between social and personal experiences and the role of social institutions on this process.

Expected Student Outcomes

General Requirements

- Successful completion of the sociology core.
- Successful completion of one of the three sociology tracks.
- No grade below C in sociology courses is accepted for the major or the minor.
- Completion of at least 36 hours in approved sociology courses.

Specific Requirements for the Sociology Major

SOC Courses		Title	Credits
SOC	101	General Sociology	3
	210	Techniques of Analysis	3
	310	Social & Cultural Theory	3
	356	Social Stratification	3
	492	Research Methods	3
		TOTAL	15

Criminology Emphasis

SOC	203	Criminal Justice System	3
	304	Crime and Delinquency	3
	420	Advanced Criminology Theory	3
	405	Sociology Of Law	3
		Electives to be chosen from among:	9
	204	Community Corrections (3)	
	305	Crime and Women (3)	
	351	Social Deviance (3)	
	353	Penology (3)	
	391	Structural & Elite Crime (3)	
	407	Family Violence (3)	
	409	Victimization (3)	
SW	322	Interventions I (3)	
		Other approved course (3)	
		TOTAL	21

Aging, Health & Sexuality Emphasis

SOC	401	Health, Culture and Society	3
	402	Aging, Culture and Society	3
	403	Human Sexuality and Social Behavior	3
	451	Culture/Deviance/Psycholpathology	3
		Electives to be chosen from among:	9
	206	Gender and Society (3)	
	250	Sacred in Culture (3)	
	252	Culture and Personality (3)	
	407	Family Violence (3)	
Any other course approved by a sociology adviser			
		TOTAL	21

General Emphasis

Based upon student interest, student will select at least 36 hours of classes, which may include six hours from anthropology. Courses must be approved by the adviser. At least 12 hours must be upper level.

Specific Requirements for the Sociology Minor

Minors in sociology require a minimum of 21 semester hours, of which six hours must be upper level. SOC 101 is required. The remaining courses must be selected in consultation with the minor adviser. No grades below C are accepted toward the minor.

Co-curricular Requirements

Generally there are no co-curricular requirements, although students with an emphasis in criminology are encouraged to do an internship in a community corrections type agency or program.

Outcome Assessment Activities

- Completion of all required courses.
- The department believes that grades are one valid indicator of the quality of student work. No grade below C will therefore, be accepted toward the major or minor.
- Student achievement will be assessed in the outcome areas on the basis of a portfolio. Selected majors will develop and present their portfolio for review in the senior year. The portfolio will consist of selected documents from their work in sociology, including: 1) papers, 2) exams, 3) journals, 4) research projects, presentations, etc., 5) complete transcript, 6) a statement of self evaluation and future plans, and 7) a professional-style resume.
- For the sociology minor, grades will provide a valid measure of student performance. The department will examine and maintain records of grades of students minoring in sociology as one means of assessment.
- A representative sample of student portfolios and other documentation will be maintained for a period of five years to assure the availability of a body of evidence that qualified external examiners might inspect.

Anthropology Program Goals

- Students will be able to deal with intellectual problems and engage in critical thinking in a lucid fashion, reflecting logical inquiry and knowledge of pertinent information.
- Students will possess knowledge and experience of cultural and subcultural groups other than their own.
- Students will achieve an understanding of a spectrum of anthropological sub-divisions and will be knowledgeable in at least two areas.

Specific Requirements for the Anthropology Minor

The minor consists of 21 semester hours of anthropology courses; ANTHR 103 is required, and six hours must be at the 300/400 level. The rest of the courses may be based upon the student's interest. No grades below C are accepted toward the minor.

Co-curricular Requirements

Students are encouraged, although not required, to engage in field-site or off-campus anthropology field experiences.

Outcome Assessment Activities

- The assessment of anthropology students' progress is a continuing process from matriculation to graduation. This progress will be documented in portfolios maintained for selected minor students.
- Portfolios of selected students in the program will be maintained during the course of their program.

Social Work Program Goals

The primary goal of the social work major is:

- To prepare students for entry-level professional social work practice.
- To prepare students for graduate-level social work education.
- To contribute to the liberal education of students from all parts of the university.
- To maintain accreditation of the social work major as defined by the Commission on Accreditation, Council on Social Work Education.

General Requirements

- Graduates are expected to possess and demonstrate the generalist skills and knowledge necessary in beginning social work professional practice with an understanding and appreciation of the cultural diversity of the Southwest.
- Graduates are required to complete an approved program of courses described below with a minimum cumulative overall GPA of 2.0 and a minimum GPA of 2.5 within the major.
- Graduates are expected to demonstrate the incorporation of social work values and ethics in their professional social work practice.
- Majors are required to complete 52 semester credit hours in social work courses (see specific courses listed below).
- Majors are required to spend at least 400 hours of supervised field experience (included in credit hours stated above).
- Majors are required to earn at least a cumulative 2.5 GPA in social work courses, and no lower than a C in each social work course.
- Majors are required to complete approximately 17 semester hours in courses with prefixes other than SW.

Specific Requirements

SW Courses		Title	Credits
SW	100	Introduction to Social Welfare	3
	201	Human Behavior & Social Environment I	3
	202	Human Behavior & Social Environment II	3
	205	Social Welfare in the United States	3
	210	Techniques of Analysis	3
	222	Social Work Practice	3
	320	Emergence & Counseling of Minorities	3
	322	Social Work Intervention I	3
	323	Social Work Intervention II	3
	324	Social Work Intervention III	3
	350	Social Welfare Policy & Program Evaluation	3
	420	Social Work Theory	3
	481	Field Seminar I	3
	482	Field Seminar II	3
	488	Field Placement I	5
	489	Field Placement II	5
		TOTAL	52

Other Requirements

CS	101	Chicano Studies	3
SOC	101	General Sociology	3
SOC	352	Social Psychology	3
PSY	101	General Psychology	3
A course covering Human Biology			2-3
A course covering Women's Studies			3
		TOTAL	17-18

Co-curricular requirements

Field placement: A minimum of 400 hours of field experience in a community agency under the supervision of an MSW social worker (SW 488, 489).

Outcomes Assessment Activities

- Field placement experience and evaluation, conducted in the senior year, is a major component of student assessment. The evaluation focuses upon the application and demonstration of knowledge and professional skills within the context of a community human service agency setting. Field evaluations are shared with students each semester of field placement and form the final assessment of competency for beginning professional social work practice.
- Periodically, survey information from graduates employers will be collected.
- Periodically assessment of student admissions into graduate programs will be conducted.

- A representative sample of student portfolios, field placement evaluations and other supporting documentation will be maintained for a period of five years to assure the availability of a body of evidence that qualified external examiners might inspect.

SPEECH COMMUNICATION AND THEATRE DEPARTMENT

CHAIR: Sherman
FACULTY: Benton, O'Leary, Podgurski

The major in speech communication leads to the degrees of bachelor of arts (BA) or bachelor of science (BS). Students completing an emphasis in communication disorders will receive the BS degree. Students completing the emphasis areas in general speech communication, speech communication education, and theatre will receive the BA degree.

Students in speech communication participate actively in extracurricular activities closely integrated with the academic curriculum. Open to all students, regardless of their majors, SPCOM 115 and 315 provide experience both in inter-collegiate competition and in community service. In the forensic program, students may participate in debate, dramatic reading, interpretation of literature, and other individual and group events. Theatre productions seek 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 and children's plays, providing experience in both technical theatre and production, and performance.

Departmental Goals

- To prepare students to teach speech communication in secondary schools.
- To prepare students for a career in communication disorders.
- To provide students with a liberal arts approach to speech communication.
- To provide students with a liberal arts approach to theatre.

Expected Student Outcomes

General Requirements

- All majors must complete a set of required courses (the core), and declare an emphasis area from the following list: general speech communication, theatre, speech communication education, communication disorders.
- No grade lower than C will count toward the major.
- All majors must successfully complete a minor.

- Successful majors will be capable of analyzing, synthesizing, interpreting, evaluating and communicating ideas in public.
- Successful majors will be able to engage in problem analysis, present a well reasoned solution to a problem, and know the tests for evidence and reasoning.
- The graduate in speech communication will possess an understanding of the principles underlying the discipline generally and the respective emphasis areas. Such understanding would include knowledge of specific aesthetic and ethical values as they apply to the speech act, factual knowledge about human speech, and the literary remains of man's significant speaking efforts.

Specific Requirements for the Speech Major

SPCOM 101, Expository Speaking, or its equivalent, is a prerequisite for all courses above the 100-level.

Speech Core Courses		Title	Credits
SPCOM	211	Public Speaking	3
	231	Oral Interpretation	3
	261	Voice and Diction	3
	493	Seminar	3
		TOTAL	12

General Speech Emphasis

SPCOM Electives in general speech or theatre 20
*(A minimum of eight semester hours must be upper-division)

Speech Communication Education Emphasis

SPCOM	100	Intro. to Speech Communication	1
	115	Speech Activity I	1
	212	Argumentation	2
	221	Interpersonal Communication	3
	241	Organizational Communication	3
	242	Interview & Conference Techniques	3
	250	Into. to Communication Disorders	2
	312	Persuasion	2-3
	315	Speech Activity II	1
	360	Lang. Acquisition and Linguistics	3
	376	Directing Speech Activities	2
	377	Speech Education Methods	2
MACOM	101	The Mass Media	3
		TOTAL	28-29

For teaching endorsement requirements, see the *Teacher Education Department* section of this catalog.

*The majority of the elective hours must be in general speech or theatre. A maximum of two credits of SPCOM 115 and one credit in SPCOM 315 may be included toward the major or minor.

Communication Disorders Emphasis

Courses		Title	Credits
SPCOM	250	Intro. to Communication DisorderR	2
SPCOM	324/324L	Anatomy of the Head, Neck & Chest	3
SPCOM	351	Articulation Disorders	2
SPCOM	352	Voice Disorders	2
SPCOM	353	Stuttering	2
SPCOM	360	Language Acquisition & Linguistics	3
SPCOM	361	Phonetics	2
SPCOM	365	Basic Audiology	3
SPCOM	451	Aural Rehabilitation	3
SPCOM	452	Diag. & Methods in Speech Pathology	2
SPCOM	462	Organic Disorders of Speech	3
SPCOM	463	Language Disorders in Children	2
SPCOM	469	Clinical Exper. in Comm. Disorders	1
SPCOM ELECTIVES			6
PSYCH	101	General Psychology I	3
PSYCH	251	Psych. of Infancy and Childhood	3
PSYCH	252	Pre-Adol. & Adol. Psychology	3
PSYCH	253	Psych. of Adulthood and Old Age	3
PSYCH	351	Psych. of the Exceptional Individual	3
PSYCH	362	Intro. to Psychopathology	3
BIOL	221/221L	Prin. of Human Anatomy & Phys./Lab	4
PHYS	361	Physics of Sound	3
		TOTAL	61

Theatre Emphasis

A minimum of 24 elective TH hours, including at least one hour of Company Class each semester. At least eight of the 24 hours (including SPCOM 493) must be numbered between 300 and 499. A maximum of eight Company Class hours may be counted toward the emphasis area; a maximum of 12 hours of Company Class may be credited toward graduation.

Specific Requirements for the Speech Communication Minor

The minor in speech communication consists of 20 semester hours of curriculum offerings, six of which must be upper division. A minor is designed to meet the specific needs of the student and must be planned with the assistance of an adviser and approved by the department chair.

Specific Requirements for the Theatre Minor

The minor in theatre consists of 20 semester hours of curriculum offerings six of which must be upper division. Required are TH 111 or TH 216, TH 131 and TH 135 plus four credits of Company Class which are usually taken one per semester for four semesters. No more than four hours of Company Class may be counted for the minor in theatre.

Co-curricular Requirements

The speech and theatre faculty believe that speech communication graduates must have co-curricular experiences that complement and reinforce the curricular experiences; therefore, graduates must document evidence

of successful participation in forensics, Company Class, student organizations, clubs, jobs, or other activities related to the program of study in speech and theatre.

Outcomes Assessment Activities

- All majors and transfer students will be pre-tested as follows:
  a) The speaking ability of all USC students declaring a speech communication major will be evaluated in one of the speech or theatre courses they are enrolled in at the time they declare major. The evaluation will be based upon a classroom presentation.
  b) The speaking ability of all transfer students declaring a major will be evaluated in the same way. Additionally, the final grade earned in an introductory speech or theatre course at the student's previous school will be considered.
- The speech communication/theatre faculty believe that grades are a valid record of students' progress. All majors and minors are therefore required to complete work in the major or minor at a grade level of C or better; no lower grades will count toward the major or minor.
- A central file of syllabi, assignments, and exams, revealing how these are adapted to program objectives, will be retained in the departmental office for inspection by qualified persons.
- Each student's major adviser will keep a record of the student's work in a folder. The record will include a list of completed course work, and a sample of the student's writing prepared for a freshman, sophomore, junior, and senior level course, preferably distributed over four academic years. Folders of all majors and minors will be retained for a minimum of two years, to enable qualified persons to assess student performance in meeting program goals.
- In SPCOM 493, Seminar, all majors will demonstrate their ability to complete a scholarly paper in correct English, and to present and defend its findings orally.

TEACHER EDUCATION DEPARTMENT

Chair: Gutierrez
Faculty: McCanne, Miller, Ortiz, Strader, Valerio

In cooperation with other academic departments, programs are offered leading to Colorado teacher certification in the following endorsement areas: elementary and bilingual elementary (grades K- 6); art, music and physical education (grades K-12); and the secondary subject areas of English, foreign language, industrial arts, mathematics, science, social science, and speech (grades 7-12).

Program Goals

- The goal of the teacher education program is to prepare students to teach competently and effectively in their chosen areas of endorsement and to obtain Colorado teacher certification.
- Completion of an endorsement program fulfills the requirements for a minor in education. The endorsement programs are approved by the Colorado Department of Education (CDE) and are accredited by the National Council for the Accreditation of Teacher Education (NCATE).

Expected Student Outcomes

- Students will demonstrate knowledge of subject matter; theories and principles of learning; and pupil characteristics, needs and interests.
- Students will demonstrate capabilities to plan and organize for teaching, to implement effective teaching strategies, and to evaluate the effectiveness of those strategies in terms of pupil progress.
- Students will demonstrate personal and professional behaviors and skills in interpersonal relations as appropriate for teaching professionals.

Requirements for the Education Minor

- Students must meet the admission and curricular requirements in effect at the time they enter the teacher education program. Because changes in policies at the state level may cause changes in the program, students should consult an education adviser and their major adviser each semester.
- Entry into the Teacher Education Program for any endorsement area requires experience with children or youth; a 3.0 grade point average (GPA) in SPCOM 101, ENG 110 and ENG 211; a grade of B in MATH 120 or C in a higher mathematics course or an ACT math score of 23; a 2.5 GPA for the last 30 hours of college course work; passing the required entry-level basic competency test; a health clearance; and a completed Application for Admission, signed by an education adviser, along with the required supporting materials. Details are described in a *Teacher Education Handbook*, available at the USC Bookstore.
- Students may not enroll in any course with the prefix ED (except ED 102 and ED 203) unless they have been fully admitted to the teacher education program.

Specific Requirements for the Elementary Teaching Endorsement

CDE requires the student to complete a major in "a subject major or broad field interdisciplinary major drawn from the following areas: liberal arts, science, mathematics humanities, social sciences or health" and to acquire background knowledge in the areas of language arts, humanities and fine arts, social sciences, science and health. Such background knowledge may be acquired through courses required for general education and

the degree major, additional course work, or by other means determined with an education adviser from alternatives approved by CDE.

In addition, the following supporting courses and professional sequence are required:

Courses		Title	Credits
PSYCH	101	General Psychology	3
PSYCH	151	(or PSYCH 252 & 252) Human Development	3 or 6
ED	202	Foundations of Education	3
ENG	251	or ENG 342 English Grammar or Syntax	3
ENG	351	Children's Literature	2
MATH	360	& 361 Elementary Concepts in Math	6
HP	322	Elementary School Physical Education	2
ART	377	Principles of Elementary Art Education	1
MUS	351	Principles of Music in Elementary	1
SPCOM	370	Creative Dramatics	1
RDG	301	Reading and Language Arts in Elementary School	3
RDG	450	Diagnosis & Remediation of Reading Problems	3
BBE	401	Teaching the Limited Proficiency Student	2
ED	412	Teaching the Special Child	3
ED	413	Teaching Social Studies	2
ED	414	Teaching Elementary Science and Health	2
ED	417	Teaching Mathematics in Elementary Schools	2
ED	435	Classroom Management	3
ED	460	Educational Media and Technology	3
ED	497	Student Teaching Elementary School	15
		TOTAL	63-66

Specific Requirements for the Bilingual Elementary Teaching Endorsement

The student must complete the spanish major (bilingual emphasis) offered by the Department of English/foreign languages. The requirements for general knowledge and requirements for supporting courses and the professional sequence are the same as those for the elementary endorsement with two exceptions: ED 413 and ED 414 are replaced by:

BBE	403	Teaching Elementary Subjects in Bilingual Education	3
BBE	460	Survey of Language/Cultural Tests in Bilingual Education	3

Specific Requirements for the Secondary and K-12 Teaching Endorsements

The student must complete of an appropriate major as approved by CDE. In addition, the following supporting courses and professional sequence are required:

PSYCH	101	General Psychology	3
PSYCH	151	(or PSYCH 252 & 252) Human Development	3-6
ED	202	Foundations of Education	3
IST	345	Career Education	2
RDG	425	Teaching Reading in Content Areas (For K-12 endorsements, RDG 301 is required in place of RDG 425)	2
ED	435	Classroom Management	3
ED	460	Educational Media and Technology	3
ED	461	Atypical Students in the Secondary (For endorsement in physical education, and HP 465, Adaptive Physical Education, are required in place of ED 461)	2
ED	488	Student Teaching Secondary	
or	489	Student Teaching K-12	15
		TOTAL	34-39

Outcomes Assessment

- Subject matter knowledge is assessed by successful completion of the required coursework. Knowledge of learning principles and theories, and understanding pupil characteristics, are assessed by successful completion of required coursework and the integration of such knowledge in specific plans for teaching and interactions with pupils during field assignments in schools.
- Teaching methods are assessed by successful completion of required courses and field assignments. During student teaching, both informal and structured observations are conducted by faculty and by cooperating teachers.
- Personal and professional qualities and skills in interpersonal relations are assessed primarily during field experiences in the schools and during student teaching using faculty observations and the observations and ratings of cooperating teachers. Students who fail to act in a responsible and ethical manner may be deselected from the teacher education program.
- All teacher education program standards must be maintained, including a GPA of 2.5 for the most recent 30 semester hours and a GPA of 2.5 in the major, for the student to file an Application for Student Teaching. The student then completes the program with one semester (15 weeks) of full-time student teaching under the supervision of an experienced teacher endorsed in the student's area of preparation. All performance expectations are assessed during student teaching.
- Records, including applications and all supporting materials, for all students applying for or accepted into the program are maintained in the education department office. Students' Applications for Admission and Applications for Student Teaching are reviewed by the faculty advisers, the Departmental Screening Committee and the university's Teacher Education Board twice a year. Decisions are made to accept, to accept

conditionally, or to reject each application. Students have the right to appeal final decisions using the university's due process procedures. Applications for Certification by the CDE are forwarded to CDE with the university's institutional recommendation only after official transcripts have been received and a final check is completed by the office of the education department.

Reading Program

The reading minor is intended for elementary, secondary, or K-12 teacher certification candidates who wish to have a recognized area of strength in the teaching of reading.

Expected Student Outcomes

As a result of successfully completing the reading minor, the student will:

- Recognize and be able to describe, diagnose, and teach all of the generally accepted concepts and skills in the areas of oral language, reading readiness, word recognition, word meanings, comprehension, interpretation, literary appreciation, reading for information, critical reading and thinking, reference skills, study skills, oral reading, listening, speaking, English language usage, syntax, grammar, punctuation, capitalization, creative and informative writing, spelling, penmanship, keyboarding and word processing.
- Be able to describe the role and importance of the child's self-concept, experience and culture, home language and dialect, stages of growth and development, and success and familiarity with great literature as factors in motivating growth in reading and the language arts.
- Be able to plan lessons and teach effectively with a variety of techniques, including whole class, individualized, skill group, and heterogeneous group instruction with cooperative learning; and including the use of basal readers and textbooks, trade and library books, language experience stories and computer-assisted instruction.
- Be able to diagnose student reading levels and specific strengths and weaknesses, organize instruction to provide for the needs of the class and individual special students, adapt instruction in content areas to promote content learning, and reading and writing growth for all students.
- Be able to recognize common causes of reading and writing difficulty; administer and interpret the scores of assessment instruments including individual reading inventories, cloze, reading miscue inventories, criterion-referenced tests and standardized tests; and assess writing samples for diagnosis and prescription in expression, organization, fluency, sentence and paragraph development, theme, spelling, penmanship and fluency in word processing.

- Explain the need to work together with parents, librarians, drama and other teachers to recognize and highlight the value and enjoyment of thinking for learning to think, reading for learning to read, listening for learning to listen, speaking for learning to speak, and writing for learning to write.
- Be able to enrich a program of reading instruction with appropriate adaptations such as centers, the use of newspapers as a resource, extensive use of child or adolescent literature, and adaptations designed to meet special needs of handicapped, culturally different, or gifted students.

Specific Requirements

Complete the reading core with a cumulative GPA of 3.0 or better and complete the reading electives with a cumulative GPA of 2.5 or better.

Courses		Title	Credits
RDG	301	Teaching Reading and Language Arts in the Elementary School	3
	310	Current Approaches to Reading and Writing Instruction	3
	425	Teaching Reading in Content Areas	2
	450	Diagnosis and Remediation of Reading Problems	3
ENG	351	Children's Literature	
or	412	Literature for Adolescents	2
		TOTAL	13

Other Requirements

RDG	360	Practicum	1-3
	431	Developing Creative Centers	1
	436	New Directions in Reading Comprehension	2
	437	Teaching with Newspapers as a Resource	1
	442	Reading Across Cultures	2
	491	Topics in Reading	1-2
ED	412	Teaching the Special Child	3
or	461	Atypical Students in the Secondary School	1
		Electives chosen in consultation with the Education adviser	8
		TOTAL	19-22

Outcomes Assessment Activities

Since reading minors are generally teacher certification candidates, they are subject to the assessment listed above. In addition:

- They must complete the reading minor core with a GPA 3.0 or better. Assessment of expected outcomes 1 through 6 are monitored by the reading director.

- To meet the last expected outcome, students may complete the 21 hour requirement with electives listed on the advisement sheet. The overall GPA must be 2.5 or higher.
- Records on student progress in the reading minor will be kept in the folders maintained for the teacher education program in the education department office.

THE COLLEGE OF SCIENCE AND MATHEMATICS

Dr. Jack A. Seilheimer, dean

Academic Departments	Major	Minors
Biology	Biology (BS)	Biology
Chemistry	Chemistry (BS)	Chemistry
Mathematics	Mathematics (BA,BS)	Mathematics
Nursing	Nursing (BSN)	
Physics/Physical Science	Physics (BS)	Physics/Geology
	Master of Science in Applied Natural Science	Master Degree Program

USC offers strong majors in science, mathematics and nursing with several options designed to accommodate the varied professional goals of students. Teacher certification is available in biology, chemistry, mathematics and physics as well as school nurse certification in nursing.

The college's five academic departments and master degree program are housed in three buildings of contemporary design which feature modern, air-conditioned classrooms and laboratories equipped with state-of-the-art instrumentation for instruction and research. Ninety-six percent of the science and mathematics regular faculty hold the doctoral degree.

In addition to offering curricula for students majoring and minoring in their disciplines, science and mathematics courses are offered which provide a foundation for many other degree programs or which provide students with learning opportunities to prepare themselves to live effectively in an increasingly complex, science-oriented society.

BIOLOGY DEPARTMENT

CHAIR: Linam
FACULTY: Browne, Dorsch, Farris, Herrmann, Janes, Murray, Osborn, Seilheimer, Sublette

The major in biology leads to a bachelor of science (BS) degree. 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 workplace or continue study in graduate school as a professional biologist, or may elect to follow any of the follow **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. 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. 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 a professional school. The student should contact the specialized adviser as early as possible. A list of advisers is available in the departmental office.

The university has a guaranteed transfer agreement with the College of Forestry and Natural Resources at Colorado State University (CSU) in pre-forestry and pre-wildlife management. A student who successfully completes the two-year program at USC with 2.50 grade-point average is guaranteed transfer to the baccalaureate program at CSU. Grades of D and F do not transfer.

Biology majors may also seek teacher certification at either the elementary or secondary level. Each student should obtain a written description of specific degree requirements from the appropriate adviser. Biology students who are considering attending graduate school should take one year of a foreign language and should plan to take the Graduate Record Examination during their senior year.

The life sciences department also offers several different specialization or emphasis areas. The areas are described below and the course requirements are detailed in the requirements section.

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). Satisfactory completion of the curriculum leads to a BS degree in biology.

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.

The emphasis in **medical technology,** available to students majoring in biology, stresses microbiology, immunology, parasitology and chemistry. In their senior year, students apply for admission to a hospital school of medical technology, and after receiving the degree from USC they spend a one-year internship in hospital clinical laboratory practice. They then sit for a certifying exam and are registered as a medical technologist.

Departmental Goals

- To prepare graduates to become productive, accountable and responsible employees upon entering the work force.
- To prepare graduates to enter graduate or professioinal schools.
- To develop in students a broad based theoretical foundation supplemented by laboratory and field exercises that allow individual observations, inferences and hands-on experience.
- To allow those students seeking a minor in biology to supplement and reinforce their major field of study.

Expected Student Outcomes

General Requirements

- Students graduating with a B.S. in biology must have at least a cumulative GPA of 2.0 in the major area. A cumulative GPA of 2.5 in the major area is required for admission to the teacher education program.
- Graduates are required to demonstrate intellectual skills and knowledge in math and supporting sciences.
- Graduates are required to complete an approved minor outside the life sciences department.
- Biology majors are expected to demonstrate a knowledge of basic laboratory tools used in biology for observation and analysis, phylogenetic relationships, relationships between form and function, and population/ecological dynamics.
- Biology graduates are expected to:
  a) be able to read critically, think about, and review historical and current literature in the biological sciences;
  b) be able to apply basic knowledge of the related fields of chemistry, mathematics, and physics to problem-solving in biology;
  c) to able to formulate logical hypotheses;
  d) be able to design and carry out well-designed, well-controlled tests on scientific hypotheses;
  e) have a knowledge of basic biology terminology;
  f) have a broad based background in molecular, cellular and organismic biology; and
  g) find information and present it in oral and written reports.

Specific Requirements for the Biology Major

BIOL Courses		Title	Credits
BIOL	171	Career Planning I	1
	191/191L	Aspects of Biology/Lab	4
	201/201L	Botany/Lab	5
	202/202L	Zoology/Lab	5
	301/301L	General Microbiology/Lab	5
	341/341L	Vertebrate Physiology/Lab	
or	412/412L	Cellular Biology/Lab	4
	471	Career Planning IV	1
	493	Senior Seminar	1
Approved Electives			18
		TOTAL	44

Other Required Courses

CST	101	Computers and You	3
CHEM	121/121L	General Chemistry I/Lab I	5
CHEM	122/122L	General Chemistry II/Lab II	5
CHEM	301/301L	Organic Chemistry I/Lab I	5
CHEM	302/302L	Organic Chemistry II/Lab II	5
PHYS	201/201L	Principles of Physics I/Lab I	4
PHYS	202/202L	Principles of Physics II/Lab II	4
MATH	121	College Algebra	4
MATH	221	Applied Calculus	5
		TOTAL	40

Institutional and General Education

Courses		Title	Credits
ENG	110	Composition I	3
ENG	211	Composition II	3
SPCOM	101	Expository Speaking	2
HUMANITIES			10
SOCIAL SCIENCES			10
FREE ELECTIVES			16
		TOTAL	46

Total Credit Hours: 130

Specific Requirements for the Biology/Teacher Certification Option

BIOL	132	Human Heredity & Birth Defects	2
	191/191L	Aspects of Biology/Lab	4
	201/201L	Botany/Lab	5
	202/202L	Zoology/Lab	5
	206/206L	Introduction to Microbiology/Lab.	4
	221/221L	Principles Human Anatomy & Physiology/Lab	4
	353/353L	Ecology/Lab	5
	377	Methods & Materials of Teaching Biology	2
	493	Seminar	1
		TOTAL	32

Other Required Courses

CHEM	112/112L	Introduction to Organic & Biochem./Lab.	4
CHEM	121/121L	General Chemistry I/Lab I	5
CHEM	122/122L	General Chemistry II/Lab II	5
GEOL	101/101L	Earth Science/Lab	4
PHYS	110	Astronomy	3
PHYS	201/201L	Principles of Physics I/Lab I	4
PHYS	202/202L	Principles of Physics II/Lab II	4
CST	101	Computers and You	3
MATH	121	College Algebra	4
MATH	221	Applied Calculus	5
PSYCH	101	General Psychology	3
PSYCH	151	Human Development	
or			
ED	210	Human Growth and Development	3
ED	202	Foundations of Education	3
ED	435	Classroom Management	3
ED	460	Educational Media & Technology	3
ED	461	Atypical Students in the Secondary School	3
ED	488	Student Teaching	15
IST	345	Career Education	2
RDG	425	Teaching Reading in Content Areas	2
		TOTAL	78

Institutional and General Education

ENG	110	Composition I	3
ENG	211	Composition II	3
SPCOM	101	Expository Speaking	2
HUMANITIES			10
SOCIAL SCIENCES			4
		TOTAL	22

Total Credit Hours: 132

Specific Requirements for the Biology/Elementary Certification Option

BIOL	112	Nutrition	3
	121	Environmental Conservation	4
	132	Heredity & Birth Defects	2
	162	Personal Health	3
	191/191L	Aspects of Biology/Lab	4
	201/201L	Botany/Lab	5
	202/202L	Zoology/Lab	5
	206/206L	Introduction to Microbiology/Lab.	4
		TOTAL	30

Other Required Courses

GEOL	101/101L	Earth Science/Lab	4
PHYS	110	Astronomy	3
PHYS	201/201L	Principles of Physics I/Lab I	4
CHEM	111/111L	Principles of Chemistry/Lab	4
CHEM	112/112L	Intro. to Organic & Biochemistry/Lab	4
MATH	360	Elementary Concepts Math I	3
MATH	361	Elementary Concepts Math II	3
CST	101	Computers and You	3
PSYCH	101	General Psychology I	3
PSYCH	151	Intro. to Human Development	3
ENG	251	Traditional Grammar Theory	
or			
ENG	342	English Syntax and Usage	2
ENG	351	Children's Literature	2
ED	202	Foundation of Education	3
ED	412	Teaching the Special Child	3
ED	413	Teaching Social Studies	2
ED	414	Teaching Elementary Science & Health	2
*ED	417	Teaching Math. in Elementary School	2
ED	435	Classroom Management	3
ED	460	Educational Media and Technology	3
ED	487	Student Teaching Elementary	15
HP	232	Advanced First Aid	2
HP	322	Elementary School Physical Education	2
ART	377	Prin. of Elementary Art Education	1
MUS	351	Prin. of Music in the Elementary Schl.	1
RDG	301	Rdg. & Lang. Arts in the Elem. School	3
RDG	450	Diag. & Remediation of Reading Problems	3
BBE	401	Teaching the Limited Eng. Prof. Student	2
		TOTAL	85

Institutional and General Education

ENG	110	Composition I	3
ENG	211	Composition II	3
SPCOM	101	Expository Speaking	2

HUMANITIES (as approved by the education department)			10
SOCIAL SCIENCES (as approved by the education dept)			13
		TOTAL	31

Total Credit Hours 147

Specific Requirements for the Biology/Chemistry Double Major

BIOL	171	Career Planning I	1
	191/191L	Aspects of Biology/Lab	4
	201/201L	Botany/Lab	5
	202/202L	Zoology/Lab	5
	301/301L	General Microbiology/Lab	5
	341/341L	Vertebrate Physiology/Lab	
or	412/412L	Cellular Biology/Lab	4
	471	Career Planning IV	1
	493	Senior Seminar	1
Approved Electives			18
		TOTAL	44

Chem Courses

CHEM	121/121L	General Chemistry I/Lab I	5
	122/122L	General Chemistry II/Lab II	5
	301/301L	Organic Chemistry I/Lab I	5
	302/302L	Organic Chemistry II/Lab II	5
	317/317L	Quantitative Analysis I/Lab I	5
	321	Physical Chemistry I	3
	322	Physical Chemistry II	3
	419/419L	Instrumental Analysis/Lab	5
Approved Electives			3
		TOTAL	39

Other Required Courses

MATH	121	College Algebra	4
MATH	122	College Trigonometry	2
MATH	126	Calculus and Analytical Geometry I	5
PHYS	201/201L	Principles of Physics I/Lab I	4
PHYS	202/202L	Principles of Physics II/Lab II	4
CST	101	Computers and You	3
		TOTAL	22

Institutional and General Education

ENG	110	Composition I	3
ENG	211	Composition II	3
SPCOM	101	Expository Speaking	2
HUMANITIES			10
SOCIAL SCIENCES			10
		TOTAL	28

Total Credit Hours 133

Specific Requirements for the Biology/Medical Technology Option

BIOL	171	Career Planning I	1
	191/191L	Aspects of Biology/Lab	4
	201/201L	Botany/Lab	5
	202/202L	Zoology/Lab	5
	301/301L	General Microbiology/Lab	5
	302/302L	Medical Microbiology & Immunology/Lab	5
	341/341L	Vertebrate Physiology/Lab	4
	351/351L	Genetics/Lab	4
	412/412L	Cellular Biology/Lab	4
	471	Career Planning IV	1
	472/472L	Radiation Biology/Lab	4
	482/482L	Parasitology/Lab	3
	493	Seminar	1
Approved Electives			12
		TOTAL	58

Other Required Courses

CHEM	121/121L	General Chemistry I/Lab I	5
CHEM	122/122L	General Chemistry II/Lab II	5
CHEM	301/301L	Organic Chemistry I/Lab I	5
CHEM	302/302L	Organic Chemistry II/Lab II	5
CHEM	317/317L	Quantitative Analysis I/Lab I	4
CHEM	411	Biochemistry I	3
CST	101	Computers and You	3
MATH	124	Precalculus Math	5
PHYS	201/201L	Principles of Physics I/Lab I	4
PHYS	202/202L	Principles of Physics II/Lab II	4
		TOTAL	43

Institutional and General Education

Courses		Title	Credit
ENG	110	Composition I	3
ENG	211	Composition II	3
SPCOM	101	Expository Speaking	2
HUMANITIES			10
SOCIAL SCIENCES			10
		TOTAL	28

Total Credit Hours 129

Specific Requirements for the Biology/Environmental Health Option

BIOL	171	Career Planning I	1
	191/191L	Aspects of Biology/Lab	4
	201/201L	Botany/Lab	5
	202/202L	Zoology/Lab	5
	221/221L	Prin. of Human Anatomy & Physiology/Lab	4
	301/301L	General Microbiology/Lab	5
	353/353L	Ecology/Lab	5
	443/443L	Limnology/Lab	4
or	479/479L	Ichthyology/Lab	3
	471	Career Planning IV	1
	472/472L	Radiation Biology/Lab	4
	481/481L	Entomology/Lab	3
	482/482L	Parasitology/Lab	3
	493	Seminar	1
	498	Internship	15
Upper Division Electives			7
		TOTAL	66-67

Other Required Courses

CHEM	112/112L	Introduction to Organic & Biochem./Lab.	4
CHEM	121/121L	General Chemistry I/Lab I	5
CHEM	122/122L	General Chemistry II/Lab II	5
CST	101	Computers and You	3
MATH	156	Introduction to Statistics	3
MATH	221	Applied Calculus: An Intuitive Approach	
or			
MATH	126	Calculus and Analytic Geometry I	5
PHYS	201/201L	Principles of Physics I/Lab I	4
		TOTAL	29

Institutional and General Education

ENG	110	Composition I	3
ENG	211	Composition II	3
SPCOM	101	Expository Speaking	2
HUMANITIES			10
SOCIAL SCIENCES			10
FREE ELECTIVES			6
		TOTAL	34

Total Credit Hours: 129-130

Specific Requirements for the Biology/Biotechnology Option

BIOL	171	Career Planning I	1
	191/191L	Aspects of Biology/Lab	4
	201/201L	Botany/Lab	5
	202/202L	Zoology/Lab	5
	280	Introduction to Biotechnology	3
	301/301L	General Microbiology/Lab	5
	302/302L	Med. Microbiology & Immunology/Lab	5
	351/351L	Genetics/Lab	4
	412/412L	Cellular Biology/Lab	4
	450	Recombinant DNA Technology	3
	471	Career Planning IV	1
	472/472L	Radiation Biology/Lab	4
	493	Seminar	1
	495	Independent Study	1-2
Approved Electives			8
		TOTAL	54-55

Other Required Courses

CHEM	121/121L	General Chemistry I/Lab I	5
CHEM	122/122L	General Chemistry II/Lab II	5
CHEM	301/301L	Organic Chemistry I/Lab I	5
CHEM	302/302L	Organic Chemistry II/Lab II	5
CHEM	317/317L	Quantitative Analysis I/Lab I	5
CHEM	411	Biochemistry I	3
CHEM	412/412L	Biochemistry II/Lab II	4
MATH	124	Precalculus Math	5
MATH	126	Calculus and Analytic Geometry I	5
PHYS	201/201L	Principles of Physics I/Lab I	4
PHYS	202/202L	Principles of Physics II/Lab II	4
CST	101	Computers and You	3
		TOTAL	53

Institutional and General Education

Courses		Title	Credits
ENG	110	Composition I	3
ENG	211	Composition II	3
SPCOM	101	Expository Speaking	2
HUMANITIES			10
SOCIAL SCIENCES			10
		TOTAL	28

Total Credit Hours: 135-136

Specific Requirements for the Professional Biology Minor

BIOL	191/191L	Aspects of Biology/Lab	4
	201/201L	Botany/Lab	5
	202/202L	Zoology/Lab	5
Approved Upper Division Electives			9
		TOTAL	23

Specific Requirements for the General Biology Minor

Approved Electives	15
Approved Upper Division Electives	8
TOTAL	23

Co-curricular Requirements

There are many opportunities to participate in experiences that will complement and reinforce a student's academic experience. These may be either on- or off-campus activities and may be used to develop leadership and interpersonal skills. The faculty of the life sciences department actively encourages student participation in such activities.

Outcomes Assessment Activities

A) Biology Majors

Assessment of graduates' improvement in intellectual skills, knowledge and capacities between entrance and graduation will be accomplished by using portfolios. A portfolio will be developed for each student majoring in biology. The responsibility for the portfolio will be shared by the student and his/her adviser.

Examples of material that may be included in a portfolio are:

- ACT scores, high school transcripts and college transcripts.
- Samples of homework, quizzes, examinations, research reports and lists of developed skills.
- Examples of writing, both from the required English courses as well as reports required by courses in life sciences.
- Certificates, awards, honors and evidences of co-curricular activities.
- Scores from appropriate examinations such as: GRE, MCAT, DAT, ETS, College Base.

B) Biology Minors

- The faculty of the life sciences department believe that the course grade would be a measure of the student's grasp of the basics of the course material.
- A written report will be required in an upper-division class.

CHEMISTRY DEPARTMENT
CHAIR: Mahan
FACULTY: Connelly, Druelinger, Hammer, Proctor, Saul, Wilkes

The major in chemistry leads to a bachelor of science (BS) degree and the chemistry curriculum is approved by the American Chemical Society.

In addition to curricula for students who wish to pursue chemistry as a profession, programs can be designed in pre-professional programs such as pre-medicine, pre-dentistry, pre-veterinary medicine and pre-law.

While a core curriculum for the major exists, many options are open to students to combine other interests with a major in chemistry. For example, 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. 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 coordinate their programs with the appropriate pre-professional adviser, as well as the chemistry adviser, to make sure specific course requirements are completed.

Chemistry is a foundation science for many professions and graduates with degrees in chemistry find employment in such diverse areas as health sciences, agricultural and environmental fields, transportation industries, the semi-conductor industry, teaching and research. Consequently, the chemistry department provides students with a number of diverse program options to assure each student a sound education in the fundamental areas of modern chemistry as well as valuable educational versatility.

The chemistry department strives to provide intellectual and professional training for students in the field of chemistry and in support of the American Chemical Society charter, to ". . . encourage in the broadest and most liberal manner the advancement of chemistry in all its branches; the promotion of research in chemical science and industry; the improvement of the qualifications and usefulness of chemists through high standards of . . . education . . . to promote scientific interests and inquiry . . ."

Program Goals

- To prepare graduates in the discipline of chemistry to become productive members of the profession whether they go to industry or to post-graduate education.
- To prepare graduates in the verbal, written and quantitative skills that are prerequisite to advanced study or careers in chemistry.
- To prepare graduates both in the theoretical principles of chemistry as well as in the laboratory approach to problem solving.

- To maintain approval of the chemistry curriculum as defined by the American Chemical Society, Committee on Professional Training.
- To provide the opportunity for a variety of educational programs through the following options:
  a) Basic Chemistry
  b) ACS Certified Curriculum
  c) Biochemistry
  d) Double Major
  e) Engineering/Chemistry
  f) Chemistry/Teacher Certification

Expected Student Outcomes

General Requirements

- Students majoring or minoring in chemistry are required to have a cumulative GPA of 2.0 or better in their chemistry courses.
- Proficiency in physics, math and computer science is essential for understanding and application of chemical principles; therefore, graduates must complete approved math, physics and computer science courses such that the overall GPA in those areas is 2.0 or better.
- The ability to think across disciplines contributes significantly to the educational experience as well as the application of chemistry as a profession; therefore, graduates must successfully complete an approved minor or area of concentration such that the overall GPA in those areas is 2.0 or better.
- Critical thinking, logical inquiry and problem analysis are very important in the education of new chemists; therefore, chemistry courses for majors will require students to demonstrate these capacities as relevant to the subject.
- Library and quantitative skills are prerequisite to advanced study or careers in chemistry; therefore, chemistry courses for majors require students to demonstrate the ability to read and understand concepts, theories and problems as well as communicate applications of and solutions to concepts, theories and problems.
- A fundamental knowledge of chemical theories, concepts and skills is necessary for advanced study or career placement in the profession; therefore, chemistry courses for majors will require students to demonstrate knowledge of fundamental theories, concepts and skills on a continuing as well as a comprehensive basis.

- 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. Transfer students wishing to minor in chemistry must earn a minimum of 10 of the 20 semester credit-hour requirement at USC.

Specific Requirements

The following common core is required for all of the chemistry options for the bachelor of science degree:

CHEM Courses		Title	Credits
CHEM	121/121L	General Chemistry I/Lab I	5
	122/122L	General Chemistry II/Lab II	5
	301/301L	Organic Chemistry I/Lab I	5
	302/302L	Organic Chemistry II/Lab II	5
	317/317L	Quantitative Analysis/Lab	5
	321	Physical Chemistry I	3
	322	Physical Chemistry II	3
	419/419L	Instrumental Analysis/Lab	5
		TOTAL	36

All options for the chemistry major also require completion of the following institutional and general education requirements:

Institutional and General Education

ENG	110	Composition I	3
ENG	211	Composition II	3
SPCOM	101	Introduction to Speech Communication	2
HUMANITIES			10
SOCIAL SCIENCES			10
		TOTAL	28

Requirements for the specific options;

Basic Chemistry Option

CHEM Courses		Title	Credit
		Required Chemistry Core	36
CHEM	323	Experimental Physical Chemistry	2
	421	Advanced Inorganic Chemistry	3
or	221/221L	Inorganic Chemistry/Lab	3
	493	Seminar I	1
		TOTAL	43

Other Required Courses

MATH	126	Calculus and Analytic Geometry I	5
MATH	224	Calculus and Analytical Geometry II	5
PHYS	221/221L	General Physics I/Lab I	5
PHYS	222/222L	General Physics II/Lab II	5
CST	102	Programming with BASIC	3
or	105	FORTRAN	3
		TOTAL	23

Institutional and General Education	28
APPROVED MINOR	20
FREE ELECTIVES	18
TOTAL	66

Total Credit Hours: 128

Specific Requirements for the ACS Certified Option

CHEM Courses		Title	Credits
		Required Chemistry Core	36
CHEM	221/221L	Inorganic Chemistry	3
	323	Experimental Physical Chemistry	2
	421	Advanced Inorganic Chemistry	3
	493	Seminar	1
Approved Electives			6
		TOTAL	51

Other Required Courses

MATH	126	Calculus and Analytic Geometry I	5
MATH	224	Calculus and Analytical Geometry II	5
PHYS	221/221L	General Physics I/Lab I	5
PHYS	222/222L	General Physics II/Lab II	5
CST	102	Programming with BASIC	
or	105	FORTRAN	3
		TOTAL	23

Institutional and General Education	28
FREE ELECTIVES	6
APPROVED MINOR	20
TOTAL	54

Total Credit Hours: 128

Specific Requirements for the Biochemistry Option

CHEM Courses		Title	Credits
		Required Chemistry Core	36
CHEM	411	Biochemistry I	3
	412/412L	Biochemistry II/Lab II	4
		TOTAL	43

Other Required Courses

MATH	126	Calculus and Analytic Geometry I	5
MATH	224	Calculus and Analytic Geometry II	5
PHYS	221/221L	General Physics I/Lab I	5
PHYS	222/222L	General Physics II/Lab II	5
CST	102	Programming with BASIC	
or	105	FORTRAN	3
		TOTAL	23

Institutional and General Education	28
Biology Minor	23
Approved Electives	11
TOTAL	64

Total Credit Hours: 128

Specific Requirements for the Double Major Option

Required Chemistry Core	36
Approved Electives	3
TOTAL	39

Other Required Courses

MATH	126	Calculus and Analytic Geometry I	5
PHYS	201/201L	Principles of Physics I/Lab I	4
or			
PHYS	221/221L	General Physics I/Lab I	5
PHYS	202/202L	Principles of Physics II/Lab II	4
or			
PHYS	222/222L	General Physics II/Lab II	5
		TOTAL	13-15

Institutional and General Education	28
Free Electives	10
Approved Second Major	Minimum 38
TOTAL	76

Total Credit Hours: 128-130

Specific Requirements for the Engineering/Chemistry Option

Required Chemistry Core . . . . . TOTAL 36

Other Required Courses

MATH	126	Calculus and Analytic Geometry I	5
MATH	224	Calculus and Analytic Geometry II	5
PHYS	221/221L	General Physics I/Lab I	5
PHYS	222/222L	General Physics II/Lab II	5
CST	105	FORTRAN	3
EN	103	Introduction to Engineering	2

EN	107	Engineering Graphics	2
EN	211	Engineering Mechanics I	3
EN	211	Engineering Mechanics II	3
EN	231/231L	Circuit Analysis I/Lab I	5
EN	301	Fluid Mechanics	4
EN	312/312L	Materials Science I/Lab I	3
EN	321	Thermodynamics I	3
EN	322	Thermodynamics II	3
EN	324/324L	Mechanics of Materials I/Lab I	4
		TOTAL	55

Institutional and General Education 28

Free Electives 9

TOTAL 37

Total Credit Hours: 128

Specific Requirements for the Chemistry/Teacher Certification Option

CHEM Courses		Title	Credits
Required Chemistry Core			36
CHEM	221/221L	Inorganic Chemistry	3
CHEM	377	Materials & Techniques	2
		TOTAL	41

Other Required Courses

BIOL	121	Environmental Conservation	4
BIOL	161	Personal Health	3
BIOL	191/191L	Aspects of Biology I/Lab I	4
GEOL	101/101L	Earth Science I/Lab I	4
PHYS	110	Astronomy	3
PHYS	201/201L	Principles of Physics I/Lab I	4
or			
PHYS	221/221L	General Physics I/Lab I	5
PHYS	202/202L	Principles of Physics II/Lab II	4
or			
PHYS	222/222L	General Physics II/Lab II	5
CST	101	Computers and You	3
MATH	221	Applied Calculus	5
or			
MATH	126	Calculus and Analytic Geometry I	5
PSYCH	101	General Psychology	3
PSYCH	151	Human Development	3
or			
ED	210	Human Growth & Development	3
PSYCH	351	Psychology of the Exceptional Individual	3
ED	202	Foundations of Education	3
ED	435	Classroom Management	3
ED	460	Educational Media & Technology	3
ED	461	Atypical Students in the Secondary School	2

ED	488	Student Teaching Secondary	15
IST	345	Career Education	2
RDG	425	Teaching Reading in Content Areas	2
		TOTAL	73-75

Institutional and General Education

*6 credits	Social Science satisfied under other courses above	18*
Social Science		4
	TOTAL	22

Total Credit Hours: 131-135

Specific Requirements for the Chemistry Minor

CHEM Courses		Title	Credits
CHEM	121/121L	General Chemistry I/Lab I	5
CHEM	122/122L	General Chemistry II/Lab II	5
Upper Division Electives			10
		TOTAL	20

Co-curricular Requirements

Students should experience co-curricular activities which enhance, broaden and reinforce their academic experience; therefore, the faculty support and encourage students to participate in science-related, as well as in general activities such as:

a. science or chemistry clubs
b. student government
c. scientific meetings, seminars, symposia, field trips/tours, etc.

Outcomes Assessment Activities

- Assessment of chemistry majors will occur through records kept for each student in individual files. These files shall contain:

  a) ACT scores, high school transcripts and college transcripts;

  b) Standardized exam scores (chemistry students demonstrate their knowledge and skills on national ACS standardized exams at the end of the freshman year, at the end of the sophomore organic year, and at the end of inorganic chemistry and physical chemistry); and

  c) Samples of papers written and/or presented, seminars given and summaries of any research projects.

- Advisers maintain complete files on each student. At the end of the sophomore year and during the year of graduation, a committee composed of chemistry department members will evaluate each file for advisement and reference purposes. Upon graduation, the contents of the file will revert to the student; however, the file will be maintained for a period of five years in order to track the careers of graduates.

MATHEMATICS DEPARTMENT

CHAIR: Withnell
FACULTY: Allen, Bronn, Burgos, Calvetti, Derr, Gill, Johnson, Louisell, Nichols, Orr, Phillips, Soto

The mathematics major leads to the degrees of bachelor of arts (BA) or bachelor of science (BS). Each degree includes options in pure and applied mathematics. Certification is also available for those who wish to teach secondary school mathematics. Individually designed mathematics minors and teaching minors for secondary school mathematics also are available.

The department of mathematics:

- provides tutorial services to all students through the Mathematics Learning Center in PM 112;
- grants advanced placement standing to qualified incoming students; and
- offers an endorsement program in mathematics for those previously certified in secondary education.

Mathematics majors, through choice of electives, may choose an emphasis in pure mathematics, applied mathematics, statistics or secondary school mathematics teacher preparation. Students interested in a mathematics major or minor should declare their intention. An assigned mathematics adviser will assist them in planning and fulfilling university and program degree requirements.

Departmental Goals

- To prepare graduates in mathematics to become productive, accountable, and responsible employees upon entering the workforce.
- To provide a quality major that will prepare students for future graduate study.
- To maintain the Colorado Department of Education and the National Council for the Accreditation of Teacher Education accreditation of our mathematics education program.

Expected Student Outcomes

General Requirements

- All majors and minors are required to complete an approved program of courses described below with a grade of C or better in each course.
- All courses in the core curriculum numbered above MATH 325 must be completed at USC.
- Graduates are required to complete an approved two-semester sequence in a laboratory science.

- Graduates are required to demonstrate the ability to program in at least one computer language.
- All mathematics majors and minors shall demonstrate the ability to solve problems, engage in logical inquiry, and to reason critically.

Specific Requirements for the Mathematics Major

MATH Courses		Title	Credits
MATH	126	Calculus and Analytic Geometry I	5
	207	Matrix & Vector Algebras with Appl.	2
	224	Calculus and Analytic Geometry II	5
	307	Introduction to Linear Algebra	3
	320	Introduction to Mathematical Thought	3
	325	Intermediate Calculus	3
	327	Introduction to Algebraic Systems	3
	421	Advanced Calculus I	3
	350	Probability	3
or	456	Applied Statistics I	3
Upper Division Electives (Excluding MATH 360 & 361)			9
		TOTAL	39

Other Requirements

LABORATORY SCIENCE SEQUENCE	8
COMPUTER PROGRAMMING	3
TOTAL	11

Institutional and General Education

Courses		Title	Credits
ENG	110	Composition I	3
ENG	211	Composition II	3
SPCOM	101	Expository Speaking	2
HUMANITIES			10
SOCIAL SCIENCES			10
NATURAL SCIENCES			2
FREE ELECTIVES			28
MINOR			20
		TOTAL	78

Total Credit Hours: 128

Specific Requirements for the Mathematics/Secondary Education Endorsement

MATH	126	Calculus and Analytic Geometry I	5
	207	Matrix & Vector Algebras with Appl.	2
	224	Calculus and Analytic Geometry II	5
	307	Introduction to Linear Algebra	3
	320	Introduction to Mathematical Thought	3
	325	Intermediate Calculus	3
	327	Introduction to Algebraic Systems	3
	330	Introduction to Higher Geometry	4
	350	Probability	3
or	456	Applied Statistics I	3
	377	Matls & Tech. of Teaching Sec. School Math	4
	421	Advanced Calculus I	3
	463	History of Mathematics	2
		TOTAL	43

Other Requirements

PSYCH	101	General Psychology I	3
PSYCH	151	Introduction to Human Development	3
or			
ED	210	Human Growth & Dev. for Educators	3
ED	202	Foundation of Education	3
ED	435	Classroom Management	3
ED	460	Educational Media & Technology	3
ED	461	Atypical Students in the Secondary School	3
ED	488	Student Teaching Secondary	15
IST	345	Career Education	2
RDG	425	Teaching Reading in Content Areas	2
		TOTAL	37

Institutional and General Education

Course		Title	Credits
ENG	110	Composition I	3
ENG	211	Composition II	3
SPCOM	101	Expository Speaking	2
HUMANITIES			10
SOCIAL SCIENCES			4
NATURAL SCIENCES			10
FREE ELECTIVES			16
		TOTAL	48

Total Credit Hours: 128

Specific Requirements for the Minor in Mathematics

MATH	126	Calculus and Analytic Geometry I	5
MATH	224	Calculus and Analytic Geometry II	5
Three Upper Division Electives *(Excluding MATH 360, 361 & 377)			10
		TOTAL	20

*Two of these must be taken at USC.

Specific Requirements for the Minor in Mathematics Teaching

MATH	126	Calculus and Analytic Geometry I	5
	224	Calculus and Analytic Geometry II	5
	320	Introduction to Mathematical Thought	3
	327	Introduction to Algebraic Systems	3
	330	Introduction to Higher Geometry	4
	377	Matl. & Tech. of Teaching Sec. School Math	4
		TOTAL	24

Specific Requirements for the Mathematics Endorsement Program

This program is offered to individuals already certified by the State of Colorado. The courses below are required in addition to the courses listed in the mathematics teaching minor above.

MATH	156	Introduction to Statistics	3
	207	Matrix and Vector Algebra	2
	307	Introduction to Linear Algebra	3
	463	History of Mathematics	2
Approved Computing Course			3
		TOTAL	13

Students should be aware that many courses within each program have prerequisites; thus, certain courses need to be taken in a definite sequence.

Co-curricular Requirements

The mathematics department faculty encourages students to participate in experiences which complement and reinforce their academic experiences and the faculty supports participation in mathematics-related activities such as tutoring, the Putnam Examination and membership in the Math Club.

Outcomes Assessment Activities

Mathematics majors must complete the following assessment activities as a requirement for graduation:

- Each student is required to demonstrate mathematical knowledge by completing a research project on an approved topic which will culminate in a paper, not to exceed 2500 words, using a word processor.
- Each student is required to take the Mathematics Major Field Achievement Test.

NURSING DEPARTMENT

CHAIR: King
FACULTY: Atteberry, Beruman, Gilbert, Mettler, Mutzebaugh, Sabo, Spry, Wahl

The major in nursing leads to a bachelor of science in nursing (BSN) degree and prepares the graduate to write the NCLEX 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 (NLN).

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 two nursing courses are 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. Failure to maintain required grades will result in the student being ineligible to continue in the nursing program. Students who are not in continuous enrollment in nursing courses must reapply for admission. Nursing courses must be repeated within one academic year from the date of unsatisfactory grades.

Admission to the university does not imply acceptance to the nursing major. Applications to the nursing program may be obtained in the Office of Admissions. Academic advisement for majors *must* be provided by a nursing faculty member. Requests for advanced placement through transfer or equivalent credit must be submitted in writing to the nursing department. Guidelines and application for obtaining credit through proficiency examination are available from the nursing department and must be submitted prior to date of enrollment.

Department Goals

- To prepare graduates to become eligible to sit for the Colorado State Board of Nursing Examination in order to receive an RN license to practice nursing.
- To prepare graduates to function effectively as beginning-level generalist in all areas of nursing practice at the level consistent with criteria determined by the National League for Nursing for baccalaureate programs.
- To prepare associate degree and diploma RNs for baccalaureate nursing practice consistent with National League for Nursing criteria.

- To prepare baccalaureate nurses in the region for selective graduate coursework.
- To collaborate with various local health care delivery systems to provide experiences that enable the student to practice nursing safely, within the American Nursing Association Code of Ethics and the Colorado Nurse Practice Act.

Expected Student Outcomes

General Requirements

- Meet admission criteria, including pre-nursing support courses and institutional requirements with a cumulative GPA of 2.5 or better.
- Complete an approved program of courses with a grade of C or better in the major and with a cumulative GPA of 2.0 or better.
- Every nursing student is expected to:

  a) Utilize APA format for documentation purposes.

  b) Apply concepts of research to their discipline at a consumer level.

  c) Participate in at least one meeting of a professional nursing organization.

  d) Conduct at least one 30-45 minute teaching presentation in a format that includes appropriate use of goals, objectives, and relevant evaluative methods.

  e) Perform certain psychomotor skills including but not limited to:

  - administer medications, including calculating dosages and solutions;
  - insert and maintain intravenous line; utilize technical equipment required for health care settings; and
  - conduct a physical assessment of a well person.

  f) Demonstrate critical thinking and decision making using a particular problem-solving method entitled Nursing Process.

Specific Requirements for the Nursing Major

NSG Courses		Title	Credits
NSG	202*	Introduction to Health Careers	3
	301	Core Concepts in Nursing I	3
	302/302L•	Health Assessment: Life Cycle/Lab	4
	304/304L*	Core Interventions in Nursing I/Lab	6
	306	Introduction to Levels of Prevention	3
	307•	Health and Disease Systems	3
	351	Core Concepts in Nursing II	3

352/352L•	Primary & Secondary Prevention in the Childbearing Family/L	6
354/354L**	Core Interventions in Nursing II/Lab	3
362/362L**	Nsg. Process in Secondary Prevention/Lab	5
372**	Clinical Practicum I	4
401	Core Concepts in Nursing III	2
404/404L	Core Interventions in Nursing III/Lab	3
408/408L	Nsg & Psychological Wellness/Lab	5
410/410L	Nursing Process in Primary, Secondary and Tertiary Prevention/Lab	6
451	Core Concepts in Nursing IV	3
452/452L	Nsg Process in Primary, Secondary and Tertiary Prevention/Lab	6
454/454L	Promotion of Health in Individuals, Families and Groups/Lab	4
	TOTAL	72

* ** Not required of students who have met requirements through practice (RNs, LPNs *,RNs only **) • - Proficiency Test Available (PROEX).

Other Required Courses

PSYCH	101	General Psychology I	3
SOC	101	General Sociology I	3
ANTHR	103	Intro to Socio-Cultural Anthropology	3
MATH	156	Introduction to Statistics	
or			
PSYCH	201	Data Analysis	3
BIOL	223/223L	Human Physiology & Anatomy I/Lab	4
BIOL	224/224L	Human Physiology & Anatomy II/Lab	4
CHEM	111/111L	Principles of Chemistry/Lab	4
CHEM	112/112L	Intro to Organic & Biochemistry/Lab	4
BIOL	206/206L	Introduction to Microbiology	4
NATURAL SCIENCE ELECTIVES			4
UPPER DIVISION NATURAL SCIENCE ELECTIVE			3
		TOTAL	39

Institutional and General Education

ENG	110	Composition I	3
ENG	211	Composition II	3
SPCOM	101	Expository Speaking	2
HUMANITIES			10
SOCIAL SCIENCES			1
		TOTAL	19

Total Credit Hours: 130

Co-curricular Requirements

- Students enrolled in the nursing program are expected to conduct themselves in a manner that reflects the values of the profession. The guidelines for professional behavior are derived from two major sources: 1) the Colorado State Board of Nursing, the eventual grantor of the nursing license, whose criteria appears in the Colorado Nurse Practice Act and 2) the ANA Code of Ethics, a statement of standards and ideals for nursing.
- Students also are expected to participate in clinical practicum in various health care facilities and provide a health service to the community. Much of the clinical practicum is off-campus, working with individuals with a variety of health-care conditions.

Outcomes Assessment Activities

- The Nurse Entrance Exam, a standardized preassessment.
- State Board Results (NCLEX). Feedback within six weeks (post graduation).
- Individual and class scores on the NLN Comprehensive Nursing Achievement Examination.
- A graduate survey which identifies employer, nursing role, area of clinical nursing, and higher education. It is anticipated that the survey will be used one year and five years after graduation.
- A Leadership Profile Standardized Exam in N451: Leadership Nursing.
- Individual conferences between clinical faculty and students utilizing a departmental performance evaluation tool to determine adequacy of cognitive, psychomotor, and affective learning.
- Other standardized exams (Psych and OB,NLN exams etc.) at the end of clinical practicum courses.

PHYSICS/PHYSICAL SCIENCE DEPARTMENT

CHAIR: Graham
FACULTY: Schaeffer, Spenny, Wallin

The major in physics leads to a bachelor of science (BS) degree. In addition, supporting courses and general education courses in physics and physical science are available for students with a wide spectrum of interests, backgrounds and needs. Physics majors must consult with a departmental adviser as early as possible and must file a departmentally approved plan of study by the beginning of the junior year.

The bachelor of science degree in physics is offered with several options:

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.

Physics option
Primarily for students planning graduate study toward a professional career in physics, astronomy or other related fields.

Physics options in chemical physics, biophysics, or mathematical physics.
These options are designed to meet specific career objectives for an individual.

Physics/teaching option
Provides students with the knowledge and skills necessary to obtain Colorado Department of Education certification as science teachers.

Under all of the above options, 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.

Physics/physical science teaching option
This is a teacher certification program. Secondary teaching requirements include courses in the physical sciences and supporting areas. In addition to the basic requirements, 14 additional credits are required in one of the physical sciences along with appropriate courses in education. Students preparing to teach at the elementary level may use their broad-area subject matter preparation to meet this 14-hour requirement.

Minors are also available in physics, physical science, and geology for students needing a specialized science minor in these fields.

Departmental Goals

- To supply students with the necessary background to successfully pursue graduate study toward a professional career in physics, astronomy or a related field.
- To prepare students to enter technical positions in government or industry upon graduation.
- To provide students with the knowledge and skills necessary to obtain Colorado Department of Education Certification as science teachers of physics or physical science.

Expected Student Outcomes

General Requirements

- Students graduating with a BS in physics must have at least a 2.0 grade-point average in physics courses and no more than four credits in physics 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.
- At least 12 physics credits applied to the major (seven for minor) must be earned at USC with a C or better average.
- Students must have earned a C or better grade in lower-division prerequisite courses before being admitted to upper-division courses in physics.
- Students must demonstrate a knowledge of computer programming.
- In all but the teaching options, majors are required to take the senior research course in which students become involved in a theoretical or experimental research problem relating to physics under the supervision of a department faculty member. A fundamental understanding of chemistry and its lab techniques is also required of all majors in all options.

Specific Requirements for the Physics Option

PHYS Course		Title	Credits
PHYS	221/221L	General Physics I/Lab I	5
	222/222L	General Physics II/Lab II	5
	301	Theoretical Mechanics	4
	321	Thermodynamics	3
	322	Advanced Laboratory-Heat	1
	323/323L	General Physics III/Lab III	5
	341	Optics	3
	342	Advanced Laboratory - Optics	1
	431	Electricity and Magnetism	4
	432	Advanced Lab Electricity & Magnetism	1
	441	Quantum Mechanics	4
	480	Practicum in Laboratory Instruction	1
	492	Research	1
	493	Seminar	1
		TOTAL	39

Other Required Courses

MATH	126	Calculus and Analytic Geometry I	5
MATH	207	Matrix & Vector Alg. with Applications	2
MATH	224	Calculus and Analytic Geometry II	5
MATH	325	Intermediate Calculus	3
MATH	337	Differential Equations I	3
MATH	338	Differential Equations II	3
Approved Math Elective			3
CHEM	121/121L	General Chemistry I/Lab	5
CHEM	122/122L	General Chemistry II/Lab	5
CST	102	Programming w/BASIC	
or			
CST	105	FORTRAN	3
		TOTAL	37

Institutional and General Education

ENG	110	Composition I	3
ENG	211	Composition II	3
SPCOM	101	Expository Speaking	2
HUMANITIES			10
SOCIAL SCIENCES			10
FREE ELECTIVES			24
		TOTAL	52

Total Credit Hours: 128

Specific Requirements for the Physics/Electronics Engineering Option

PHYS Courses		Title	Credits
PHYS	221/221L	General Physics I/Lab	5
	222/222L	General Physics II/Lab	5
	301	Theoretical Mechanics	4
	321	Thermodynamics	3
	322	Advanced Laboratory - Heat	1
	323/323L	General Physics III/Lab III	5
	341	Optics	3
	342	Advanced Laboratory - Optics	1
	431	Electricity and Magnetism	4
	492	Research	1
		TOTAL	32

Other Required Courses

MATH	126	Calculus and Analytic Geometry I	5
MATH	207	Matrix and Vector Algebra with Appl.	2
MATH	224	Calculus and Analytic Geometry II	5
MATH	325	Intermediate Calculus	3
MATH	337	Differential Equations I	3
CHEM	121/121L	General Chemistry I/Lab	5
CHEM	122/122L	General Chemistry II/Lab	5
CST	105	FORTRAN	3
EET	110/110L	Computer Aided Electronic Drafting/Lab	3
EET	250/250L	Basic Electronic Principles/Lab	4
EET	211/211L	Electronics I/Lab	4
EET	212/212L	Electronics II/Lab	4
EET	254/254L	Introduction to Digital/Lab	4
EET	255/255L	Introduction to Microprocessors/Lab	4
CST	255	Introduction to Pascal	3
EET	355	Advanced Microcomputers	4
		TOTAL	61

Institutional and General Education

ENG	110	Composition I	3
ENG	211	Composition II	3
SPCOM	101	Expository Speaking	2
HUMANITIES			10
SOCIAL SCIENCES			10
FREE ELECTIVES			7
		TOTAL	35

Total Credit Hours: 128

Specific Requirements for the Physics/Engineering Option

PHYS	221/221L	General Physics I/Lab	5
	222/222L	General Physics II/Lab	5
	301	Theoretical Mechanics	4
	321	Thermodynamics	3
	322	Advanced Laboratory-Heat	1
	323/323L	General Physics III/Lab III	5
	341	Optics	3
	342	Advanced Laboratory - Optics	1
	431	Electricity and Magnetism	4
	492	Research	1
		TOTAL	32

Other Required Courses

MATH	126	Calculus and Analytic Geometry I	5
MATH	207	Matrix & Vector Alg. with Applications	2
MATH	224	Calculus and Analytic Geometry II	5
MATH	325	Intermediate Calculus	3
MATH	337	Differential Equations I	3
CHEM	121/121L	General Chemistry I/Lab	5
CHEM	122/122L	General Chemistry II/Lab	5
CST	105	FORTRAN	3
EN	103	Introduction to Engineering	2
EN	107	Engineering Graphics	2
EN	211	Engineering Mechanics I	3
EN	212	Engineering Mechanics II	3
EN	231/231L	Circuit Analysis I/Lab	5
EN	301	Fluid Mechanics	4
EN	312/312L	Materials Science/L	3
EN	321	Thermodynamics I	3
EN	322	Thermodynamics II	3
EN	324/324L	Mechanics of Materials/Lab	4
		TOTAL	63

Institutional and General Education

ENG	110	Composition I	3
ENG	211	Composition II	3
SPCOM	101	Expository Speaking	2
HUMANITIES			10
SOCIAL SCIENCES			10
FREE ELECTIVES			5
		TOTAL	33

Total Credit Hours: 128

Specific Requirements for the Physics, Chemistry, Biology, Mathematics Option

PHYS	221/221L	General Physics I/Lab I	5
	222/222L	General Physics II/Lab II	5
	301	Theoretical Mechanics	4
	321	Thermodynamics	3
	322	Advanced Laboratory-Heat	1
	323/323L	General Physics III/Lab III	5
	341	Optics	3
	342	Advanced Laboratory - Optics	1
	431	Electricity and Magnetism	4
	492	Research	1
		TOTAL	32

Other Required Courses

MATH	126	Calculus and Analytic Geometry I	5
MATH	207	Matrix & Vector Alg. with Applications	2
MATH	224	Calculus and Analytic Geometry II	5
MATH	325	Intermediate Calculus	3
MATH	337	Differential Equations I	3
CHEM	121/121L	General Chemistry I/Lab	5
CHEM	122/122L	General Chemistry II/Lab	5
CST	102	Programming w/BASIC	
or			
CST	105	FORTRAN	3
Approved electives in biology			32
or			
Approved electives in chemistry			22
or			
Approved electives in mathematics			14
		TOTAL	51 - 69

Institutional and General Education

ENG	110	Composition I	3
ENG	211	Composition II	3
SPCOM	101	Expository Speaking	2
HUMANITIES			10
SOCIAL SCIENCES			10
FREE ELECTIVES			0-17
		TOTAL	28 - 45

Total Credit Hours: 128

Specific Requirements for the Physics, Secondary Teaching Option

PHYS	110	Elementary Descriptive Astronomy	3
PHYS	221/221L	General Physics I/Lab I	5
	222/222L	General Physics II/Lab II	5
	301	Theoretical Mechanics	4
	321	Thermodynamics	3
	323/323L	General Physics III/Lab III	5
	341	Optics	3
	342	Advanced Laboratory - Optics	1
	431	Electricity and Magnetism	4
	432	Advanced Lab-Elec. & Magnetism	1
	493	Seminar	1
		TOTAL	35

Other Required Courses

MATH	126	Calculus and Analytic Geometry I	5
MATH	207	Matrix & Vector Alg. with Applications	2
MATH	224	Calculus and Analytic Geometry II	5
MATH	325	Intermediate Calculus	3
MATH	337	Differential Equations I	3
CHEM	121/121L	General Chemistry I/Lab	5
CHEM	122/122L	General Chemistry II/Lab	5
GEOL	101/101L	Earth Science/Lab	4
BIOL	121	Environmental Conservation	4
BIOL	162	Personal Health	3
BIOL	191/191L	Aspects of Biology	4
CST	101	Computers and You	3
PSYCH	101	General Psychology I	3
PSYCH	151	Intro. to Human Development	
or			
ED	210	Human Growth & Dev. for Educators	3
ED	202	Foundation of Education	3
ED	435	Classroom Management	3
ED	460	Educational Media & Technology	3
ED	461	Atyp. Students in the Secondary School	3
ED	488	Student Teaching Secondary	15
IST	345	Career Education	2
RDG	425	Teaching Rdg. in Content Areas	2
		TOTAL	83

Institutional and General Education

ENG	110	Composition I	3
ENG	211	Composition II	3
SPCOM	101	Expository Speaking	2
HUMANITIES			10
SOCIAL SCIENCES			4
		TOTAL	22

Total Credit Hours: 140

Specific Requirements for the Physical Science, Secondary Teaching Option

PHYS	110	Elementary Descriptive Astronomy	3
	201/201L	Principles of Physics I/Lab	4
	202/202L	Principles of Physics II/Lab	4
		TOTAL	11

Other Required Courses

BIOL	121	Environmental Conservation	4
BIOL	162	Personal Health	3
BIOL	191/191L	Aspects of Biology	4
CHEM	121/121L	General Chemistry I/Lab	5
CHEM	122/122L	General Chemistry II/Lab	5
GEOL	101/101L	Earth Science/Lab	4
GEOL		Approved Electives	6
CST	101	Computers and You	3
MATH	221	Applied Calculus: An Intuitive Approach	5
Approved electives in chemistry or geology or physics			14
PSYCH	101	General Psychology I	3
PSYCH	151	Intro. to Human Development	
or			
ED	210	Human Growth & Dev. for Educators	3
ED	202	Foundation of Education	3
ED	435	Classroom Management	3
ED	460	Educational Media & Technology	3
ED	461	Atyp. Students in the Secondary School	3
ED	488	Student Teaching Secondary	15
IST	345	Career Education	2
RDG	425	Teaching Rdg. in Content Areas	2
		TOTAL	90

Institutional and General Education

ENG	110	Composition I	3
ENG	211	Composition II	3
SPCOM	101	Expository Speaking	2
HUMANITIES			10
SOCIAL SCIENCES			4
FREE ELECTIVES			5
		TOTAL	27

Total Credit Hours: 128

Specific Requirements for the Minor in Physics

PHYS	221/221L	General Physics I/Lab I	5
	222/222L	General Physics II/Lab II	5
	323/323L	General Physics III/Lab III	5
Approved Electives			5
		TOTAL	20

Specific Requirements for the Minor in Physical Science

A minimum of 24 credits must be selected from the courses listed below.

PHYS	100	Physical Science	3
PHYS	110	Elementary Descriptive Astronomy	3
PHYS	201/201L	Principles of Physics I/Lab	4
PHYS	202/202L	Principles of Physics II/Lab	4
PHYS	361	Physics of Sound	3
CHEM	111/111L	Principles of Chemistry/Lab	4
CHEM	112/112L	Intro. to Organic & Biochemistry/Lab	4
GEOL	101/101L	Earth Science/Lab	4
GEOL	123/123L	Historical Geology/Lab	4
CST	102	Programming w/BASIC	3
CST	105	FORTRAN	3
		TOTAL	24

Specific Requirements for the Minor in Geology

GEOL 101/101L Earth Science/Lab	4
Approved electives	4
Upper-division electives	12
TOTAL	20

A minimum of seven credits must be earned at USC.

Co-curricular Requirements

The department faculty believes that students should have co-curricular experiences that compliment and reinforce their academic experiences. Therefore, we encourage students to join and participate in events sponsored by the department and the Society of Physics Students (SPS), Sigma Pi Sigma initiations, picnics, graduation breakfast, pot luck dinners, etc. to foster a spirit of camaraderie with our majors.

Outcomes Assessment Activities

The faculty of the physics/physical science department will assess the skills, capacities, and knowledge of its majors as follows:

- The student must complete a senior research project including a formal presentation of results both orally and in writing to at least two members of the department (except for those in the teaching options).

- The student must take the Physics Field Achievement test offered by The Educational Testing Services (ETS) or another departmentally approved exam covering the sub-fields in physics at some point during his/her senior year except for those in the physical science option).
- By maintaining a portfolio on each student which would contain the following: college grades, record of special skills acquired, senior research project assessment, physics field achievement test results and a record of co-curricular activities. During the semester of graduation the department faculty will review the portfolio and draft a brief summation of the students' performance. This summation becomes part of the graduate's file which will be kept in the department, and added to as additional information is obtained from student or employer. The portfolio will be given to the student for his/her use upon graduation.

The department faculty believe that improvement in the skills, capacities, and knowledge of its minors can be assessed through course work required of each minor. The course grade would be a measure of the student's grasp of the basics in each discipline. In addition to grades, the geology minor will be assessed:

- by performance during at least three required field trips; and
- by a written report on an upper division topic agreed to by the student and the professor.

THE SCHOOL OF BUSINESS

Dr. Teshome Abebe, dean

Academic Departments	Majors	Minors
Accountancy	Accounting (BSBA)	Accounting
Business Administration/ Economics	Business/Management (BSBA) • Management • Marketing • Operations and Materials • Finance	*Non-Business* Business Administration Economics *Business Majors* Accounting Economics Finance Management Marketing Operations and Materials Management
	Economics (BSBA)	

Goals of the School

The mission of the School of Business is to provide high quality, contemporary education in business for our service area.

To accomplish this mission we will:

- Provide opportunities for both traditional and non-traditional students at the undergraduate and graduate levels;
- Provide opportunities for on-going professional development for the community;
- Include the activities of teaching, scholarly pursuit, and service; and
- Emphasize innovation and excellence in all that we do.

Program Goals

The four programs leading to the BSBA degree in business management have the following goals:

The program in *finance* is designed to prepare students to work in general managerial positions that require financial application to the sources and uses of funds, to set criteria, to analyze financial instrument selection, and to manage and report on the financial components of a company.

The program in *management* is designed to prepare students to be employed in management stream positions of medium and large firms. In addition to general management skills, the program has an emphasis on personnel selection, training and evaluation.

The *marketing* program is designed to prepare students to be able to determine a target market, design and implement a marketing strategy, and manage the sales and promotion of products and services.

The program in *operations and materials management* is designed to prepare students in the necessary computer and quantitative skills to support managerial decisions in production-operations and materials-purchasing areas of manufacturing firms.

The program leading to the BSBA degree in economics has the following goals:

To prepare students to think critically by using reasoning and analytic skills on issues that have economic and financial content. The economics program not only prepares students for graduate study, but specifically prepares them to work in general managerial positions, both private and public, that have a financial foundation requirement.

The program leading to the BSBA in accounting has the following goals:

To prepare students for a professional career in government and/or private industry. Many graduates will become certified public accountants. Graduates will serve the public interest, and be responsible to investors, consumers and creditors.

The School of Business also offers a graduate program leading to a master's degree in business administration (MBA). 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 the *Graduate Studies* section of this catalog for more information.

Program Goals for School of Business Minors

The purpose of the business administration minor (for non- business students) is to give students an understanding of the fundamentals of accounting, economic and financial principles, and the basics of managing a business and marketing a product or service.

The economics minor (for non-business students) is designed to prepare students to have an understanding of micro and macro economic principles, supply, demand, and income distribution, and to be able to apply these principles to current economic problems.

The goal of the minor in accounting (for non-business students) is to produce graduates in other majors with a basic understanding of accounting.

Expected Student Outcomes

General Requirements

Pre-business core (cumulative GPA 2.0 is required to continue the business core).

All business students take the pre-business core. This prepares students who are declaring a business major for general business knowledge and skills. The core also gives students an understanding and appreciation for the intellectual discipline needed for the business program.

Courses		Titles	Credits
BUSAD	160	Computers and Information Processing	3
ACCTG	201	Principles of Financial Accounting	4
ACCTG	202	Principles of Managerial Accounting	4
BUSAD	260	Business Statistics I	3
ECON	201	Principles of Macroeconomics	3
ECON	202	Principles of Microeconomics	3
BUSAD	220	Principles of Business Law	3
		TOTAL	23

Business core (cumulative GPA of 2.0 required to continue to the emphasis area)

All business students take the business core. This provides students with the common body of knowledge needed for imaginative and responsible citizenship and leadership roles in business and society — domestic and worldwide. The business core is also designed to provide students with the opportunity to integrate their educational experience in business within a specific discipline and across disciplines.

ECON	310	Money and Banking	3
FIN	330	Corporate Financial Management	3
MGMT	310	Principles of Management	3
MGMT	311	Production and Operations Management	3
MKTG	340	Principles of Marketing	3
BUSAD	475	International Business	3
	485	Senior Studies	3
MGMT	485	Managerial Strategies and Policies	3
		TOTAL	24

Area Requirements

- A cumulative GPA of 2.0 is required to graduate, except in accounting, where a minimum garde of C in each major course is required (except for ACCT 201 and ACCT 202).
- All business students take a major core.
- Business/management students choose from one of four emphasis areas, each requiring a total of 24 hours. In economics, area requirements total 24 hours. In accounting, area requirements total 31 hours.

Minor Requirements

Business students who have chosen business management, economics or accounting may choose a different business emphasis area as a minor by following the guidelines in the School of Business planning sheet. The minor requires 18 additional hours outside of the emphasis area.

Specific Curricular Requirements

Math 121 or 124 or equivalent, with a minimum grade of C, is required of all business students. Students also must satisfy the university general education requirements, general institutional requirements, and have at least 128 total hours with a cumulative GPA of 2.0 to graduate.

Co-curricular Requirements

Co-curricular activities are encouraged for all business students. Included are internships, student clubs, and seminar programs. Student clubs include:

Student chapter of the National Association of Accountants
Management Club
Marketing Club
Omicron Delta Epsilon
Student Association of Finance

Outcomes Assessment Activities

Student Portfolio

The School of Business curriculum offerings are designed to help track each student's progress at various checkpoints through the establishment of a portfolio. The portfolios are kept in a central file in the School of Business, accessible to the administration, the student, the student's adviser, and the faculty of the school.

Each portfolio contains items such as:

- the School of Business advising form;
- ACT or SAT test scores, with date;
- high school GPA and class standing, date of graduation, school, and location;
- records of club and organizational membership;
- MGMT 485, Management Strategies and Policies project-reports record and the designated discipline area 484, Senior Studies project-reports record; and
- national standardized test results, if applicable.

Advising

Generally, students enter the business program during their sophomore year. They finish the pre-business core sometime in their junior year, and the business core generally by the end of their junior year. Advisers assess their progress at each checkpoints, using the School of Business advising form.

Departmental Files

- School of Business faculty measure achievement annually in each major and area of emphasis by administering (whenever one is available) a nationally standardized test. Results of such measurements are kept in a central file in the School of Business Office.
- The School of Business compiles information to assess the success of its graduates. Information is obtained from the USC alumni office, the placement office, and other sources.

ACCOUNTANCY DEPARTMENT
CHAIR: Peterlin (Acting)
FACULTY: Bridges, Peterlin, Regassa

The major in accounting leads to the bachelor of science in business administration (BSBA) degree. 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.

The program is accredited by the Colorado State Board of Accountancy. Students completing the program qualify under the education requirements of Colorado law for the CPA examination, which they should plan to take during the last semester of their senior year.

Departmental Goals

- To produce graduates who will function in today's multi-faceted accounting and business environment. This goal is achieved by the BSBA degree.
- To produce graduates who can understand and explain all areas of accounting, and apply that knowledge in a practical environment.
- To provide service and general education to non-business students.
- To provide co-curricular opportunities in students' areas of interest.

Expected Student Outcomes

General Requirements

- Completion of the pre-business core (see School of Business general requirements).
- Completion of the business core (see School of Business general requirements).
- Completion of the math requirement (see *Academic Requirements* section).
- Completion of the specific requirements for the major in accounting.

Specific Requirements for the Major in Accounting

Courses		Titles	Credits
ACCTG	301	Intermediate Accounting I	4
ACCTG	302	Intermediate Accounting II	4
ACCTG	311	Federal Income Tax	4
ACCTG	320	Cost Accounting	4
ACCTG	410	Auditing	4
Electives: Eleven hours from 300 or 400 level accounting			11
		TOTAL	31

Specific Requirements for the Minor in Accounting
(Non-business students)

ACCTG	201	Principles of Financial Accounting	4
ACCTG	202	Principles of Managerial Accounting	4
ACCTG	301	Intermediate Accounting I	4
ACCTG	302	Intermediate Accounting II	4
Electives: Five hours from 300 or 400 level accounting			5
		TOTAL	21

Co-curricular Requirements

See School of Business requirements

Outcomes Assessment Activities

See School of Business outcomes

BUSINESS ADMINISTRATION AND ECONOMICS DEPARTMENT

CHAIR: Askwig
FACULTY: Abebe, Ahmadian, Billington, Chandler, Dhatt, Eisenbeis, Noreiko, Rader, Ribal, Sarver, Shah, Shirley, Watkins, Zeis

The major in business management leads to the bachelor of science in business administration (BSBA) degree, and provides students with the theoretical and conceptual basis of business as well as application skills to assume leadership roles in industry, government and education.

The undergraduate business management degree permits students to select one emphasis as a specialty area. Emphasis areas within this major are available in management, operations and materials management, finance and marketing. Courses in management, finance, and marketing are listed under separate prefixes in this catalog.

The major in economics leads to the bachelor of science in business administration (BSBA) degree, and provides students with the theoretical and conceptual basis of economics and an excellent preparation for graduate and professional training in economics, management, banking and law. The finance emphasis area prepares students for careers in financial institutions, insurance, real estate, investments and financial management.

Departmental Goals

- To prepare students to achieve accredited BSBA degrees in business management or business economics.
- To provide non-business students with broad but functional minors in business administration or economics.
- To provide service and general education for non-business students.
- To provide to managment and economics students the opportunity for real-world experience.

- To provide business co-curricular opportunities in students' areas of interest.

Expected Student Outcomes: Business Management Major

General Requirements

- Completion of the pre-business core (see School of Business general requirements).
- Completion of the business core (see School of Business general requirements).
- Completion of the math requirement (see *Academic Requirements* section).
- Completion of one of the four emphasis areas.
- Completion of the requirements for a minor.

Specific Requirements for the Emphasis Area in Finance

Course		Titles	Credits
ACCTG	301	Intermediate Accounting I	4
FIN	331	Managerial Finance	3
FIN	333	Investment Analysis	3
FIN	335	Real Estate	3
FIN	337	Insurance	3
FIN	431	Financial Policy Analysis	3
Electives: six hours from selected 300-400 level courses			6
		TOTAL	25

Specific Requirements for the Emphasis Area in Marketing

BUSAD	261	Business Statistics II	3
BUSAD	270	Business Communications	3
MKTG	341	Sales Force Management	3
MKTG	342	Promotional Strategy	3
MKTG	348	Consumer Behavior	3
MKTG	440	Marketing Research	3
Electives: six hours from selected 300-400 level courses			6
		TOTAL	24

Specific Requirements for the Emphasis Area in Management

BUSAD	270	Business Communications	3
MGMT	318	Personnel Management	3
MGMT	320	Organizational Behavior	3
MGMT	365	Management Information Systems	3
MGMT	410	Industrial Relations	3
ECON	410	Managerial Economics	3
Electives: six hours from selected 300-400 level courses			6
		TOTAL	24

Specific Requirements for the Emphasis Area in Operations and Materials Management

BUSAD	261	Business Statistics II	3
MGMT	362	Purchasing and Materials Management	3
MGMT	365	Management Information Systems	3
MGMT	412	Issues in Operations Management	3
MGMT	460	Operations Planning and Strategy	3
MGMT	465	Operations Research/Management Science	3
Electives: six hours in selected 300-400 level courses			6
		TOTAL	24

Specific Requirements for the Minor in Business Administration
(Non-business students)

Course		Titles	Credits
ACCTG	201	Principles of Financial Accounting	4
ACCTG	202	Principles of Managerial Accounting	4
ECON	201	Principles of Macroeconomics	3
ECON	202	Principles of Microeconomics	3
MGMT	310	Principles of Management	3
FIN	330	Corporate Financial Management	3
MKTG	340	Principles of Marketing	3
		TOTAL	23

Co-curricular Requirements

See School of Business requirements

Outcomes Assessment Activities

See School of Business outcomes

Expected Student Outcomes: Economics Major

General Requirements

- Completion of the pre-business core (see School of Business general requirements).
- Completion of the business core (see School of Business general requirements).
- Completion of the math requirement (see *Academic Requirements* section).
- Completion of the economics core (see School of Business general requirements).
- Completion of the requirements for a minor.

Specific Requirements for the Economics Major

ECON	301	Intermediate Macroeconomics	3
ECON	302	Intermediate Microeconomics	3
ECON	307	Current Economic Issues	3
ECON	330	Public Finance	3
ECON	402	Economics of Labor	3
ECON	410	Managerial Economics	3
Electives: six hours from selected 300-400 level courses			6
		TOTAL	24

Specific Requirements for the Economics Minor
(Non-business students)

Course		Title	Credits
ECON	201	Principles of Macroeconomics	3
	202	Principles of Microeconomics	3
	301	Intermediate Macroeconomics	3
	302	Intermediate Microeconomics	3
	310	Money and Banking	3
Electives: Six hours from 300 or 400 level Economics			6
		TOTAL	21

Co-curricular Requirements

See School of Business requirements

Outcomes Assessment Activities

See School of Business outcomes

SPECIAL ACADEMIC PROGRAMS AND SERVICES

FEDERALLY SPONSORED PROGRAMS

Minority Biomedical Research Support Program. The University of Southern Colorado provides 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 campus since August 1981.

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.

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, career counseling, and financial aid preparation.

Upward Bound. Upward Bound is a pre-college program for high school students from low-income and first-generation families in Pueblo County. 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.

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.

International students enrolled with the American Language Academy who are 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 *International Students* section)

American Language Academy offices are located in the Occhiato University Center, Room 121. Contact American Language Academy by telephone at (719) 549-2222, Monday-Friday, 8 a.m. to 5 p.m., or write to the American Language Academy in care of the university.

THE UNIVERSITY LIBRARY

The University Library provides information services to students, faculty, staff and patrons throughout the city and region.

Library faculty and 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; the papers of Vincent Massari, former state senator; the Alva Adams family papers; Tobi Hopkins Black Literature; the Ralph Taylor Southwest collection, and the Edward O'Brien Western collection.

The audiovisual collection in Library 310 offers student carrels for playback of video tapes, sound filmstrips, sound slides 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.

INTERNATIONAL STUDENT EXCHANGE PROGRAMS AND STUDIES ABROAD

The University of Southern Colorado values the benefit of an education in international settings. Consequently, the university encourages students with second language proficiency to enroll in international study programs. Students wishing to increase their cultural awareness, second language proficiency or competency in subjects offered abroad are encouraged to contact the English/foreign language department chair in the College of Liberal and Fine Arts.

CONTINUING EDUCATION

The university makes available a broad array of credit and non-credit courses and seminars and workshops through the Division of Continuing Education. 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 in Colorado Springs, the Colorado State Penitentiary in Canon City, community college campuses throughout central and southeastern Colorado, and on-site in many local businesses.

Both degree and non-degree seeking students are allowed to participate in the extended studies. Persons desiring classification as degree-seeking students must apply for admission to the university.

Credit courses taken through the University of Southern Colorado Continuing Education program 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 Continuing Education 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.

Continuing education courses normally are scheduled in eight- or nine-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. These special request courses may be held either on or off campus.

In-house training programs are available to meet the ever-changing training needs of business and industry. The programs can be designed to meet the specific needs of an organization and may be presented at the company site or, if requested, at the university. Similar services are available to school districts.

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. All cooperative programs are administered by the academic departments.

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, located in the College of Applied Science and Engineering Technology, 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.

KTSC-TV

KTSC-TV, Channels 8 and 53, a non-commercial public television station licensed by the Federal Communications Commission to the university, operates as a public service under the provost. 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 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.

HONORS

The Honors Program provides educational enrichment experiences for academically talented students. Interdisciplinary courses (IS), independent study, and opportunities for experiential learning are available for honors students. Students completing at least 20 semester hours of coursework in the program can fulfill minor or area-of-concentration requirements for the university.

Information regarding eligibility, program offerings, and standards for successful completion of the program are available from the director of Special Academic Programs, the Honors Program director, or the Office of the Provost.

WOMEN'S STUDIES

The area of concentration in women's studies 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.

The concentration area consists of the following courses: Chicano Studies 210; English 260; Mass Communications 235; Nursing 117; Psychology 211 and 212; and Sociology 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 offering. With approval of departments offering the major, 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 chairs.

GRADUATE PROGRAMS

GRADUATE POLICIES AND PROCEDURES

GRADUATE ADMINISTRATION

Graduate programs and curricula at the University of Southern Colorado are developed by the faculty and administration in the instructional colleges and are administered with the assistance of the director of Admissions and Records. The director of Admissions and Records is guided on academic policy matters by the University Graduate Studies Committee. Each graduate program has a director or coordinator functioning as the person to contact for specific information. Each program is responsible for its own guidelines for graduate assistantships.

GRADUATE DEGREE PROGRAMS

The University of Southern Colorado (USC) offers selected graduate courses and programs for degree-seeking and non-degree students. Graduate degrees are offered in applied natural science (MS), systems engineering (MS), and business administration (MBA). In addition, the university participates in a consortial arrangement with Adams State College for graduate degrees in elementary education (MA) and guidance and counseling (MA). Although the latter programs are offered on the USC campus, the actual degree is awarded by Adams State College and graduate regulations pertaining to the degree follow the policies of that institution.

GRADUATE ADMISSIONS POLICIES AND PROCEDURES

A student who has received a baccalaureate degree from an accredited institution and who wishes to take either additional undergraduate courses or begin graduate courses must submit the following items to the Office of Admissions, University of Southern Colorado, 2200 Bonforte Boulevard, Pueblo, Colorado, 81001-4901. The following items shall constitute the admission file for each applicant:

1) A completed application for admission to graduate programs of the University of Southern Colorado and a $10 application fee. The fee is nonrefundable and is not applicable toward tuition. For students previously enrolled as undergraduate students at USC, the fee is not required. An application form may be obtained by writing the USC Office of Admissions or by telephoning (719) 549-2461. Students in the consortium programs in elementary education and guidance and counseling apply directly to Adams State College.

2) Official transcripts of all college and university work sent directly to the Office of Admissions by each institution attended. Records received directly from students cannot be accepted except for advisement purposes. The records of students who previously attended USC will be obtained from the records office and do not require a student request.

3) The score from the aptitude portion of the Graduate Record Examination (GRE) or the score from the Graduate Management Admissions Test (GMAT) for students in business.

4) 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) is required for admission. Level 5 from the American Language Academy is also accepted.

GRADUATE ADMISSION

The student is admitted according to one of the four categories below, following the criteria approved by the program department.

Admission to graduate studies does not constitute admission to a particular graduate program. Admission to a particular degree program must be approved by the program director upon review of the student's credentials.

Regular Status

Regular status will be given to degree seeking students who meet all of the published requirements of their selected graduate program department. The requirements include:

- a baccalaureate degree from an institution accredited by the regional accreditation agency.
- the minimum undergraduate GPA established for the program; applied natural science - 3.0; business administration - 2.7; systems engineering - 2.8.
- submission of satisfactory scores from a standardized admissions test approved by the program department.
- a completed admissions file; and
- any additional requirements for the selected program including undergraduate deficiencies.

International students whose native language is not English must also meet the English language proficiency standard set forth in the *Graduate Admissions* section.

Conditional Status

The university provides a conditional status for students whose undergraduate grade-point average is between 2.5 and the minimum required for the particular program. In addition, program departments may specify conditions which may include higher grade-point averages, required scores on entrance examinations, or undergraduate major or course requirements as specified by the department. The director of Admissions and Records, on recommendation of the program director, will admit the student under conditional status if the student's grade-point average is at least 2.5 but not high enough for regular admission; or if the student has not met a condition specified by the program department. This special action may be taken if there are positive indicators of graduate success, e.g., high GRE or GMAT scores, solid upper-division performance, or outstanding professional achievement.

The director will refer the student to an adviser appointed by the dean of the college in which the program department is located. The student will be notified to meet with the adviser to determine what conditions will be applied. Departments may specify additional course work beyond the degree requirements as conditions of admission to regular status. A statement of the conditions and a plan for meeting them will be filed with the director and the dean of the college and a copy provided to the student.

When the conditions are met, the director of Admissions and Records will notify the student that he/she has achieved regular degree-seeking status. Students in conditional status may count toward the degree a maximum of 12 hours of graduate course work taken in the degree program.

Non-Degree Status

The director of Admissions and Records will admit the student in non-degree status under the following conditions:

a) The student requests courses for professional development only.

b) The student's record shows that he/she does not meet the qualifications for admission to a degree program with conditional or regular status. In this case, with the approval of the program director, the director of Admissions and Records will notify the student of the deficiency, the procedure to follow to become qualified and the name of an adviser who can assist the student. The adviser will be sent a copy of the notification. Students applying for admission from unaccredited institutions in the United States will be included in this category. A student in non-degree status who has completed 12 hours approved by an adviser with a 3.0 GPA or better at USC may petition the program director for a change to the regular degree-seeking status.

Students admitted in non-degree status may take, with the instructor's permission, graduate courses for which they meet prerequisites. A maximum of 12 hours taken in non-degree status may be applied toward a degree. Their inclusion requires the approval of the student's graduate committee.

Ineligible

Students who are denied admission to a graduate program will not be permitted to enroll in graduate courses.

Graduate Work Taken by Seniors

USC students who are in their senior year of undergraduate work, and who have a undergraduate grade-point average that meets the admissions requirements for the program, may take graduate courses for graduate credit with the approval of the appropriate program director and the director of Admissions and Records. Up to 12 graduate hours may be taken prior to graduation, but the combined undergraduate and graduate enrollment normally may not exceed 16 hours for a semester. Graduate level courses (500 level) cannot be used simultaneously to satisfy baccalaureate and graduate degree requirements.

CHANGE OF STATUS

The director of Admissions and Records will notify the student and the program director when he/she has satisfied the conditions of admission and is changed to regular status.

GRADUATION REQUIREMENTS

Each graduate program at the university has specific graduation requirements which must be met prior to graduation. In addition, students must fulfill the following requirements for a graduate degree:

1) Have a cumulative graduate GPA of 3.0 or better at graduation. A maximum of six semester hours of coursework at the grade of C may apply toward graduation. A minimum of 24 semester-hours of credit in the approved degree plan must be earned at USC.

2) Have regular student status.

3) Complete the program's minimum number of hours of approved course work. The MBA and systems engineering programs require a minimum of 36 semester hours. The applied natural science program requires a minimum of 34 semester hours.

4) Pass a final comprehensive and/or oral examination in the major area of study.

5) Submit a graduation planning sheet signed by the student's graduate committee during the semester in which graduation is to occur. The deadline for submission is published in the semester schedule of courses.

6) Complete a thesis or directed research project. Submit two approved copies of the thesis, one to the program director and one to the director of Admissions and Records.

7) May repeat thesis and directed research project courses beyond the minimum hours required by a degree program. Satisfactory progress will be indicated by the grade IP. Enrollment for thesis or directed research credit is required for any academic term during which university resources (e.g., faculty time, computer use, library, etc) are being used by such a project.

8) Must be enrolled in the semester that the degree is completed.

ACCEPTANCE OF TRANSFER CREDIT

A maximum of nine (9) semester hours of resident graduate credit from other regionally accredited graduate institutions may be applied to a graduate degree program. Transfer credits must be directly applicable to the degree program and must be approved by the applicant's graduate committee and the director of Admissions and Records. Graduate credits accepted in transfer must not be from a correspondence course, must be from a course in which a grade of A or B was earned, and must be from an institution where the student maintained a graduate GPA of at least 3.0. Credits accepted in transfer do not apply to the GPA at USC.

GRADUATE ADVISING

Each graduate degree area has a program coordinator appointed by the dean of the college. Initial advisement of all graduate students in a degree area will be made by the program coordinator. During the first enrollment, each degree-seeking graduate student (regular or conditional) will be assigned a graduate adviser by the dean of the college in which the program resides. The adviser shall act as chairperson for a graduate committee for each student. The graduate committee shall consist of at least two faculty members (including the adviser) and is appointed by the dean of the college in consultation with the student. One member of the committee may be from outside the department of the student's graduate program. Changes in membership in the graduate committee may be requested by the student to the dean.

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.

COURSE LOADS

Graduate students enrolled in nine or more hours shall be considered as full-time students (six hours, summer); those enrolled for six hours shall be considered as half-time students (three hours, summer).

TIME LIMITS

Courses completed six or more years before the date of graduation, either at USC or at some other institution, will not be accepted as satisfying graduation requirements. Petitions for waiver of the six-year limitation may be submitted to the director of Admissions and Records with the approval of the student's graduate committee. The director will accept such petitions only upon justification of unusual and extenuating circumstances.

DEGREE PLAN

All degree-seeking graduate students are required to submit a degree plan, approved by all members of the graduate committee and proper director, to the director of Admissions and Records. The degree plan should be submitted no later than upon completion of 12 hours of study, since any course taken prior to having any given degree plan approved is subject to review for suitability in the program. Changes in the degree plan must be approved by the graduate adviser and program director and submitted to the director of Admissions and Records.

UNDERGRADUATE COURSES

Although undergraduate classes do not apply toward a graduate degree, students admitted to graduate study may be required to complete some undergraduate prerequisite courses in addition to their graduate work.

Courses taken for undergraduate credit by a graduate student do not enter into the graduate grade point computation. A graduate committee may, however, stipulate a grade point to be achieved in such undergraduate courses.

Graduate programs may include courses which are dual number at the senior (400) and graduate (500) level. Students registered for graduate credit shall be required to perform at the graduate level. Graduate students may not repeat for graduate credit a dual listed course which was taken in the undergraduate program.

DUAL DEGREE CREDIT

Students may receive dual credit for all common degree requirements in more than one graduate program if the degree plans are filed for both programs. In addition, up to six hours of elective credit may be applied to more than one graduate degree program pending approval of the graduate committee of the program involved and the director of Admissions and Records.

ACADEMIC STANDARDS

Graduate courses are graded in an alphabetical system with the following interpretation:

A - Excellent
B - Good performance
C - Passing, but below expected performance
D - Unsatisfactory performance
F - Failing
I - Incomplete, no credit awarded
S - Satisfactory
IP - In Progress
W - Withdrawal
WF - Withdrawal failing

Students may apply no more than six (6) semester hours of work with a grade of C toward graduation requirements. Grades of D, F, I, U, do not fulfill graduation requirements for graduate programs.

Graduate students may repeat a maximum of six hours of graduate credit. No course may be repeated more than once. 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 records office. 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.

To remain in good graduate standing, a graduate student's GPA must remain a 3.0 or better. If the graduate GPA falls below 3.0, a graduate student will be placed on probation. Students have one semester to show progress toward good standing. Probationary students with 12 or more semester hours of graduate work will be suspended whenever progress toward good standing is not demonstrated. A graduate student will be suspended whenever the graduate GPA falls below 2.50.

A student may appeal suspension by submitting a written petition to his/her graduate committee. This petition must provide a justification for continued registration. The graduate committee shall forward its recommendation through the appropriate dean to the provost. The provost or designee

shall make a decision on the appeal and inform the student of that decision. Decisions by the provost are final.

COMPREHENSIVE EXAMINATIONS

All graduate programs require a final comprehensive and/or oral examination at the time of defense of the thesis or directed research project. Scheduling is made through the graduate adviser. Students who fail a final examination may retake the examination once. A re-examination cannot be scheduled in the same semester as the original examination .

THESIS OR DIRECTED RESEARCH

Each graduate program requires a thesis or a directed research project. The programs also require an oral defense of the thesis or research project. Each student must submit a research plan. The plan must define the topic of study and outline the research design. The plan must have the written approval of all members of the student's graduate committee, the program director, and the appropriate dean.

The research plan should be filed as soon as possible after the degree plan is filed and before 24 credit hours of the student's degree plan have been completed.

DIRECTED RESEARCH REPORT

Graduate students whose degree plan calls for a directed research project are required to submit a report on that project to their graduate committee. Although the report need not be as formal as a thesis, it must, however, be typed in an acceptable format and must include a title page comparable to thesis format.

The report should include the purpose of the study of project, limitations, sources of data, the procedure used, and a summary section with conclusions. The research report must be approved by all members of the graduate committee and the appropriate dean. The final approved report must be submitted at least five (5) days prior to the anticipated date of graduation.

THESIS INSTRUCTIONS

Students who will be writing a thesis in partial fulfillment of graduation requirements must submit two (2) official copies of the approved thesis and three (3) copies of the thesis abstract to the university. The department will retain one (1) copy of the thesis and thesis abstract. The thesis and one copy of the thesis abstract shall be maintained in the University Library. The director of Admissions and Records shall retain one copy of the thesis abstract.

The thesis or directed research must:

1) contain a certificate of acceptance;

2) contain a title page;

3) conform to the style and form approved by the major department and outlined in the thesis plan;

4) be printed on high-quality paper with a minimum of 25 percent rag content;

5) contain no erasures; and

6) be bound.

The university-duplicated copy of the thesis must be of high-quality printing and must use a paper of the same quality as the original. Other copies of the thesis may be duplicated in any manner the student desires.

It is imperative that the utmost care be taken in the preparation of the final copy of the thesis. The completion of the thesis, including typing and duplication, is the sole responsibility of the student.

The thesis abstract should consist of no more than five hundred (500) words and should include a title page. The thesis abstract should cover the following items:

1) Purpose of study;

2) Research materials and methods results; and

3) Summary and conclusions

The approved thesis and thesis abstract must be submitted to the records office at least five (5) days prior to commencement.

ORAL DEFENSE OF RESEARCH

Upon completion of a master's thesis or directed research project, an oral defense/final comprehensive examination must be scheduled. Application for the oral defense is made to the graduate adviser.

A report of the outcome of the oral defense must be filed with the director of Admissions and Records. The report must be signed by all members of the graduate committee. Students must pass the oral defense to successfully complete their thesis or directed research requirement.

APPEALS

All graduate policies, procedures, and regulations may be appealed. Appeals should be made in writing to the Office of the Provost.

PROGRAMS OF STUDY

MASTER OF BUSINESS ADMINISTRATION (MBA)

The goal of the University of Southern Colorado's MBA Program 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 economic, political and social environment in which businesses function, 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, group projects, case studies and independent research.

The program is open to all applicants with a bachelor's degree, regardless of the undergraduate field of study, who can 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.

All 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 will constitute a scaled admission score for each applicant. Regular admission will be 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. Conditional admission may be given to students with GPA's between 2.50 and 2.70. Undergraduate leveling requirements may be required of students in either regular or conditional status. Graduate students are required to take all leveling course requirements before finishing 12 hours of graduate work.

The MBA degree will be conferred upon students who successfully complete a minimum of 36 hours of approved coursework. The curriculum is composed of three categories of courses: 1) 24 semester hours of required core courses which are taken by all candidates; 2) six semester hours of approved graduate electives in the School of Business; and 3) six semester hours of directed research under the supervision of a faculty member in the School of Business.

Core Courses:

Courses		Credits
ACCTG	510	3
BUSAD	550	3
ECON	501	3
FIN	530	3
MGMT	520	3
MGMT	560	3
MGMT	585	3
MKTG	540	3
Approved Electives		6
Directed Research		6
		36

All graduate courses for the MBA are listed in the *Course Descriptions* section of this catalog in the prefix areas of Accounting (ACCTG), business administration (BUSAD), economics (ECON), finance (FIN), management (MGMT), and marketing (MKTG).

ELEMENTARY EDUCATION (MA)

Adams State College/University of Southern Colorado Consortium Program.

The University of Southern Colorado cooperates with Adams State College in the delivery of a master of arts in elementary education degree. The continuation of the program is dependent upon student need, and the cooperating institutions reserve the right to cancel courses or the program as a result of insufficient enrollment.

The program is offered over a 24-month cycle. The current cycle began in fall 1989. To accommodate working students, the program is offered entirely in the evenings and summers on the USC campus.

Applicants for this program must have a valid teaching certificate with an elementary education endorsement, a cumulative GPA of 2.75 or higher for all college and university work, and a baccalaureate degree. Students whose grade-point average falls between 2.25 and 2.74 may be admitted conditionally. Those interested should apply to Adams State College.

The MA in elementary education will be conferred upon those students who complete the prescribed curriculum with a minimum of 30 semester hours of approved coursework. Students must maintain a graduate GPA of at least 3.0, submit scores from the aptitude section of the GRE during the first semester of the program, pass the graduate English Usage Exam, and pass a final comprehensive examination. A written plan for the degree must be filed with the adviser. A maximum of six semester hours of graduate work will be accepted in transfer if the transfer credits correspond to courses in the program. Requests to take the comprehensive exam must be filed one semester ahead.

GUIDANCE AND COUNSELING (MA)

Adams State College/University of Southern Colorado Consortium Program.

Through a consortial arrangement with Adams State College, the University of Southern Colorado provides students the opportunity to earn the master of arts degree in either school counseling or community counseling. All courses are offered in the evenings on the USC campus. Courses are taught by instructors from the USC and Adams State psychology departments. Two calendar years, including 36 credit hours of courses, are required for completion of the program. Those interested should apply to Adams State college.

APPLIED NATURAL SCIENCE (MS)

The graduate program leading to the degree of master of science in applied natural science prepares students to apply basic scientific disciplines to the practical problems encountered in business, industry, government, and education. Graduates from the program will be able to apply the techniques of scientific research to real-world problems.

Coursework emphasizes several important areas of applied natural science, including bio-technology, polymer chemistry, industrial chemistry, mathematical techniques in applied research, environmental concerns, scientific information systems and instrumentation. A unique feature of the program is a course addressing the ethical issues raised by scientific change.

The master of science in applied natural science requires 34 semester credit hours of approved graduate coursework including a research thesis. The program initially will offer three emphasis areas — applied biological sciences, applied chemical sciences, and applied biochemical sciences.

Required Courses

The course of study requires seven semester credits of work common to all students. Each student must select an emphasis area with a core of 13 semester credits, including thesis research. Fourteen credits in elective courses also are required. The program of study for each student must be approved by a college committee.

Course		Credits
ANS	510	1
ANS	520	1
ANS	593	2
MATH	544	3
		7

Required Courses for Each Emphasis

Biological Sciences Emphasis Core

Courses		Credits
BIOL	540/540L	3
BIOL	552/552L	4
BIOL	596	6
		13

Chemical Sciences Emphasis Core

CHEM	503	3
CHEM	529	2
CHEM	550	2
CHEM	596	6
		13

Biochemical Sciences Emphasis Core

BIOL	540/540L	3
CHEM	512/512L	4
BIOL	596 or	
CHEM	596	6
		13

Elective Courses for Each Emphasis

Biological Sciences Emphasis Electives (A minimum of four credit hours must be selected from courses listed below.)

Course		Credits
BIOL	526/526L	3
BIOL	532/532L	4
BIOL	541/541L	4
BIOL	543/543L	4
BIOL	572/572L	4
BIOL	579/579L	3
BIOL	581/581L	3
BIOL	582/582L	3
BIOL	585/585L	4
BIOL	591	1-4
		33-36

Chemical Sciences Emphasis Electives (A minimum of 12 credit hours must be selected from courses listed below.)

Course		Credits
CHEM	501	3
CHEM	512/512L	4
CHEM	525	3
CHEM	531	2

CHEM	591	1-4
PHYS	531	4
PHYS	541	4
		21-24

Biochemical Sciences Emphasis Electives (A minimum of four credit hours must be selected from courses listed below.)

Course		Credits
BIOL	543/543L	4
BIOL	552/552L	4
BIOL	572/572L	4
BIOL	591 or	
CHEM	591	1-4
CHEM	501	3
CHEM	503	3
CHEM	519/519L	4
CHEM	525	3
CHEM	531	2
CHEM	550	2
PHYS	531	4
PHYS	541	4
		38-41

SYSTEMS ENGINEERING (MS)

Systems engineering deals with the design and analysis of large scale, complex, human/machine/software systems. It employs methods and techniques from the engineering disciplines, mathematics, behavioral and physical sciences. **It is not necessary to have an undergraduate degree in engineering to be successful in this program.**

Students do need a strong foundation in math, a sense of intellectual curiosity and a desire to apply those skills to combine physical, human and monetary resources for the production of quality products or services at competitive prices. Systems engineers bridge the gap between management and operations, dealing with and motivating people, as well as determining what materials and tools should be used and how they should be used. Systems engineering techniques can be applied in commercial, governmental and non-profit organizations.

Admission requirements. The program is open to applicants with a quantitatively based baccalaureate degree from a regionally accredited college or university. Admission to the systems engineering program requires prior admission to graduate studies.

Regular status admission will be given to students with a baccalaureate degree from an accredited university or college, an undergraduate GPA of at least 2.80 who show promise of success in graduate study, and who have an adequate preparation in the prerequisite areas listed above. A grade point of 3.0 must be maintained to retain regular status.

Conditional status admission may be given to students whose undergraduate GPA is above 2.50 yet below 2.80 provided that the recommendations and GRE scores indicate that the applicant has the potential to satisfactorily complete graduate work. Students granted conditional status must complete all prescribed prerequisites as determined by the graduate adviser prior to having completed nine semester hours of graduate coursework.

Non-degree-seeking status may be granted to students desiring graduate coursework for career enhancement or other purposes. Students with non-degree-seeking status must document prerequisite background for graduate courses in which they register for professional purposes. Students who later seek admission to the degree program may claim a maximum of nine semester hours of graduate course work earned while in non-degree-seeking status.

International students whose native language is not English are required to demonstrate English proficiency prior to admission. This can be done by achieving a score of 500 or more on the Test of English as a Foreign Language (TOEFL) or by achieving a score of 80 or more on the Michigan Test for English Language Proficiency, or by completing Level 5 competency of the American Language Academy.

Transfer credits. A maximum of nine semester hours earned with grades of B or better may be accepted from another recognized institution if approved by the student's adviser and department chair.

Probation. A student whose cumulative GPA falls below 3.0 will be placed on probation for the subsequent semester. If the student does not achieve the cumulative 3.0 grade-point average by the end of the probationary semester, further enrollment as a degree-seeking student may be denied.

Prerequisite requirements. Students will be required to demonstrate proficiency in engineering by completing prerequisite background courses in engineering, computer science, economics and mathematics, or by documenting previous equivalent course or experiential work. Students who do not possess the specified prerequisite background may be admitted conditionally but will be required to complete prescribed prerequisites. Courses used as prerequisites for required graduate courses must be taken for credit.

Prerequisites: (USC Course Equivalents)
Computer Programming (EN 105)
Engineering Economics (EN 343)
Probability (Math 350)
Statistics (EN 456)
Differential Equations (MATH 337)

Degree requirements. The master of science in systems engineering degree requires the candidate to complete successfully a minimum of 36 semester hours of approved graduate credits (including a thesis) with a

cumulative average of 3.0 or better. No more than six semester hours of graduate coursework with a grade of C may be applied toward graduation requirements. Grades of D, F and Incomplete do not fulfill graduation requirements.

The course of study consists of 30 semester hours of required courses and six semester hours of thesis credit. Courses from an approved set of substitutions may be added to the program or substituted for required courses for which a student can demonstrate mastery as a result of previous course work.

Required Courses			**Credits**
EN	503	Ergonomics	3
EN	504	Scheduling and Sequencing	3
EN	520	Engineering Systems Simulation	3
EN	530	Project Planning & Control	3
EN	540	Advanced Engineering Economics	3
Courses			**Credits**
EN	565	Stochastic Systems Engineering	3
EN	571	Engineering Operations Research	3
EN	575	Engineering Systems Analysis and Design	3
EN	577	Operations Planning & Control	3
EN	593	Systems Engineering Seminar	3
EN	599	Thesis	6
		Total Semester Hours	36

Additions or Substitutions (petition required):			**Credits**
ACCTG	501	Managerial Accounting	3
ECON	501	Managerial Economics	3
MATH	544	Mathematical Methods of Applied Science	3
MGMT	560	Management Information Systems	3
MGMT	561	Advanced Database Management Systems	3
MGMT	567	Computer Simulation	3
EN	500	Logistics, Maintainability and Life Cycle Support	3
EN	501	Software Systems Engineering	3
EN	590	Special Projects	(1-3 var)
EN	591	Special Topics	(1-3 var)

All of the required courses are offered between 4 and 8:30 p.m. to accommodate students with full-time employment.

COURSE DESCRIPTIONS

The University of Southern Colorado does not offer all the classes listed in this catalog every semester or every year.

The following pages provide brief descriptions of course offerings, and the career, professional or graduate opportunities open to students who complete degrees in majors. Course listings are subject to change.

Each semester the university publishes a bulletin listing a detailed schedule of courses offered and the times and places of instruction. Courses listed in the bulletin are subject to change.

EXPLANATORY NOTES

NUMBERING OF COURSES

Course numbering is based on the content level of material presented in courses.

Courses numbered:

100-299 primarily for freshmen and sophomores
300-499 primarily for juniors and seniors
500-599 primarily for students enrolled in master's degree programs or the equivalent. Students may enroll if they have submitted and received approval on graduate planning sheets.

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

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.

Cross-listed courses. Courses in which students may earn credit under either of two prefixes (e.g., SOC or HIST) for the same offering.

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

Cancellation of courses. The university reserves the right to cancel courses not selected by an adequate number of students or not suitably staffed by qualified faculty.

KEYS TO SYMBOLS

Course descriptions include a variety of symbols conveying essential information. The following standard course description with explanation of symbols serves as a model:

191 Aspects of Biology 3(3-0)
Introduction to metric measurement, microscope, cell form, function, reproduction, biologically important molecules, bioenergetics, classifying and keying. GEN.ED.IIIA Corequisite: BIOL 191L. (F,S)

191..... course number
Aspects of Biology..... course title
3(3-0)..... number of credits (clockhours in lecture per week - clock hours in laboratory demonstration or studio experiences per week)
Corequisite BIOL 191L ... required to be taken concurrently
(F, S) ..... taught fall and spring semesters
"Introduction to"..... explanation of course content
GEN.ED.IIIA..... satisfies the university's general education requirement in Group III, Subgroup A.

Note: Not all of the above information may be noted in each course. Additional symbols include:

F	Taught Fall semester	**##**	Taught only in 1991-92
S	Taught Spring semester	**CE**	Credit by exam allowed
SS	Taught Summer session	**VAR**	Variable credit course
*	Offered upon demand	**L**	Suffix indicating lab course
#	Taught only in 1990-91	**IP**	Grade of IP available

UNIVERSITY-WIDE "HOUSE-NUMBERED" COURSES

200,300,400,500 - Workshop
290,390,490,590 - Special Project
291,391,491,591 - Special Topics
292,392,492,592 - Research
293,393,493,593 - Seminar
294,394,494,594 - Field Experience
295,395,495,595 - Independent Study
296,396,496,596 - Cooperative Education
297,397,497,597 - Studio Series
298,398,498,598 - Internship
299,399,499,599 - Thesis Research

COURSE PREFIXES

Course of instruction are identified by the following approved prefixes:

ACCTG	—Accounting
ANS	—Applied Natural Science
ANTHR	—Anthropology
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
FRN	—French
GEOG	—Geography
GEOL	—Geology

GER	—German
HIST	—History
HP	—Human Performance and Leisure Studies
IS	—Interdisciplinary Studies
IST	—Industrial Science Technology
ITL	—Italian
KIN	—Kinesiology
MACOM	—Mass Communications
MATH	—Mathematics
MET	—Mechanical Engineering Technology
MGMT	—Management
MILSC	—Military Science
MKTG	—Marketing
MUS	—Music
NSG	—Nursing
PHIL	—Philosophy
PHYS	—Physics
POLSC	—Political Science
PSYCH	—Psychology
RDG	—Reading
REC	—Recreation
RUS	—Russian
SOC	—Sociology
SOCSC	—Social Science
SPCOM	—Speech Communication and Theatre
SPN	—Spanish
SW	—Social Work

ACCOUNTING (ACCTG)

UNDERGRADUATE COURSES

201 Principles of Financial Accounting 4(4-0)
An introduction to accounting as the language and tool of business operations. Emphasis is placed upon the reasoning and logic associated with the accounting cycle. Prerequisite: MATH 120. (F,S,SS)

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

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. (F,S)

301 Intermediate Accounting I 4(4-0)
A study of financial accounting functions and basic accounting theory, recognition and measurement of assets and liabilities, and stockholders' equity. Prerequisite: ACCTG 202. (F,S)

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

311 Federal Income Tax 4(4-0)
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. Prerequisite: ACCTG 202. (F,S)

320 Cost Accounting 4(4-0)
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. Prerequisite: ACCTG 202. (F,S,SS)

401 Advanced Financial Accounting 4(4-0)
Application of fundamental theory to partnerships, joint ventures, foreign operations, consolidated statements, and business combinations. Prerequisites: ACCTG 302 and senior standing, accounting majors. (F,S)

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

404 CPA Law Review 3(3-0)
Business law as found in the Business Law section of the Uniform CPA examination. Prerequisite: senior standing, accounting major. (F,S)

410 Auditing 4(4-0)
A study of the systematic process by which external financial statements and other management assertions are verified and reported upon by independent, internal, and governmental auditors. Prerequisite: ACCTG 302. (F)

430 Accounting Information Systems 4(4-0)
The study of design and implementation of accounting information systems. Attention directed to the traditional accounting model and its relationship to computerized accounting information systems. Prerequisite: ACCTG 302. (S)

440 Fund Accounting 4(4-0)
A study of advanced accounting topics especially as concerns not-for-profit entities with emphasis on governmental accounting. Prerequisite: ACCTG 302. (F,S)

480 Small Business Studies 3(3-0)
Integrating prior studies in business into a realistic approach to assist in solving problems faced by selected firms in the community. Prerequisites: senior standing and permission of instructor. (F,S)

484 Senior Studies 3(3-0)
A discipline-oriented integration of prior course work into a special project, research paper and/or activity that demonstrates proficiency in the major. (F)

490 Special Projects (1-6 VAR)
(F,S,SS)

491 Special Topics (1-3 VAR)
(F,S,SS)

495 Independent Study (1-3 VAR)
Prerequisites: senior standing, accounting major and adviser permission. (F,S,SS)

498 Internship (1-6 VAR)
Supervised field work in selected business, social and governmental organizations; supplemented by written reports. (S/U grades.) Prerequisites: junior or senior standing in School of Business and permission of internship coordinator. (F,S,SS)

GRADUATE COURSES

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

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

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. (S/U grades.) (SS)

599 Thesis Research (1-6 VAR)
(IP and S/U grading) (SS)

ANTHROPOLOGY (ANTHR)

UNDERGRADUATE COURSES

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. (F,S)

104 Physical Anthropology 3(3-0)
Biological nature of humans; emphasis on how forces of evolution have shaped human nature in the past and present. GEN.ED.IIIA. (F,S)

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. (S)

106 Language, Thought and Culture 3(3-0)
Cross-cultural introduction to language processes in human society. GEN.ED.IIB. (S)

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. (F)

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. (S)

211 Laboratory and Field Techniques (1-10 VAR)
Training in field and/or laboratory techniques by participation in anthropological project. Prerequisites: permission of instructor; previous work in anthropology recommended. (F,S)

250 (SOC 250) The Sacred in Culture 3(3-0)
Concepts of the supernatural studied cross-culturally and in particular cultures. Analysis of the role of religion in helping individuals adjust to stress and aging. (S)

251 World Archaeology 3(3-0)
Awareness and appreciation of cultural evolution and heritage through descriptions and interpretations of archaeological remains throughout the world. GEN.ED.IIB. (S)

252 (SOC 252) Culture and Personality 3(3-0)
Relationship between group processes and personality factors in a cross-cultural perspective. GEN.ED.IIB. (F)

291 Special Topics (1-3 VAR)
(*)

301 Peoples and Cultures of the Southwest 3(3-0)
Examination of the region's multiethnic and pluralistic society; emphasis on adverse adaptations to distinctive nature and cultural environments. (S)

310 (SOC 310) Social and Cultural Theory 3(3-0)
From classical to contemporary theory in sociology and anthropology. (F,S)

401 (SOC 401) Health, Culture and Society 3(3-0)
Analysis of cultural, social, and psychological factors influencing health and health-care. (F)

402 (SOC 402) Aging, Culture and Society 3(3-0)
Cultural, sociological, and psychological dimensions of aging. (S)

411 Laboratory and Field Techniques (1-10 VAR)
Training in field and/or laboratory techniques by participation in anthropological projects. Prerequisites: permission of instructor; previous work in anthropology recommended. (F,S)

451 (SOC 451) Culture/Deviance/ Psychopathology 3(3-0)
Analysis of the relationship between culture and the causes and manifestations of deviance and psychopathology. (S)

453 Southwestern Archaeology 3(3-0)
Investigations of the prehistories of diverse peoples and cultures of the Southwest. (F)

491 Special Topics (1-3 VAR)
(F,S)

492 Research 3(3-0)
Analysis of the research process in anthropology. (S)

493 Seminar (2-4 VAR)
Major principles, propositions, and concepts which establish social and cultural understanding. (F,S)

494 Field Experience (3-12 VAR)
Practical experience in an agency setting. Prerequisite: permission of instructor. (F,S)

495 Independent Study (1-10 VAR)
Directed study of students interested in specific areas of anthropological concern. Prerequisites: previous work in anthropology and permission of instructor. (F,S)

APPLIED NATURAL SCIENCE (ANS)

GRADUATE COURSES

501 Ethics of Science 2(2-0)
The main currents of the history of science related to today's ethical issues; stresses critical analysis. (*)

510 Scientific Information Systems 1(1-0)
Techniques of the effective and efficient use of scientific literature including the general content and organization of *Chemical Abstracts, Biological Abstracts, Beilstein, Current Contents*, and primary literature sources; use of computerized data bases for the location of literature and patent information. Prerequisite: graduate standing. (F)

520 Health and Safety in the Laboratory 1(1-0)
Review of standard potential hazards encountered in the scientific laboratory including fire, chemical, bio- and radiation hazards. Applicable regulations associated with the handling and disposal of hazardous materials and wastes (OSHA, EPA, RCRA, state, "Right to Know," etc.). Sources of information regarding hazards (Material Safety Data Sheets, etc.). Control and prevention of spills and fires. Prerequisite: graduate standing. (S)

593 Seminar 1(1-0)
An interdisciplinary seminar on topics appropriate to the application of natural sciences. Repeatable once.(F,S)

ART (ART)

UNDERGRADUATE COURSES

100 Introduction to Art 3(3-0)
Art forms, meanings and ideas across cultures and through time. GEN.ED.IA. (F,S,SS)

101 Art History Survey I 3(3-0)
Development of style, iconography and function of art from prehistoric times to the Gothic period. GEN.ED.IA. (F,SS)

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

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

115 Two-Dimensional Design 3(1-4)
The foundations of visual form, emphasizing two-dimensional design and color theory. (F,S)

116 Three-Dimensional Design 3(1-4)
The foundation of visual form, emphasizing three-dimensional design. (F,S)

118 Art Non-Major 3(0-6)
Studio course for non-art majors interested in experiencing specific areas of art, including ceramics, drawing, painting, photography, printmaking, and sculpture. (F,S)

141 Drawing I 2(0-4)
Development of perception and technical skills in rendering. (F,S,SS)

142 Drawing II: Figure 2(0-4)
Studio class studying the human figure. (F,S,SS)

202 Art Processes 1(0-2)
Similarities and differences within visual arts. Sections in sculpture, ceramics, photography, and painting. (F,S,SS)

210 Art Career Orientation 1(1-0)
Guided development of individual job objectives. (F,S,SS)

233 Sculpture I 3(0-6)
Basic problems in sculpture relating specific concerns of visual form and process. (F,S,SS)

234 Painting I 3(0-6)
Application of materials and techniques through the use of color theories, surface awareness and compositional emphasis. Prerequisite: art core. (F,S,SS)

235 Painting II 3(0-6)
Continuation of ART 234 at higher level of technical and visual pursuit. Prerequisite: art core. (F,S,SS)

236 Watercolor Painting 3(0-6)
Water medium as a specialized approach to painting. Prerequisite: art core. (F,S,SS)

241 Drawing III 2(0-4)
Advanced course in pursuit of increased skills of perception. Prerequisites: ART 141 and 142. (F,S,SS)

242 Drawing IV: Figure 2(0-4)
Continuation of ART 142 with expanded interpretational and compositional awareness of the figure. Prerequisite: ART 142. (F,S,SS)

245 Ceramics I 3(0-6)
Essential skills in ceramic processes; emphasis on form and function as related to students' needs and creative intent. Prerequisite: art core or permission of instructor. (F,S,SS)

270 Printmaking (1-3 VAR)
Basic processes of printing from raised surfaces. Prerequisite: art core or permission of instructor. (F,S,SS)

274 Computer Imaging (1-3 VAR)
Use of microcomputers to develop visual images with commercial applications. Prerequisite: art core or permission of instructor. (F,S)

276 Photography (1-3 VAR)
Photography as an art form and as an adjunct to other art media. Prerequisite: art core or permission of instructor. (F,S,SS)

281 Introduction to Graphic Design I 3(0-6)
A basic treatment of graphic processes and techniques related to advertising design and visual communication. Prerequisite: art core or permission of instructor. (F,S)

282 Calligraphy (1-3 VAR)
Styles of hand lettering and layout of calligraphic forms. Prerequisite: art core or permission of instructor. (F,S)

291 Special Topics (1-5 VAR)
(F,S,SS)

332 Modeled Cast Sculpture 3(0-6)
Techniques of producing three-dimensional form through modeling, mold-making, and casting in a variety of materials. Prerequisite: art core or permission of instructor. (F,S,SS)

333 Sculpture II 3(0-6)
Processes for producing sculpture via the subtractive methods. Prerequisite: art core or permission of instructor. (F,S,SS)

341 Portrait Painting 1(0-2)
Representational painting using portrait models. Prerequisite: ART 235 or permission of instructor. (F,S,SS)

342 Figure Painting 1(0-2)
Composition and environmental additions to the figure. Prerequisite: ART 235 or permission of instructor. (F,S,SS)

343 Landscape Painting 1(0-2)
Perception and interpretation of nature on location. Prerequisite: ART 235 or permission of instructor. (F,S,SS)

345 Ceramics II 3(0-6)
In-depth development of specific ceramic techniques; skills and personalization of style. Prerequisite: ART 245 or permission of instructor. (F,S,SS)

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

370 Advanced Printmaking (1-3 VAR)
Basic processes of printing from raised surfaces. Prerequisite: ART 270 or permission of instructor. (F,S)

371 Intaglio (1-3 VAR)
Basic processes of printing from raised and lowered surfaces. Prerequisite: art core or permission of instructor. (F,S)

372 Lithography (1-3 VAR)
Processes of planographic printing from drawings made on stone. Prerequisite: art core or permission of instructor. (F,S)

373 Serigraphy (1-3 VAR)
Process of screen printing including preparation of photographic stencils. Prerequisite: art core or permission of instructor. (F,S)

374 Computer Imaging (1-3 VAR)
Use of computers to develop visual images for advertising and commercial application. Prerequisite: art core or permission of instructor. (F,S)

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

376 Photography (1-3 VAR)
Photography as an art form and an adjunct to other art media. Prerequisite: ART 276 or permission of instructor. (F,S)

377 Principles of Elementary Art Education 1(1-0)
Lecture course dealing with the development of visual concepts within the child. (F,S,SS)

378 Art for Young Children 2(1-2)
Materials and uses of art media and techniques for young children ages 4 to 12. (F,S,SS)

379 Principles of Secondary Art Education 2(2-0)
Theories and methods of art education beyond the elementary school. (F,S,SS)

381 Introduction to Graphic Design II 3(0-6)
Intermediate graphic design techniques including layout and camera-ready art work. Prerequisite: ART 281 or permission of instructor. (F,S,SS)

382 Illustration 2(0-4)
Images rendered in varying techniques to express ideas related to commercial application. Prerequisite: ART 381 or permission of instructor. (F,S,SS)

383 Exhibition Design 2(0-4)
Communication and design principles applied to the display of objects. Special attention to museum and gallery installations. Prerequisite: permission of instructor. (F,S,SS)

397 Studio Series 3(0-6)
Advanced studio offerings for students who have completed all other course offerings in a specific discipline. Scheduled concurrently with lower division studios. Repeatable for a maximum of 9 credits. Prerequisite: permission of instructor. (F,S,SS)

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

406 Art History: Contemporary 3(3-0)
Development of style and iconography of contemporary art since 1950. Prerequisite: permission of instructor. (F,S)

410 Art Career Orientation 1(1-0)
Evaluation of personal plans toward job objectives and portfolio presentation, including senior exhibition. Prerequisite: senior standing. (F,S,SS)

445 Glaze Calculation 1(0-2)
The simple necessities for forming glazes. Testing, firing, and practical application. Prerequisite: permission of instructor. (F,S)

446 Kiln Construction 1(0-2)
Building, designing, and construction of kilns. Prerequisite: permission of instructor. (F,S,SS)

478 Art Education Methods Application Laboratory 2(0-4).
Application of theories and methods of art education. Prerequisite: ART 377 or ART 379 or permission of instructor. (F,S,SS)

481 Advanced Graphic Design I 3(0-6)
Advanced design concepts using words, images and symbols. Prerequisite: ART 281, 381 or permission of instructor. (F,S,SS)

482 Advanced Graphic Design II 3(0-6)
A fully advanced treatment of communication graphics. Prerequisite: ART 281, 381 and 481 or permission of instructor. (F,S,SS)

491 Special Topics (1-5 VAR)
(F,S,SS)

494 Field Experience (1-5 VAR)
Off-campus individual experience providing transition from classroom instruction to on-the-job experience. Prerequisites: senior standing and permission of instructor. (F,S,SS)

495 Individual Projects (1-5 VAR)
Individual tutorial experience. Prerequisites: junior or senior standing and permission of instructor. (F,S,SS)

496 Cooperative Education Placements (1-4 VAR)
Prerequisite: permission of instructor. (F,S,SS)

497 Studio Series 3(0-6)
Advanced sections of studio offerings. Repeatable. Prerequisite: ART 397 or permission of instructor. (F,S,SS)

GRADUATE COURSES

500 Workshop (1-5 VAR)
Using materials and techniques based on advanced concepts and ideas. Prerequisite: permission of instructor and graduate standing. (F,S,SS)

591 Special Topics (1-3 VAR)
Prerequisite: permission of instructor and graduate standing. (F,S,SS)

AUTOMOTIVE PARTS AND SERVICE MANAGEMENT (APSM)

UNDERGRADUATE COURSES

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

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. (F)

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

125L Automotive Suspension and Brake Systems Lab 1(0-2)
Corequisite: APSM 125. (S)

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

135L Automotive Fuel Systems and Exhaust Emissions Systems Lab 1(0-2)
Corequisite: APSM 135. (F)

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. (F)

165 Industrial Equipment and Heavy Equipment Parts 2(2-0)
Selection of industrial equipment; use of parts catalogs and microfilm in heavy equipment selection. (F)

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

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

215L Automotive Power Trains and Drive Lines Lab 1(0-2)
Corequisite: APSM 215. (S)

225 Power Mechanics 3(3-0)
Power sources including steam, atomic, internal combustion, turbines, engines, and transmission of power. (S)

235 Machine Shop Equipment and Operation 3(2-2)
Functions of automotive machine shop equipment and basic automotive machine shop management. Prequisite: APSM 115. (S)

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. (F)

245L Automotive Electrical Systems Laboratory I 1(0-2)
Corequisite: APSM 245. (F)

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

255L Automotive Electrical Systems II Lab 1(0-2)
Corequisite: APSM 255. (S)

296 Cooperative Education Placement (1-5 VAR)
Supervised industrial field work. Prerequisite: freshman or sophomore standing, APSM major. (F,S)

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

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

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

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

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

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

491 Special Topics (1-5 VAR)
Prerequisite: permission of instructor. (F,S)

496 Cooperative Education Placement (1-5 VAR)
Supervised industrial field work. Prerequisite: junior or senior standing APSM major. (F,S)

BILINGUAL BICULTURAL EDUCATION (BBE)

UNDERGRADUATE COURSES

400 Workshop (1-3 VAR)
Development of classroom materials and curriculum in bilingual education. (*)

401 Teaching the Limited English Proficient Student 2(1.5-1.5)
Methods and techniques of teaching English to children of linguistically and culturally different backgrounds. Prerequisite: admission to teacher education program. (F,S)

403 Teaching Elementary Subjects in Bilingual Education 3(2-3)
Teaching elementary social studies, science, and health in bilingual settings. (F,S)

460 Survey of Language/Cultural Tests in Bilingual Education 2(2-0)
Introduction to current language/cultural instruments for the prospective bilingual education teacher in the elementary school. (F)

487 Student Teaching Bilingual (1-15 VAR)
For students in elementary bilingual program. Application for student teaching must be submitted on or before March 1 prior to the semester in which student teaching will commence. (S/U grades.) Prerequisite: admission to the teacher education program. (F,S)

495 Independent Study (1-2 VAR)
For the student specializing in bilingual education. (F,S)

GRADUATE COURSES

500 Workshop (1-3 VAR)
Practica in development of classroom materials/curriculum in bilingual education. Prerequisite: graduate standing. (*)

505 Education Across Cultures 2(2-0)
Analysis of multiculturalism in education and adaptation of the educational process to children of diverse cultural backgrounds. Prerequisite: graduate standing. (*)

541 Survey of Research in Bilingual Education 2(2-0)
Prerequisite: graduate standing. (*)

595 Independent Study (1-2 VAR)
For the student specializing in bilingual education. Prerequisite: graduate standing. (*)

BIOLOGY (BIOL)

UNDERGRADUATE COURSES

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. (CE,F,S)

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. (CE,F,S)

121 Environmental Conversation 4(4-0)
Basic principles of ecology and current issues relating to the use of natural resources. GEN.ED.IIIA. (CE,F,S)

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. (CE,F)

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. (CE,F,S)

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. (CE,F,S)

171 Career Planning I 1(0-4)
Identifying career options and creating a personalized educational program. (S/U grades.) (F,S)

191 Aspects of Biology 3(3-0)
Introduction to metric measurement, microscope, cell form, function, reproduction, biologically important molecules, bioenergetics, classifying and keying. GEN.ED.IIIA. Corequisite: BIOL 191L. (CE,F,S)

191L Aspects of Biology Lab 1(0-2)
GEN.ED.IIIA. Corequisite: BIOL 191. (CE,F,S)

201 Botany 3(3-0)
Morphology, anatomy, physiology, phylogeny and ecology of the major plant groups. GEN.ED.IIIA. Prerequisite: BIOL 191 or permission of instructor. Corequisite: BIOL 201L. (CE,F,S)

201L Botany Lab 2(0-4)
GEN.ED.IIIA. Corequisite: BIOL 201. (CE,F,S)

202 Zoology 3(3-0)
Anatomy, physiology, ecology and phylogeny of major and minor invertebrate and vertebrate taxa. GEN.ED.IIIA. Prerequisite: BIOL 191 or permission of instructor. Corequisite: BIOL 202L. (CE,F,S)

202L Zoology Lab 2(0-4)
GEN.ED.IIIA. Corequisite: BIOL 202. (CE,F,S)

206 Introduction to Microbiology 3(3-0)
For students of nursing and allied health. Applied aspects of medical microbiology. Corequisite: BIOL 206L. (CE,F,S)

206L Introduction to Microbiology Lab 1(0-3)
Corequisite: BIOL 206. (CE,F,S)

221 Principles of Human Anatomy and Physiology 3(3-0)
Fundamentals of anatomical structures and physiological function. GEN.ED.IIIA. Corequisite: BIOL 221L. (CE,F,S)

221L Principles of Human Anatomy and Physiology Lab 1(0-2)
GEN.ED.IIIA. Corequisite: BIOL 221. (CE,F,S)

223 Human Physiology and Anatomy I 3(3-0)
Study of human physiology and anatomy designed for students who require or desire a 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. Corequisite: BIOL 223L. (CE,F)

223L Human Physiology and Anatomy Lab I 1(0-2)
GEN.ED.IIIA. Corequisite: BIOL 223. (CE,F)

224 Human Physiology and Anatomy II 3(3-0)
A continuation of BIOL 223. Topics include the vascular system, respiration, digestion, metabolism, excretion, fluid balance, and reproduction. GEN.ED.IIIA. Corequisite: BIOL 224L. (CE,S)

224L Human Physiology and Anatomy Lab II 1(0-2)
GEN.ED.IIIA. Corequisite: BIOL 224. (CE,S)

262 Basic Horticulture 3(3-0)
Principles of horticulture science applied to the propagation and culture of plants and crops. Landscape design and improvement of plants. GEN.ED.IIIA. Prerequisite: BIOL 201 or permission of instructor. Corequisite: BIOL 262L. (CE,*)

262L Basic Horticulture Lab 1(0-2)
GEN.ED.IIIA. Corequisite: BIOL 262. (CE,*)

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. (CE,S)

291 Special Topics (1-4 VAR)
(F,S,SS)

294 Field Experience (1-4 VAR)
Volunteer work experience under program director, department coordinator and faculty supervisor through the cooperative education program. (S/U grades.) (F,S,SS)

301 General Microbiology 3(3-0)
Introduction to the bacteria and viruses, including microbial genetics and physiology. Prerequisites: BIOL 191 and CHEM 301 and 301L or permission of the instructor. Corequisite: BIOL 301L. (CE,F)

301L General Microbiology Lab 2(0-4)
Corequisite: BIOL 301. (CE,F)

302 Medical Microbiology and Immunology 3(3-0)
Introduction to immunology and survey of pathogenic bacteria, viruses and fungi. Prerequisite: BIOL 301 or permission of the instructor. Corequisite: BIOL 302L. (CE,S)

302L Medical Microbiology and Immunology Lab 2(0-4)
Corequisite: BIOL 302. (CE,S)

320 Emergency Medical Technician (EMT) Training 6(6-0)
Emergency care and transportation of the sick and injured. Field work in hospital emergency rooms and ambulance. State certification. Prerequisite: standard or advanced first aid or equivalent, or permission of instructor. (F,S)

321 Comparative Vertebrate Anatomy 3(3-0)
Comparative study of developmental anatomy of vertebrate animals. Prerequisite: BIOL 202 or permission of instructor. Corequisite: BIOL 321L. (CE,S)

321L Comparative Vertebrate Anatomy Lab 2(0-4)
Corequisite: BIOL 321. (CE,S)

324 (SPCOM 324) Anatomy of the Head, Neck and Chest 2(2-0)
Anatomical structures of the head, neck, and chest with analysis of development and function. Prerequisite: BIOL 221 or BIOL 321 or permission of instructor. Corequisite: BIOL 324L. (CE,F ##)

324L (SPCOM 324L) Anatomy of the Head, Neck, and Chest Lab 1(0-2)
Corequisite: BIOL 324. (CE,F, ##)

341 Vertebrate Physiology 3(3-0)
Basic general physiology and the functions of animal and human body systems. Prerequisites: BIOL 202, CHEM 112 and 112L or 301 and 301L. Corequisite: BIOL 341L. (CE,F)

341L Vertebrate Physiology Lab 1(0-2)
Corequisite: BIOL 341. (CE,F)

351 Genetics 3(3-0)
Mendelian genetics, cell cycles, molecular genetics, medical genetics and population genetics, with laboratory emphasis on Drosophila and man. Prerequisites: BIOL 191, 201 and 202 or permission of instructor. Corequisite: BIOL 351L. (CE,F)

351L Genetics Lab 1(0-2)
Corequisite: BIOL 351. (CE,F)

352 Evolution 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. (CE,S)

353 Ecology 4(4-0)
Interaction and interdependencies between organisms and their environment. Prerequisites: BIOL 201 and 202 or permission of instructor. Corequisite: BIOL 353L. (CE,F)

353L Ecology Field Studies 1(0-2)
Corequisite: BIOL 353. (CE,F)

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. (F)

378 Laboratory in Teaching Biology 1(0-2)
Teaching experience under supervision of instructor. (F,S)

394 Field Experience (1-4 VAR)
Volunteer work experience under program director, program coordinator, and faculty supervisor through the cooperative education program. (S/U grades.) (F,S,SS)

412 Cellular Biology 3(3-0)
Structural and functional organization of the cell, life cycles of cells, intracellular digestion, protein synthesis and cell death. Prerequisites: BIOL 201 and 202, CHEM 301 and 301L or permission of instructor. Corequisite: BIOL 412L. (CE,S)

412L Cellular Biology Lab 1(0-2)
Corequisite: BIOL 412. (CE,S)

421 Histology 2(2-0)
A microscopic study of vertebrate tissues and organs. Prerequisites: BIOL 202 and 202L or BIOL 223 and 223L or BIOL 321 and 321L. Corequisite: BIOL 421L. (CE,F #)

421L Histology Lab 2(0-4)
Corequisite: BIOL 421. (CE,F #)

426 Plant Morphology 2(2-0)
Forms, basic structures, relationships, life histories and evolutionary trends of representatives of the major autotrophic plant groups. Prerequisite: BIOL 201 or permission of instructor. Corequisite: BIOL 426L. (CE,S)

426L Plant Morphology Lab 1(0-2)
Corequisite: BIOL 426. (CE,S)

432 Embryology 2(2-0)
Development of representative vertebrate and invertebrate animals with particular emphasis on the early embryology of Branchiostoma, frog, chick, and pig. Prerequisite: BIOL 202 or permission of instructor. Corequisite: 432L. (CE,F #)

432L Embryology Lab 2(0-4)
Corequisite: BIOL 432. (CE,F #)

441 Freshwater Invertebrate Zoology 2(2-0)
Classification, phylogeny, systematics, morphology, physiology, and natural history of freshwater invertebrates inclusive of insects. Prerequisites: BIOL 191 and 202, or permission of instructor. Corequisite: BIOL 441L. (CE,S #)

441L Freshwater Invertebrate Zoology Lab 2(0-4)
Corequisite: BIOL 441. (CE,S, #)

443 Limnology 2(2-0)
Biology, chemistry and physics of lakes and rivers. Prerequisites: BIOL 191, 201 and 202 or permission of instructor. Corequisite: BIOL 443L. (CE,S ##)

443L Limnology Lab 2(0-4)
Corequisite: BIOL 443 (CE,S ##)

450 Recombinant DNA Technology 3(3-0)
Basic techniques used in rDNA technology. Cloning and expression of foreign genes in bacteria, plants and mammalian cells. Applications of rDNA technology in biology, medicine and industry. Prerequisites: BIOL 301 and 351 or 412. (CE,S)

452 Theory and Application of Electron Microscopy 2(2-0)
Theory of electron optics, image analysis and specimen preparation in biological and physical sciences. Preparation of cells and tissues for examination by transmission electron microscopy (TEM) and scanning electron microscopy (SEM). Prerequisite: permission of instructor. Corequisite: BIOL 452L (CE,S)

452L Theory and Application of Electron Microscopy Lab 2(0-4)
Corequisite: BIOL 452. (CE,S)

471 Career Planning IV 1(1-0)
Creating and securing graduate school and employment opportunities. (S/U grades.) (F)

472 Radiation Biology 3(3-0)
Nature, production and use of radioisotopes, radiological safety, effects of ionizing radiation at the subcellular, cellular and organism level, environmental radiation, and radionuclide cycling. Prerequisites: BIOL 201 and 202 CHEM 122 and 122L, or permission of instructor. Corequisite: BIOL 472L. (CE,F)

472L Radiation Biology Lab 1(0-2)
Corequisite: BIOL 472. (CE,F)

479 Ichthyology 2(2-0)
The morphology, taxonomy and ecology of fishes; an introduction to fishery biology and aquaculture. Field trips are an integral part of the course. Prerequisites: BIOL 202 and 202L. Corequisite: BIOL 479L. (CE,F)

479L Ichthyology Lab 1(0-2)
Corequisite: BIOL 479. (CE,F)

481 Entomology 2(2-0)
Structure, classification, ecology and control of insects. Prerequisite: BIOL 202 or permission of instructor. Corequisite: BIOL 481L. (CE,F)

481L Entomology Lab 1(0-2)
Corequisite: BIOL 481. (CE,F)

482 Parasitology 2(2-0)
Taxonomy, morphology, life cycles, host relationships of animal parasites. Prerequisite: BIOL 202 or permission of instructor. Corequisite: BIOL 482L. (CE,S)

482L Parasitology Lab 1(0-2)
Corequisite: BIOL 482. (CE,S)

483 Mammalogy 2(2-0)
Evolution, classification and biology of mammals; practice in identifying and preparing specimens. Prerequisite: BIOL 202. Corequisite: BIOL 483L. (CE,S ##)

483L Mammalogy Lab 1(0-2)
Corequisite: BIOL 483. (CE,S ##)

484 Ornithology 2(2-0)
Classification, life history, laboratory and field identification of birds. Prerequisite: BIOL 202. Corequisite: BIOL 484L. (CE,S #)

484L Ornithology Lab 1(0-2)
Corequisite: BIOL 484. (CE,S #)

485 Plant Taxonomy 2(2-0)
Identification of the common vascular plant families of Colorado with an emphasis on the flowering plants; study of their systematic relationships. Prerequisite: BIOL 201 or permission of instructor. Corequisite: BIOL 485L. (CE,F)

485L Plant Taxonomy Lab 2(0-4)
Corequisite: BIOL 485. (CE,F)

491 Special Topics (1-4 VAR)
(F,S,SS)

493 Seminar 1(1-0)
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 grade.) Prerequisite: permission of program chairman. (F,S)

494 Field Experience (1-4 VAR)
Volunteer work experience under program director, program coordinator and faculty supervisor through

the cooperative education program. (S/U grades.) (F,S,SS)

495 Independent Study (1-4 VAR)
Prerequisite: junior standing, biology major, permission of instructor and department. (F,S,SS)

498 Internship (5-15 VAR)
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
(S/U grades.) Prerequisite: permission of department. (F,S,SS)

GRADUATE COURSES

Admission to graduate courses requires approval of the adviser for the graduate program.

521 Histology 2(2-0)
A microscopic study of vertebrate tissues and organs. Prerequisites: BIOL 202, 202L, 223, 223L 321 and 321L. Corequisite: BIOL 521L. (F #)

521L Histology Lab 2(0-4)
Corequisite: BIOL 521. (F #)

526 Plant Morphology 2(2-0)
Forms, basic structures, relationships, life histories and evolutionary trends of representatives of the major autotrophic plant groups. Corequisite: BIOL 526L. (S)

526L Plant Morphology Lab 1(0-2)
Corequisite: BIOL 526. (S)

532 Embryology 2(2-0)
Development of representative vertebrate and invertebrate animals with particular emphasis on the early embryology of Branchiostoma, frog, chick and pig. Corequisite: BIOL 532L. (F #)

532L Embryology Lab 2(0-4)
Corequisite: BIOL 532. (F #)

540 Molecular Genetics 2(2-0)
Molecular and biochemical basis of heredity. Regulation of gene expression. Corequisite: BIOL 540L. (F)

540L Molecular Genetics Lab 1(0-2)
Corequisite: BIOL 540. (F)

541 Freshwater Invertebrate Zoology 2(2-0)
Classification, phylogeny, systematics, morphology, physiology, and natural history of freshwater invertebrates inclusive of insects. Corequisite: BIOL 541L. (* S #)

541L Freshwater Invertebrate Zoology Lab 2(0-4)
Corequisite: BIOL 541 (* S #)

543 Limnology 2(2-0)
Biology, chemistry, and physics of lakes and rivers. Corequisite: BIOL 543L. (* S ##)

543L Limnology Lab 2(0-4)
Corequisite: BIOL 543. (* S ##)

552 Theory and Application of Electron Microscopy 2(2-0)
Theory of specimen preparation, electron optics and image analysis in biological and physical sciences. Preparation of cells and tissues for examination by scanning electron microscopy (SEM) and transmission electron microscopy (TEM). Corequisite: BIOL 552L. (* S)

552L Electron Microscopy Lab 2(0-4)
Corequisite: BIOL 552. (* S)

572 Radiation Biology 3(3-0)
Nature, production and use of radioisotopes, radiological safety, effects of ionizing radiation at the subcellular, cellular and organism level, environmental radiation and radionuclide cycling. Corequisite: BIOL 572L. (F)

572L Radiation Biology Lab 1(0-2)
Corequisite: BIOL 572. (F)

579 Ichthyology 2(2-0)
The morphology, taxonomy and ecology of fishes; an introduction to fishery biology and aquaculture. Field trips are an integral part of the course. Corequisite: BIOL 579L. (F)

579L Ichthyology Lab 1(0-2)
Corequisite: BIOL 579. (F)

581 Entomology 2(2-0)
Structure, classification, ecology, and control of insects. Corequisite: BIOL 581L. (F)

581L Entomology Lab 1(0-2)
Corequisite: BIOL 581. (F)

582 Parasitology 2(2-0)
Taxonomy, morphology, life cycles, and host relationships of animal parasites. Corequisite: BIOL 582L. (S)

582L Parasitology Lab 1(0-2)
Corequisite: BIOL 582L. (S)

583 Mammalogy 2(2-0)
Evolution, classification and biology of mammals; practice in identifying and preparing specimens. Corequisite: BIOL 583L.
(S ##)

583L Mammalogy Lab (0-2)
Corequisite: BIOL 583. (S ##)

584 Ornithology 2(2-0)
Classification, life history, laboratory and field identification of birds. Corequisite: BIOL 584L. (S #)

584L Ornithology Lab 1(0-2)
Corequisite: BIOL 584. (S #)

585 Plant Taxonomy 2(2-0)
Identification of common vascular plant families of Colorado with an emphasis on the flowering plants; study of their systematic relationships. Corequisite: BIOL 585L. (F)

585L Plant Taxonomy Lab 2(0-4)
Corequisite: BIOL 585. (F)

591 Special Topics (1-4 VAR)
(F,S,SS)

595 Independent Study (1-4 VAR)
Prequisite: graduate standing, biology major, permission of instructor and department. (F,S,SS)

599 Thesis Research (1-6 VAR)
(IP and S/U grading) (F,S,SS)

BUSINESS ADMINISTRATION (BUSAD)

UNDERGRADUATE COURSES

100 Introduction to Business 3(3-0)
Introduction to the concepts and practices of business in a free enterprise system, including social responsibilities of business firms. GEN.ED.IID. (F,S)

160 Introduction to Computers and Information Systems 3(3-0)
Concepts and applications of computers as used by business and management. Emphasis is given to computer productivity software with hands-on exercises. (F,S)

220 Principles of Business Law 3(3-0)
Law as it relates to business, including contracts, sales, bailments, and personal property. (F,S)

260 Business Statistics I 3(3-0)
Statistical methods in business, including descriptive statistics, probability distributions, sampling, parameter estimation and hypothesis testing, correlation and simple linear regression, and chi square tests. Prerequisite: MATH 121. (F,S,SS)

261 Business Statistics II 3(3-0)
More advanced statistical methods for business, including analysis of variance, multiple regression, time series analysis, nonparametric methods, sample survey methods, and basic decision analysis. Prerequisite: BUSAD 260. (F,S)

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

302 Ethical Issues and the Legal Environment of Business 3(3-0)
Examination of issues addressing ethical, legal, social and environmental respsonsibilities of businesses toward government, customers, employees, and the general public. Prerequisite: junior standing. (F,S)

475 International Business 3(3-0)
Opportunities and problems of multinational firms including environmental factors and formulation of strategies and policies for all functional areas of busi-

ness. Prerequisites: FIN 330, MGMT 310 and MKTG 340. (F,S)

480 Small Business Studies 3(3-0)
Integrating prior studies in business into a realistic approach to assist in solving problems faced by selected firms in the community. Prerequisite: senior standing and permission of instructor. (F,S)

490 Special Projects (1-6 VAR)
(*)

495 Independent Study (1-3 VAR)
Prerequisites: senior standing and permission of department chair. (F,S,SS)

498 Internship (1-6 VAR)
Supervised field work in selected business, social and governmental organizations; supplemented by written reports. (S/U grades.) Prerequisite: junior or senior standing in the School of Business and permission of internship coordinator. (F,S,SS)

GRADUATE COURSES

550 Quantitative Methods in Managerial Decision Making 3(3-0)
The application of mathematical, statistical and computer techniques in managerial decision making, including investigations of problems encountered with decisions in uncertain environments and the methodology of decision analysis. Topics include decision diagramming, expected utility criteria, basics of probability manipulation, subjective probability assessment, value of information, optimization and other formal decision aids. Prerequisite: graduate standing. (S)

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, including investigation of multiple, changing and often conflicting ethical traditions. Prerequisite: graduate standing. (F)

554 Seminar in Management of Non-Profit Organizations 3(3-0)
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. Prerequisite: graduate standing. (S)

591 Special Topics 3(3-0)
(*)

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. (IP and S/U grading.) (F,S,SS)

599 Thesis Research (1-6 VAR)
(F,S,SS)

CHEMISTRY (CHEM)

UNDERGRADUATE COURSES

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. GEN.ED.IIIB. (*)

111 Principles of Chemistry 3(3-0)
Fundamental laws, theories and principles of chemical reactions. Not open to chemistry majors or minors. GEN.ED. IIIB. Corequisite: CHEM 111L. (F,S)

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

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

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

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

121L General Chemistry Lab I 1(0-2)
GEN.ED.IIIB. Corequisite: CHEM 121. (F,S)

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

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

123 General Chemistry II for Engineers 2(2-0)
Short version of General Chemistry II. Selected topics appropriate for engineering students: thermodynamics, kinetics, equilibrium, electrochemistry acids and bases. Prerequisites: CHEM 121 and 121L.

221 Inorganic Chemistry 2(2-0)
Basic principles of inorganic chemistry. The main properties, reaction chemistry, and descriptive chemistry of inorganic elements and compounds. Prerequisite: CHEM 122. (*)

221L Inorganic Chemistry Lab 1(0-3)
Inorganic laboratory techniques, inorganic qualitative analysis, synthesis and characterization. Corequisite: CHEM 221. (*)

291 Special Topics (1-5 VAR)
Prerequisite: permission of instructor. (*)

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

301L Organic Chemistry Lab I 2(0-6)
Corequisite: CHEM 301. (F,S)

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

302L Organic Chemistry Lab II 2(0-6)
Prerequisite: CHEM 301L. Corequisite: CHEM 302. (F,S)

317 Quantitative Analysis 3(3-0)
Volumetric and gravimetric analysis integrated with instrumental analysis, both optical and electrometric methods. Prerequisite: CHEM 122. Corequisite: CHEM 317L. (F)

317L Quantitative Analysis Lab 2(0-6)
Corequisite: CHEM 317. (F)

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

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

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

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. (*)

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

401L Advanced Organic Chemistry Lab 1(0-3)
Laboratory course to accompany CHEM 401. Molecular structure determination by chemical and instrumental methods. Corequisite: CHEM 401. (*)

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

411 Biochemistry I 3(3-0)
Chemistry of constituents of living matter, including proteins, carbohydrates, nucleic acids and lipids. An

introduction of enzymes and coenzymes. Prerequisite: CHEM 302 or permission of instructor. (F)

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

412L Biochemistry Lab II 1(0-2)
Corequisite: CHEM 412. (S)

419 Instrumental Analysis 3(3-0)
Emission spectrography, atomic absorption, gas chromatography spectrophotometry, x-ray fluorescence, voltammetry, NMR, IR, etc. Prerequisites: CHEM 317 and 321 or permission of instructor. Corequisite: CHEM 419L. (S)

419L Instrumental Analysis Lab 2(0-6)
Prerequisite: CHEM 317 and 321 or permission of instructor. Corequisite: CHEM 419L. (S)

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

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

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

491 Special Topics (1-5 VAR)
Prerequisite: permission of instructor. (*)

493 Seminar 1(1-0)
May be repeated once. (S/U grades.) Prerequisite: permission of department chair. (S)

495 Independent Study (1-7 VAR)
Prerequisite: permission of instructor. (*)

GRADUATE COURSES

501 Advanced Organic Chemistry 3(3-0)
Topics of advanced organic chemistry including organic reactions, mechanisms, natural products, spectroscopy, and industrial applications. Prerequisite: CHEM 302 or permission of instructor. (*)

501L Advanced Organic Chemistry Lab 1(0-3)
Molecular structure determination by chemical and instrumental methods. Advanced synthetic techniques. Corequisite or Prerequisite: CHEM 501. (*)

503 Polymer Chemistry 3(3-0)
Study of synthetic polymers including synthesis, mechanisms of formation, structure elucidation, reactivity, properties, and industrial application. Biopolymers will also be considered. Prerequisite: CHEM 302 or permission of instructor. (*)

511 Biochemistry I 3(3-0)
Chemistry of constituents of living matter, including proteins, carbohydrates, nucleic acid and lipids. An introduction to enzymes and coenzymes. Prerequisite: one year undergraduate Organic Chemistry. (F)

512 Biochemistry II 3(3-0)
Intermediary metabolism of carbohydrates, lipids and amino acids. Bioenergetics. Prerequisite: CHEM 411 or 511. (S)

512L Biochemistry II Lab 1(0-2)
Corequisite: CHEM 512. (S)

519 Instrumental Analysis 2(2-0)
Modern methods of chemical analysis, atomic absorption, gas chromatography, XRF, voltammetry, NMR, IR, etc. Prerequisite: CHEM 317 and 321 or permission of instructor. Corequisite: CHEM 519L. (S)

519L Instrumental Analysis Lab 2(0-5)
Prerequisite: CHEM 317 and 321 or permission of instructor. Corequisite: CHEM 519. (S)

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

525 Environmental Chemistry 3(3-0)
Chemical processes in the air, water and soil. Air, water soil analysis and treatment. Special emphasis upon the problems and effects of industrial and other pollution. Prerequisite: CHEM 321 or permission of instructor. (*)

529 Advanced Instrumentation 2(2-0)
Emphasizes latest developments in the design and application of instrumentation for spectrochemical analysis, electrochemical analysis and separations. Prerequisite: graduate standing. (*)

531 Radiochemistry 2(2-0)
Nuclear properties, interaction and detection of radiation, kinetics of decay, application of chemistry in industry. Prerequisite: CHEM 322 or permission of instructor. (*)

550 Industrial Chemistry 2(2-0)
The economic importance and special characteristics of the chemical industry. Feedstocks, intermediates and products of the chemical industry including thermoplastics, thermosetting plastics, paints and coatings, elastomers, fibers, surfactants, pharmaceuticals, agricultural chemicals, paper, acids, etc. Market demands, price and cost factors, scale, research, process chemistry and process control, product development. Case studies illustrating above topics. (S)

591 Special Topics (1-4 VAR)
Prerequisite: permission of instructor. (*)

595 Independent Study (1-4 VAR)
(*)

599 Thesis Research (1-6 VAR)
(IP and S/U grading) (*)

CHICANO STUDIES (CS)

UNDERGRADUATE COURSES

101 Introduction to Chicano Studies 3(3-0)
Overview of the historical, political and socio-cultural experience of the Chicano. GEN.ED.IIE. (F,S,SS)

201 Aztlan: Genesis to Today 3(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. (S)

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. (F)

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.I-J. (F)

230 Chicano: Social and Psychological Study 3(3-0)
Social and psychological forces faced in the Chicano community. GEN.ED.IIE. (SS)

291 Special Topics (1-3 VAR)
Topics in Chicano studies, identified by student/faculty interest. Prior work in Chicano studies desirable. (F,S,SS)

296 Cooperative Education Placement (1-4 VAR)
Arrangements between employers and faculty members to provide students with an opportunity to earn academic credits and monetary reimbursement for on-the-job training in their field of study. Prerequisite: permission of instructor. (F,S,SS)

303 Chicano Labor History in the United States 3(3-0)
Chicano experience in the American labor market from 1848 to the present. (F)

333 The Media and the Minority 3(3-0)
Chicano experience with media; discussion on methods and techniques of various media. (*)

335 Health in the Chicano Community 3(3-0)
Health care traditions and current health care systems in the barrio. (*)

440 History of Mexico 3(3-0)
Political, cultural and economic development of Mexico from preconquest civilization to the present. (S)

493 Seminar (1-3 VAR)
Various problems within the realm of Chicano studies; in-depth, integrated approach. Prerequisite: CS 101. (F,S,SS)

495 Independent Study (1-3 VAR)
Special topics dealing with the Chicano and society. Prerequisite: CS 101. (F,S,SS)

496 Cooperative Education Placement (1-4 VAR)
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. Prerequisite: permission of instructor. (F,S,SS)

GRADUATE COURSE

540 History of Mexico 3(3-0)
Political, cultural and economic development of Mexico from preconquest civilization to the present. Prerequisite: graduate standing. (S)

CIVIL ENGINEERING TECHNOLOGY (CET)

UNDERGRADUATE COURSES

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

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

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

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

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

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

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

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

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

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

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

296 Cooperative Education Placement (1-5 VAR)
Industrial cooperative education work experience under the director of a field supervisor and faculty member. (F,S,SS)

302 Structural Analysis 3(3-0)
Analysis of statically determinate structures. Beams, trusses, arches and frames, stress resultants, deflections, influence lines. Introduction to computer methods in structural analysis. Prerequisite: CET 206. (F)

303 Construction Contracting and Supervision 3(3-0)
Job specifications, organization, bonding, contracts, insurance, labor relations and planning and scheduling. Prerequisite: junior standing or permission of instructor. (S)

304 Construction Cost Estimating I 3(3-0)
Estimating related to building construction industry. Quantity take-off, labor and material costs, records and assembling a general contractor's bid. Prerequisite: CET 105 or permission of instructor. (F)

305 Construction Cost Estimating II 3(3-0)
Estimating relating to heavy and highway construction. Covers heavy equipment selection, use and production rates. Prerequisite: junior standing or permission of instructor. (S)

311 Advanced Surveying I 4(2-4)
Develops professional skill in surveying, triangulation, state plane coordinates and engineering astronomy. Prerequisites: CET 103 and MATH 132. (F)

312 Advanced Surveying II 4(2-4)
Highway and route surveys, horizontal and vertical curves, grades, slope staking and earthwork. Prerequisites: CET 103, MATH 132. (S)

313 Architectural Drafting I 3(0-6)
Preparation of a complete set of working drawings for a modern residential building. Prerequisite: MET 111. (F)

314 Architectural Drafting II 3(0-6)
Introduction to architectural design, design sketches and working drawings for a light commercial building. Prerequisite: CET 313. (S)

315 Soil Mechanics Technology 2(2-0)
Basic principles of soil mechanics and foundation design as they apply to design and construction. Prerequisite: CET 206. Corequisite: CET 315L. (S)

315L Soil Mechanics Technology Laboratory 1(0-2)
Basic engineering soil field lab tests using the ASTM manual as standard guide for conducting tests. Corequisite: CET 315. (S)

401 Land Surveying 3(3-0)
Boundary control, property descriptions, deeds, subdivisions, emphasizing the legal aspects of land law and surveying. Prerequisite: CET 103 or permission of instructor. (F)

402 Civil Design Projects 3(0-6)
Practical, realistic project relating to civil engineering technology is selected for development, designed and reported. Prerequisite: senior CET or permission of instructor. (F,S,SS)

404 Fundamental Structural Design 3(3-0)
Structural steel design of beams, columns, girders and trusses to AISC standards. Prerequisite: CET 302. (S)

405 Reinforced Concrete Design 3(3-0)
Design of reinforced concrete beams, columns, girders and floor systems to conform to current ACI code. Prerequisite: CET 302. (F)

411 Hydraulics 3(3-0)
Introductory course in the study of non-compressible fluids at rest and in motion, including the flow of water in pipes and open channels. Prerequisite: CET 202. (F)

412 Hydrology 3(3-0)
Hydrologic cycle including precipitation, streamflow, groundwater runoff and the preparation of hydrographs and frequency analysis. Prerequisite: CET 411. (S)

413 Indeterminate Structures 3(3-0)
Introductory course in analysis of statically indeterminate structures. The solution of continuous beams and rigid frames by moment distribution and other methods. Prerequisite: CET 302. (*)

414 Bridge Design 3(3-0)
Design of bridge slabs, beams, abutments, wingwalls, piers, and footings. Prerequisite: senior status. (*)

415 Water and Sewer System Design 3(3-0)
Fundamental principles of water supply and sewage design. Prerequisite: senior status. (*)

421 Architectural Solar Heating 3(3-0)
Passive and active solar heating of building spaces and water. Prerequisite: junior standing. (S)

491 Special Topics (1-6 VAR)
Prerequisite: permission of instructor. (*)

496 Cooperative Education Placement (1-5 VAR)
Industrial cooperative education work experience under the direction of a field supervisor and faculty member. Prerequisite: junior or senior standing. (F,S,SS)

COMPUTER SCIENCE TECHNOLOGY (CST)

UNDERGRADUATE COURSES

101 Computers and You 3(3-0)
Computers, information and technological change. The information revolution and its impact. Orientation to computer systems and their objectives, influences on society, common applications - word processing, data base, spreadsheets, and tomorrow's outlook. GEN.ED. IIIC. (non-majors only). (F,S,SS)

102 Programming w/BASIC 3(3-0)
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. GEN.ED.IIIC. (non-majors only). (F,S,SS)

105 (EN 105) FORTRAN 3(3-0)
Introducing FORTRAN-77 programming with algebraic problem solving for scientific, engineering, technology majors. Covering computer systems, language specifications, functions, arrays, character strings, subroutines, files. Corequisite: MATH 121 or equivalent (for non-majors). (F,S,SS)

115 Operating Systems I 1(1-0)
Introduction to the external command structure needed to utilize the current USC computer system, including file handling, editors, systems utilities and system command files. Corequisite: CST 121. (F,S)

116 Structured Programming Concepts 1(1-0)
Practical concepts of structured programming design, including functional modules, program debugging and testing tools, algorithm selection and development, structured programming concepts and style, and logic structures. Corequisite: CST 122. (F,S)

121 Computer Science I 4(4-0)
A first course in computer science for majors and minors. Teaches problem-solving heuristics, algorithm development using top-down design and good programming concurrently with the complete syntax and semantics of the Pascal language. Corequisite-:(for majors) CST 115. (F,S,SS)

122 Computer Science II 4(4-0)
A continuation of CST 121 for computer science majors and
minors. Programming style, debugging, testing and algorithm development and analysis, including sorting, searching, linked lists, strings, recursion, queues, stacks, binary trees. Prerequisite: CST 121. Corequisite: CST 116. (F,S)

200 Micro-Computer Software Applications 2(2-0)
Utilization of microcomputers for common applications emphasizing the most current software available in an MS-DOS environment, including word processing, data bases, spreadsheets, operating systems and graphics. (non-majors only). (*)

200L Micro-Computer Software Applications Lab 1(0-2)
Hands-on microcomputer laboratory instruction. Use of nationally prominent software packages will be used to solve problem sets. Corequisite: CST 200. (*)

205 FORTRAN 77 for Engineers and Scientists 3(3-0)
A second course in a computer language aimed at problems requiring algebra and trigonometric based solutions; includes structured programming, strings, functions, subroutines, formats, arrays, implied DO-loops, and numerical precision. Prerequisite: CST 122 or 132 or Corequisite: MATH 126. (F,S)

210 Introduction to Assembler Language 3(3-0)
Introductory concepts of assembler programming for instruction formats, I/O definition, arithmetic operations and output editing, and integer data handling. Prerequisite: CST 121. (F,S)

211 Unix/C 3(3-0)
A comprehensive study of the C-Language and Unix operating system, emphasizing the use of each in modern software design and implementation. Prerequisite: CST 121. (S)

212 PL/1 Programming 3(3-0)
Problem solving and structured programming techniques are presented using PL/1 as a vehicle, including structured pseudocode, text processing problems, and PL/1 syntax, and procedures. Prerequisite: CST 121. (*)

225 Introduction to Pascal Programming 3(3-0)
An introductory course in Pascal programming for non-majors needing a course emphasizing modern programming methods; includes pseudocode, computation, character manipulation, top-down structured programming, sequential files, subroutines, functions, sorting and searching. Prerequisite: MATH 121 or MATH 132. (S)

230 COBOL Programming I 3(3-0)
ANSI COBOL programming principles for basic business applications, including general program development, coding, execution, and debugging. Prerequisite: CST 122 or BUSAD 160. (F)

240 Systems Analysis and Design I 3(3-0)
Systems analysis and design process, actual systems design layout work and integrated business systems analysis. Prerequisites: CST 205, 210 or 230, or EN 105. (F)

270 File Processing 3(3-0)
Foundation for applications of data structures and file processing techniques, including sequential access, data structures, random access storage and file input and output. Prerequisite: CST 122. (S)

290 Special Projects (1-5 VAR)
Selected projects in computer programming in cooperation and interaction with local business and industry. Maintaining industrial standards in programming and documentation mandatory. Prerequisite: sophomore standing and permission of instructor. (*)

291 Special Topics (1-5 VAR)
Prerequisites: CST 122 and one programming language. (*)

296 Cooperative Education Placement (1-5 VAR)
Industrial cooperative education work experience under the direction of a field supervisor and faculty member. Prerequisite: freshman or sophomore standing. (F,S,SS)

316 Operating Systems II 3(3-0)
Theory and design of supervisors, concepts of job tasks and data management, scheduling, queuing, multi-programming. Prerequisites: CST 122 and 210. (S)

321 Advanced Data Structures 3(3-0)
A continuation of CST 122, including trees and graphs and their applications, algorithms for sorting and searching of advanced data structures. Prerequisite: CST 270 and MATH 245. (S)

325 Software Engineering and Ada Programming I 3(3-0)
Major features of the ADA programming language and their relevance to software engineering. Prerequisite: CST 270 or permission of instructor. (F)

330 Programming Languages 3(3-0)
A LISP-based course exploring fundamental issues of programming language design, including 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. Prerequisite: CST 270. (F)

331 Professional Programming - COBOL 3(3-0)
ANSI COBOL programming for business applications, including magnetic tape, sequential disk, direct access and indexed sequential access methods, language concepts for sort and report generator. Prerequisites: CST 230 and 270. (S)

341 Systems Design and Analysis II 3(3-0)
Major projects applying principles of design and analysis as developed in CST 240, emphasis on design and implementation of computer-based systems. Prerequisite: CST 240. (S)

350 Data Base Systems 3(3-0)
Design, implementation and use of data base management systems; comparison of available software packages; concepts of query languages and security considerations. Laboratory assignments utilize a relational data base system. Prerequisite: CST 122 or equivalent. (F)

360 Digital Computer Concepts 3(3-0)
Review of assembly language concepts, digital logic design techniques, design of finite state automata, design and operation of the arithmetic/logic unit and the microprogrammable control unit. Not available for students in CST Option 3. Prerequisites: MATH 245, CST 210, and junior standing. (F)

380 Data Communications Systems 3(3-0)
The fundamentals of data communications explained using the ISO Open Systems interconnection reference model, including communication media, hardware, message flow with protocols, networking, and analysis and management of data communication systems. Prerequisite: CST 360. (S)

405 Computer Graphics I 3(3-0)
Introduction to the theory and applications of computer graphics, including mathematical principles. DISSPLA, hidden line problem and special projects. Graphics images will be produced in two and three dimensional representations. Prerequisites: CST 205 and MATH 126 or permission of instructor. (F)

418 Compiler Construction I 3(3-0)
A project-oriented course in which students write the Lexical analyzer of a simplified PASCAL compiler. Prerequisite: CST 321. (S)

420 Artificial Intelligence 3(3-0)
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. Prerequisite: CST 321 and 330. (S)

425 Software Engineering and Ada Programming II 3(3-0)
A continuation of CST 325 emphasizing a major software project. Prerequisite: CST 325. (*)

450 Advanced Database Structures 3(3-0)
Investigation and study of data modeling, system development and data technology, including database engineering and design, hardware, student projects, administration and selection. Prerequisite: CST 350 or permission of instructor. (S)

460 Computer Systems Architecture I 3(3-0)
Architecture of modern computers. Arithmetic and logic units, microprogrammable control units, architecture of commercial, micro- , mini-, and maxicomputers, parallel and pipeline processing. Prerequisite: CST 360 and senior standing. (#)

464 Computer Systems Fundamentals I 3(3-0)
Exploration and comparison of common CPU systems (microcomputers), particularly instruction sets, solutions to computer problems, elementary software, and methods of programming common interfaces. Prerequisite: CST 210, 360 or equivalent. Corequisite: CST 464L. (F)

464L Computer Systems Fundamentals Lab I 1(0-2)
Laboratory exercises addressing operating systems, machine language and assembly language of currently manufactured microprocessor computers. Corequisite: CST 464. (F)

490 Special Topics (1-5 VAR)
Prerequisite: permission of department head. (F,S,SS)

491 Special Topics (1-5 VAR)
May be repeated for credit. Prerequisite: junior or senior standing. (F,S,SS)

496 Cooperative Education Placement (1-5 VAR)
Industrial cooperative education work experience under the direction of a field supervisor and faculty member. Prerequisite: junior or senior standing. (F,S,SS)

ECONOMICS (ECON)

UNDERGRADUATE COURSES

101 Introduction to Economics 3(3-0)
Broad aspects of today's economy and problems of general interest. GEN.ED.IID. (F,S)

201 Principles of Macroeconomics 3(3-0)
Study of fundamental principles with emphasis on macroeconomics. GEN.ED.IID. (F,S,SS)

202 Principles of Microeconomics 3(3-0)
Study of fundamental principles with emphasis on microeconomics. GEN.ED.IID. Prerequisite: ECON 201. (F,S,SS)

301 Intermediate Macroeconomics 3(3-0)
Economic theory and policy using the national income approach to explain income, employment and growth. Prerequisite: ECON 202. (F)

302 Intermediate Microeconomics 3(3-0)
Study of price system and theory of the firm under varying market structures. Prerequisite: ECON 202. (S)

307 Current Economic Issues 3(3-0)
Critical survey of significant problems of current economic policy and application of economic analysis to important social issues. Prerequisite: ECON 101 or 202. (S)

310 Money and Banking 3(3-0)
Study of monetary economics and it's application in macroeconomic theory. Prerequisite: ECON 202. (F,S,SS)

330 Public Finance 3(3-0)
Principles and issues of government revenue and expenditure policies. Prerequisite: ECON 202. (S)

340 Comparative Economic Systems 3(3-0)
Contending ideologies which shape economic systems in determining what, how, for whom and the rate of economic growth. Prerequisite: ECON 202. (F)

402 Economics of Labor 3(3-0)
The study of labor supply and demand, impact of unions, wage determinators, distribution of income and productivity. Prerequisite: ECON 202. (F)

410 Managerial Economics 3(3-0)
Practical application of micro-economic principles to managerial decision making. Prerequisite: ECON 202 and senior standing. (F,S,SS)

480 Small Business Studies 3(3-0)
Integrating prior studies in business into a realistic approach to assist in solving problems faced by selected firms in the community. Prerequisite: senior standing and permission of instructor. (F,S)

484 Senior Studies 3(3-0)
A discipline oriented integration of prior course work into a special project, research paper and/or activity that demonstrates proficiency in the major. Senior standing in the School of Business and completion of all core courses. (S)

490 Special Projects (1-6 VAR) (*)

491 Special Topics (1-3 VAR)
Prerequisite: permission of instructor. (*)

495 Independent Study (1-3 VAR)
Prerequisite: senior standing in School of Business and permission of department chair. (F,S,SS)

498 Internship (1-6 VAR)
Supervised field work in selected business, social, and governmental organizations; supplemented by written reports. (S/U grades.) Prerequisite: junior or senior standing in School of Business and permission of Internship Coordinator. (F,S,SS)

GRADUATE COURSES

501 Managerial Economics 3(3-0)
The application of analytical economic decision-making methods to managerial problems involving productivity, supply and demand, cost, price, profit and volume. Prerequisite: graduate standing. (F)

591 Special Topics 3(3-0)
Prerequisite: graduate standing. (*)

592 Research (1-6 VAR)
The student will work under the close supervision of graduate faculty member in basic or applied research resulting in a report of high academic quality. (IP and S/U grading) (F,S,SS)

EDUCATION (ED)

UNDERGRADUATE COURSES

102 Teaching as a Career 1(1-1)
Orientation to teaching and teacher education. Class sessions and classroom observation required. Not required for teacher certification. (F,S)

110 Teacher Aid Field Experience 1(0-3)
Work in a public school as teacher aid under the supervision of a classroom teacher and an education department instructor. Prerequisite: initial testing in basic competencies. (*)

115 Word Processing Lab 1(0-2)
Development of word processing skills on the Apple Computer. (F,S)

202 Foundation of Education 3(3-0)
Historical, philosophical and sociological dimensions of education including legal and financial challenges associated with the institution of education. (F,S,SS)

210 Human Growth and Development for Educators 3(3-0)
Physical, mental, social and emotional growth of the individual; provides perspective on the elementary and secondary school student as needed by teachers. Prerequisite: admission to teacher education program. (F,S,SS)

325 Early Field Experience with the Atypical Learner (1-3 VAR)
Development and implementation of principles in teaching atypical learners in a tutorial situation. Prerequisite: admission to teacher education. (*)

400 Workshop (1-3 VAR)
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. Prerequisite: admission to teacher education program or permission of instructor. (*)

412 Teaching the Special Child 3(2.5-1.5)
Includes history, philosophy and legislation for special education, the nature and definitions of exceptionalities and child abuse; focus is on meeting the instructional and social needs of special children in elementary classrooms. Field experience required. Prerequisite: admission to teacher education program. (F,S)

413 Teaching Social Studies 2(1.5-1.5)
Methods of teaching social studies in the elementary school. Part of elementary field experience block. Prerequisite: admission to teacher education program. (F,S)

414 Teaching Elementary Science and Health 2(1.5-1.5)
Methods of teaching health and science in the elementary school. Part of elementary field experience

block. Prerequisite: admission to teacher education program. (F,S)

415 Kindergarten Education 2(1.5-1.5)
Philosophy and methods of teaching kindergarten. Part of elementary field experience block. Prerequisite: admission to teacher education program. (*)

417 Teaching Mathematics in Elementary School 2(1.5-1.5)
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. Prerequisite: MATH 361, admission to teacher education program. (F,S)

420 Microcomputer Applications in Education 2(1-2)
Current microcomputer application in the classroom and principles of educational software. Prerequisite: admission to teacher education program. (F)

435 Classroom Management 3(2-3)
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. Prerequisite: admission to teacher education program. (F,S)

460 Educational Media and Technology 3(2-3)
Preparation and use of audiovisual materials, equipment and use of computers in instruction. Field experience required. Prerequisite: Admission to teacher education program. (F,S)

461 Atypical Students in the Secondary School 3(2-2)
Individual differences as they affect the learning process. Instructional alternatives for meeting individual needs including handicapped and gifted. Emphasis on mainstreamed students. Field experience required. Prerequisite: admission to teacher education program. (F,S)

487 Student Teaching Elementary (1-15 VAR)
Elementary level. Application must be submitted on or before March 1 prior to the semester in which student teaching will commence. (S/U grades.) Prerequisite: approved application for student teaching. (F,S)

488 Student Teaching Secondary (1-15 VAR)
Secondary level. Application must be submitted on or before March 1 prior to the semester in which student teaching will commence. (S/U grades.) Prerequisite: approved application for student teaching. (F,S)

489 Student Teaching K-12 (1-15 VAR)
K-12 level. Available for art, music and physical education majors. Application must be submitted on or before March 1 prior to the semester in which student teaching will commence. (S/U grades.) Prerequisite: approved application for student teaching. (F,S)

491 Special Topics (1-3 VAR) (*)

494 Field Experience (1-10 VAR)
Field experience in an educational setting. Not applicable to teacher certification. (S/U grades.) (*)

495 Independent Study (1-3 VAR) (*)

GRADUATE COURSES

500 Workshop (1-3 VAR)
Designed for activity-oriented experiences to be conducted in short summer sessions. Each workshop has a subtitle and no subtitle may be repeated for credit. Prerequisite: graduate standing. (*)

501 Research 2(2-0)
Skills and techniques for locating, analyzing and evaluating educational research. Prerequisite: graduate standing. (*)

505 Education Across Cultures 2(2-0)
Analysis of multiculturalism and how the educational process can be adapted to children of diverse cultural backgrounds. Prerequisite: graduate standing. (*)

512 Teaching the Special Child 3(2.5-1.5)
Includes history, philosophy and legislation for special education, the nature of and definitions for exceptionalities and child abuse; focus on meeting the instructional and social needs of special children in elementary classrooms. Special project required. Prerequisite: graduate standing plus PSYCH 351 or ED 555. (F,S)

520 Microcomputer Applications in Education 2(1-2)
Current microcomputer applications in the classroom and principles of evaluating education software. Prerequisite: graduate standing. (F)

522 Issues in Education 2(2-0)
Contemporary problems in education, their historical development and philosophical implications. Prerequisite: graduate standing. (*)

524 Advanced Techniques of Teaching Elementary Social Studies 2(2-0)
Analysis of techniques for conceptual approaches to teaching socialization skills, critical thinking and inquiry skills; and helping children develop healthy attitudes and values. Prerequisite: graduate standing. (*)

525 Advanced Techniques of Teaching Elementary Science and Health 2(2-0)
Emphasis on the newest concepts, techniques and materials for teaching elementary school science and health. Prerequisite: graduate standing. (*)

526 School Health Curriculum 2(2-0)
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. Prerequisite: graduate standing. (*)

530 Instructional Programming 2(2-0)
Principles of curriculum design, educational goals, instructional objectives, and developing long, middle and short-range plans. For elementary and secondary teachers. Prerequisite: graduate standing. (*)

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; and handling disruption and behavior problems. (*)

549 Child Advocacy 3(2-3)
Research study of international child advocacy programs, national movement and local adaptations. Requires the analysis of a model operating agency or institution of student's choice. Prerequisite: graduate standing. (*)

555 Foundations of Learning Disorders 3(3-0)
Exceptionalities: emphasis on high-incidence handicaps. Includes recent legislation and identification, referral, staffing and placement procedures. Major intervention strategies examined. Prerequisite: graduate standing. (*)

560 Teacher Effectiveness Training (2-3 VAR)
Stresses skill-building in classroom interaction between teacher and students. Skills include active listening, "I" messages and problem solving. Prerequisite: graduate standing. (*)

561 Atypical Students in the Secondary School 3(2-2)
Individual differences as they affect the learning process. Instructional alternatives for meeting individual needs including handicapped and gifted. Emphasis on mainstreamed students. Graduate project required. Prerequisites: graduate standing plus PSYCH 351 or ED 555. (F,S)

591 Special Topics (1-3)
Prerequisite: graduate standing. (*)

592 Research (1-3 VAR)
Prerequisites: graduate standing and permission of graduate adviser (*)

595 Independent Study (1-2 VAR)
Prerequisite: graduate standing and permission of graduate adviser. (*)

599 Thesis Research (1-6 VAR)
(*)

ELECTRONICS ENGINEERING TECHNOLOGY (EET)

UNDERGRADUATE COURSES

110 Computer Applications 2(2-0)
Introduction to computer applications in engineering technology. MS-DOS operations, word processing, spreadsheet applications and computer-aided drafting. Corequisite: EET 110L. (F,S,CE)

110L Computer Applications Lab 1(0-2)
Work with the computer under the direct supervision of a faculty member. Corequisite: EET 110. (F,S, CE)

121 DC Circuits 4(4-0)
DC circuits, energy, power, resistance, capacitance, inductance, electro-magnetism, loop and nodal network analysis, and Thevenin's and Norton's theorems. Corequisite: MATH 131. (F,S, CE)

121L Circuits I Lab 1(0-2)
Building and testing basic electrical circuits. Corequisite: EET 121. (F,S)

122 AC Circuits 4(4-0)
AC circuit analysis, RMS values, impedance, admittance, phasors, network theorems, resonance transformers, polyphase systems, power, and power factor. Prerequisite: EET 121. Corequisite: MATH 132. (F,S, CE)

122L Circuits II Lab 1(0-2)
Verifying basic ac circuit operation and learning the use of the oscilloscope. Corequisite: EET 122. (F,S, CE)

211 Electronics I 3(3-0)
Semiconductor physics, diodes, analysis and design of transistor circuits, biasing, equivalent circuits, multi-state amplifiers, frequency effects, field effect transistors. Corequisites: EET 122,122L and MATH 132. (F, CE)

211L Electronics I Lab 1(0-2)
Building and testing basic electronic circuits using diodes and transistors. Corequisite: EET 211. (F, CE)

212 Electronics II 3(3-0)
Feedback effects, oscillators, frequency spectra, harmonics. Transistor and diode switches. Linear waveshaping, multivibrator, Schmitt trigger, and time base circuits. Prerequisites: EET 211, 211L. Corequisite: MATH 231. (S, CE)

212L Electronics II Lab 1(0-2)
Building and testing advanced electronic circuits. Corequisite: EET 212. (S, CE)

250 Basic Electronic Principles 3(3-0)
Fundamentals of dc and ac electric circuits, and an introduction to electronics. For non-majors. Corequisite: MATH 132. (S, CE)

250L Basic Electronic Principles Lab 1(0-2)
The use of basic electronic instruments in the measure of electrical quantities. Corequisite: EET 250. (S, CE)

254 Introduction to Digital Systems 3(3-0)
Digital techniques, including binary codes, Boolean Algebra, gates, flip-flops, counters, shift registers and arithmetic operations. Prerequisite: EET 121 or 250. (F, CE)

254L Digital Systems Lab 1(0-2)
Building and testing basic digital circuits. Corequisite: EET 254. (F, CE)

255 Introduction to Microprocessors 3(3-0)
Analysis of microcomputer systems including both hardware and software considerations, with emphasis on machine language programming. Includes microcomputer design project. Prerequisite: EET 254. (S, CE)

255L Microprocessors Lab 1(0-2)
Writing assembly language programs and designing, building, and testing a complete microprocessor system. Corequisite: EET 255. (S, CE)

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

311 Control Systems I 3(3-0)
System representation, Laplace transforms, solution of differential equations, block diagrams, transfer functions, basic control system operation, system performance, Bode plots. Prerequisite: MATH 232, junior standing, Corequisite: EET 351. (S, CE)

311L Control Systems I Lab 1(0-2)
Verifying the Laplace transform and analyzing various closed loop control systems. Corequisite: EET 311. (S, CE)

321 Solid State Theory 3(3-0)
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. Prerequisites: EET 212, MATH 232, PHYS 202/202L. (*, CE)

350 Electric Motors and Controls 3(3-0)
Analysis and operation of AC and DC motors and generators, including both single-phase and three-phase AC machines. Prerequisite: EET 122 or 250. (F, CE)

350L Motors Lab 1(0-2)
Verifying the operation of both ac and dc machines. Corequisite: EET 350. (F, CE)

351 Linear Integrated Circuits 3(3-0)
Applications of linear integrated circuits such as operational amplifiers, power supply regulators and active filters. Includes instrumentation amplifiers, comparators and timers. Prerequisite: EET 212. (F, CE)

351L Integrated Circuits Lab 1(0-2)
Designing, building, and testing circuits using operational amplifiers, comparators, and timers. Corequisite: EET 351. (F, CE)

353 Software Development 2(2-0)
Electronics technology applications programming using structured programming techniques with the C language. Prerequisite: CST 225 or equivalent. (F, CE)

353L Software Development Lab 1(0-2)
Writing, debugging and running C language programs. Corequisite: EET 353. (F, CE)

354 Computer Architecture Design 3(3-0)
Computer architecture, with emphasis on operation and design of both microprogrammed and randomly designed control units. Students must complete an extensive laboratory project which requires the design, instruction and testing of an operational computer. Prerequisites: EET 211, 255, and CST 225 or equivalent. Corequisite: EET 354L. (F, CE)

354L Computer Architecture Lab 1(0-2)
Designing, building, and testing simplified computers from discrete integrated circuits. Corequisite: EET 354. (F, CE)

355 Advanced Microcomputer Systems 3(3-0)
Advance 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. Prerequisites: EET 255 and CST 225 or equivalent. Corequisite: EET 355L. (S, CE)

355L Microcomputer Systems Lab 1(0-2)
Practicing advanced programming techniques and assembly language programming for 16-bit processors. Corequisites: EET, 355. (S, CE)

356 Advanced Integrated Circuits 3(3-0)
Analysis of the inter-connection of integrated circuits into systems. Also covers design principles of systems. Prerequisite: EET 351. (S, CE)

356L Advanced Integrated Circuits Lab 1(0-2)
Designing, building, and testing circuits and systems using advanced integrated circuits. Corequisite: EET 356. (S, CE)

393 Seminar 1(1-0)
Introduction to the senior projects course in which the student formulates the project proposal and makes both a written and oral presentation of the proposal. Prerequisite: junior standing. (CE,S)

412 Communication Systems 3(3-0)
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. Prerequisites: EET 212 and MATH 232. (CE,S)

412L Communication Systems Lab 1(0-2)
A laboratory course in which the student experimentally verifies various communication principles and systems. Corequisite: EET 412. (CE,S)

455 Control Systems II 3(3-0)
Block diagrams, transfer functions, practical systems, the Z transform, digital systems, frequency response techniques, Bode plots as applied to control systems. Includes robots. Prerequisite: EET 311. (CE,F)

455L Control Systems II Lab 1(0-2)
Verifying the compensation of analog control systems and building, and testing digital control systems. Corequisite: EET 455. (CE,F)

456 Design Projects 1(1-0)
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. Prerequisites: EET 393 and senior standing. (CE,F)

456L Design Projects Lab 1(0-2)
Building, and testing the project developed in EET 393. Oral and written reports are required. Corequisite: EET 456. (CE,F)

457 Computer Interface Design 2(2-0)
Design and implementation of computer interfaces to input-output devices and other systems. Prerequisite: EET 255 and EET 353. (CE,*)

457L Interface Lab 1(0-2)
Designing, building, and testing a variety of interfaces to operate with various computers. Corequisite: EET 457. (CE,*)

458 Computer Communications 3(3-0)
Computer communication techniques and computer networks including topics such as topology, protocols, routing and reliability analysis. Prerequisite: EET 255. (CE,*)

491 Special Topics (1-5 VAR)
Topics in electronics not now included in other courses. Prerequisite: permission of department chair. (*)

493 Seminar (1-5 VAR)
Participation by electronics students and presentation of recent developments in the electronics field. Prerequisite: qualified junior or senior students. (*)

495 Independent Study (1-5 VAR)
Prerequisite: permission of department chair. (F,S,SS)

496 Cooperative Education Placement (1-5 VAR)
Industrial cooperative education work experience under direction of field supervisor and faculty member. Prerequisite: junior or senior standing. (F,S,SS)

ENGINEERING

UNDERGRADUATE COURSES

103 Introduction to Engineering 2(2-0)
Introduction to engineering curriculum and careers. Problem solving and creativity. Technological, social and ethical problems and the contributions of engineering to their solution. (S)

105 (CST 105) FORTRAN 3(3-0)
Introducing FORTRAN-77 programming with algebraic problem solving for science, engineering and technology majors. Covering computer systems, language specifications, function, arrays, character strings, subroutines, files. Corequisites: MATH 121, 124 or 131 (F,S)

107 Engineering Graphics 2(0-4)
Introduction to the preparation of engineering drawings using freehand sketching and computer graphics software. (S)

211 Engineering Mechanics I 3(3-0)
Introduction to the relationship between forces and moments acting on an object that is in equilibrium (statics). Prerequisite: PHYS 221 or permission of instructor (F)

212 Engineering Mechanics II 3(3-0)
Introduction to the relationship between forces and moments acting on rigid objects and the motion of objects (dynamics). Prerequisite: EN 211 (S)

231 Circuit Analysis I 4(4-0)
Circuit concepts, conventions and network equations. Initial conditions and classical methods of obtaining transient and steady-state solutions. Prerequisite: MATH 224 Corequisites: EN 231L, PHYS 222 (F)

231L Circuit Analysis I Lab 1(0-2)
Observation and analysis of electrical circuits involving resistance, inductance and capacitance. Corequisite: EN 231 (F)

232 Circuit Analysis II 4(4-0)
Continuation of EN 231 including waveform synthesis, network theorems, Fourier series, pole-zero diagrams and two-port network theory. Introduction to Laplace transforms. Prerequisite: EN 231 (S)

245 Pascal Computer Programming 2(2-0)
Computer programming using Pascal language, application in engineering and science areas, practical programming exercises (*)

270 Material and Energy Balances 3(3-0)
Material and energy balances with or without chemical reactions in chemical engineering applications. Prerequisites: CHEM 121, PHYS 221 and MATH 126 (*)

291 Special Topics (1-5 VAR)
Selected topics in engineering. (*)

296 Cooperative Education Placement (1-5 VAR)
Work experience under direction of a field supervisor and a faculty member. Prerequisite: freshman or sophomore standing (F,S)

301 Fluid Mechanics 4(4-0)
Introduction to the relationship between the forces applied to a fluid, the motion of the fluid, and the mechanical properties of the fluid. Prerequisite: EN 212 (*)

312 Materials Science 2(2-0)
The nature of engineering materials, emphasizing the relationship between macroscopic and atomic and microscopic structures. Prerequisites: PHYS 221, CHEM 121 Corequisite: EN 312L (*)

312L Materials Science Lab 1(0-2)
Experimental studies of material properties, characteristics and microstructures. Effects of plastic deformation and heat treatment. Corequisite: EN 312 (*)

315 Introduction to Industrial and Systems Engineering 3(3-0)
Engineering viewpoints of the principles of organization for production and the operations applicable to accomplishing organizational responsibilities. Prerequisite: EN 105. Corequisite: MATH 224 (F)

321 Thermodynamics I 3(3-0)
Introduction to energy equations and flows, entropy, kinetic theory and statistical mechanics. Prerequisite: PHYS 221 (S)

322 Thermodynamics II 4(4-0)
Application of laws of thermodynamics to chemically reacting thermodynamic systems, vapor cycles, gas engine cycles, propulsion systems, refrigeration and air-water vapor mixtures. Prerequisite: EN 321 (*)

324 Mechanics of Materials 3(3-0)
Stress-strain relationships, fundamentals of elasticity, torsional loading, flexural loading, combined stresses. Prerequisite: EN 211 Corequisite: EN 324L (S)

324L Mechanics of Materials Lab 1(0-2)
Measurements of stress-strain relationships and other destructive and non-destructive testing. Prerequisite: EN 211 Corequisite: EN 324 (S)

333 Computer Components Engineering 3(3-0)
Engineering design and fabrication of silicon-based, bipolar, MOS microcircuits and other computer elements. Microcircuit design and layout. Prerequisites: EN 231 and 342 (*)

340 Human Performance Engineering 4(3-2)
Principles and techniques of methods analysis and work measurement, human performance in man-machine systems. Prerequisites: EN 315, PSYCH 101 and BIOL 221 (S)

341 Engineering Economy 3(3-0)
Economic and financial aspects of investments in engineering projects. Prerequisite: junior standing (*)

342 Engineering of Manufacturing Processes 5(3-4)
Materials and processes for manufacturing including machining, casting, and forming processes: design, modeling and control. Prerequisites: EN 107, CHEM 121 and PHYS 221 (S)

343 Industrial Engineering Economy 3(3-0)
Modeling, analysis and decision making involving time value of money, depreciation, income taxes and replacement analysis. Corequisites: EN 315 or permission of instructor (F)

351 Heat Transfer 3(3-0)
Steady and unsteady conduction of heat. Convection heat transfer in boundary layer and duct flows. Forced and free convection. Thermal radiation. Prerequisite: EN 321 (*)

421 Structural Analysis 3(3-0)
Analysis of indeterminate beams, frames and trusses by methods of moment of distribution, slope deflection, real work, virtual work and least work. Prerequisite: EN 324 (*)

435 Microprocessor Control Systems 3(2-2)
Components of a microprocessor control system, digital processing, survey of state-of-the-art microprocessor control systems. Prerequisite: EN 333 (*)

436 Computer Systems Engineering 3(3-0)
Analysis, mathematical modeling and design of integrated control and physical systems used in product and process design engineering. Prerequisites: EN 333 and MATH 337 (*)

440 Safety Engineering 4(3-2)
Industrial safety using a systems approach: fault tree, risk and decision analysis. Environmental hazards and accident causes, costs and prevention. Prerequisites: EN 340, 343 and 456 (F)

442 Manufacturing Processes II 3(3-0)
Materials and processes for manufacturing including sheet metal forming, welding, machining and advanced manufacturing processes. Prerequisite: EN 342 (*)

443 Quality Control and Reliability 3(3-0)
Control charts, acceptance sampling, rectifying inspection, standard sampling plans. Failure time distribution models, reliability estimation, hazard function, reliability of systems. Prerequisites: EN 105 and 456 (F)

456 Applied Statistics I 3(3-0)
Probability space, discrete and continuous random variables: distributions, mathematical expectation, sampling, statistical inference. Bayesian rule and linear regression. Prerequisites: MATH 224 and 350 (F,S)

461 Engineering Hydraulics 3(3-0)
Steady and unsteady flow in pipes, open-channel flow, hydraulic measurements, critical depth and hydraulic jump, and design of spillways. Prerequisite: EN 301 or permission of instructor (*)

465 Stochastic Systems Engineering 3(3-0)
Analysis and design of systems containing elements of uncertainty in demand and performance capability. Time varying measures and approximations are emphasized. Prerequisites: MATH 350 and EN 456 (F)

471 Engineering Operations Research 3(3-0)
Techniques for analysis and solution of problems in industrial and management systems. Linear and non-linear programming, network analysis techniques, and dynamic programming. Prerequisites: EN 456, MATH 337

473 Production and Computer-Aided Engineering 5(3-4)
Engineering design, modeling and applications in production: automation, flowlines, robotics, numerical control, computer usage in manufacturing. Simulation and validation. Prerequisites: EN 340 and 342 (F)

475 Engineering Systems Analysis and Design 3(3-0)
Application of industrial and systems engineering techniques to problems related to an organization's physical resources. Facilities planning and plant layout, material handling, site selection and facilities location. Prerequisites: EN 471 and 473 (S)

477 Operations Planning and Control 3(3-0)
Techniques for analysis and management of manufacturing operations and production with emphasis on inventory systems and forecasting. Prerequisites: EN 471 and 473 (S)

488 Industrial Engineering Design Projects (1-5 VAR)
Application of industrial engineering principles to a design project. Corequisites: EN 475 and 477 (S)

491 Special Topics (1-5 VAR)
Prerequisite: junior standing (*)

495 Independent Study (1-5 VAR)
Prerequisite: junior standing (*)

496 Cooperative Education Placement (1-5 VAR)
Work experience under direction of a field supervisor and a faculty member. Prerequisite: junior or senior standing (F,S)

GRADUATE COURSES

500 Logistics, Maintainability and Life-Cycle Support 3(3-0)
Application of management systems analysis to problems of system maintainability and maintenance. Models of repair and failure, wear-out processes, maintenance and inspection policies and spare parts policies. Prerequisite: graduate standing (*)

501 Software Systems Engineering 3(3-0)
Software systems development and life cycles to include applications development stratagem, system development life cycle and phases, system development management, group dynamics in the development process, user requirements determination, and analysis and logical specification of the system. Cost forecasting of the engineering design through modeling. Prerequisite: graduate standing (*)

503 Ergonomics 3(2-2)
Theory and practice of human performance measurement and human factors engineering. Study of human sensory, perceptual, mental, psychomotor, and other characteristics applied to the design of man-machine systems for performance effectiveness, productivity and safety. Prerequisite: graduate standing (S)

504 Scheduling and Sequencing 3(3-0)
Theory of deterministic scheduling and sequencing with stochastic extensions. An introduction to the complexity of computations in systems varying from single machine to job shop. Prerequisite: graduate standing (F)

520 Engineering Systems Simulation 3(2-2)
Introduction to discrete event digital simulation emphasizing FORTRAN and SIMAN with overview of other simulation languages. Random variable generation, variance reduction, model validation and testing. Prerequisites: EN 105, 456 and MATH 350 (S)

530 Project Planning and Control 3(3-0)
Engineering project management including project selection, organization, planning, budgeting, scheduling and resource allocation, tracking and control, and evaluation. Application of network analysis techniques such as PERT and CPM. Prerequisite: graduate standing (F)

540 Advanced Engineering Economics 3(3-0)
Advanced topics in engineering economy featuring income tax consideration, treatment of inflation, risk and uncertainty models, cost effectiveness concepts, and project comparison methods. Prerequisite: EN 343 or permission of instructor (S)

565 Stochastic Systems Engineering 3(3-0)
Analysis and design of systems containing elements of uncertainty in demand and performance capability. Time varying measures and approximations are emphasized. Additional work required of graduate students. Prerequisites: MATH 350 and EN 456 (F)

571 Engineering Operations Research 3(3-0)
Techniques for analysis and solution of problems in industrial and management systems. Linear and non-linear programming, network analysis techniques, and dynamic programming. Additional work required of graduate students. Prerequisite: EN 456 and MATH 337 (F)

575 Engineering Systems Analysis and Design 3(3-0)
Application of industrial and systems engineering techniques to problems related to an organization's physical resources. Facilities planning and plant layout, material handling, site selection and facilities location. Additional work required of graduate students. Prerequisite: EN 571 (S)

577 Operations Planning and Control 3(3-0)
Techniques for analysis and management of manufacturing operations and production with emphasis on inventory systems and forecasting. Additional work required of graduate students. Prerequisite: EN 571 (S)

590 Special Projects (1-3 VAR)
Individual project selected, outlined and pursued by student. May be repeated. Prerequisite: graduate standing and adviser approval (*)

591 Special Topics (1-3 VAR)
Selected topics in systems engineering. Stochastic processes, multi-criteria decision analysis, analytical facility location and site selection models. Not every topic offered each year. May be repeated. Prerequisite: graduate standing (*)

593 Graduate Seminar 3(3-0)
Seminar for students entering the systems engineering program. Philosophical, methodological and ethical issues in systems engineering are discussed. (S/U grading) Prerequisite: graduate standing (F)

599 Thesis (1-6 VAR)
Preparation of thesis to meet degree requirements. Arranged with major adviser. May be repeated. (IP and S/U grading) Prerequisite: graduate standing and adviser approval (F,S)

ENGLISH (ENG)

UNDERGRADUATE COURSES

110 Composition I 3(3-0)
Beginning course in expository writing emphasizing skills of written expression, organization, and presentation. (F,S,SS)

115 Technical and Scientific Communication I 3(3-0)
Course for technology students placing emphasis upon vocabulary, grammar, sentence structure, outlining and written expression. (F,S)

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. Writing assignments prompted by class discussion and analysis of the readings lead to the writing of articulate prose and poetry. (F)

121 The Writer's Response: Evaluating Literature 3(3-0)
Explication of literary texts. Use of evidence in forming evaluations and conclusions about novels, poems and short stories. Introduction to modern literary criticism. Prerequisite: ENG 120 or permission of instructor. (S)

130 Introduction to Literature 3(3-0)
A first course intended to acquaint students from a variety of disciplines with the primary literary genres: fiction, drama and poetry. (F,S,SS)

161 Careers for English majors 1(1-0)
Identifies career options and presents employment opportunities for English majors. (F,S)

210 American Literature I 3(3-0)
Literature from colonial times to 1900, including the growth of naturalism and the rise of Romanticism and Realism. GEN.ED.IC. (F)

211 Composition II 3(3-0)
Sequential course to provide intensive consideration of essay development and to introduce procedures and techniques in preparing the referenced paper. Prerequisite: ENG 110 or 115. (F,S,SS)

212 American Literature II 3(3-0)
Continuation of ENG 210; literature from 1900 to the present. GEN.ED.IC. (S)

216 Technical and Scientific Communication II 3(3-0)
Writing course specializing in composition skills which benefit students in technical and scientific areas. Prerequisite: ENG 110 or 115. (F,S)

221 Western World Literature I 3(3-0)
Historical and thematic study of major writers from ancient Greece to the Renaissance. GEN.ED.IC. (F)

222 Western World Literature II 3(3-0)
Continuation of ENG 221; literature from the Renaissance to the present. GEN.ED.IC. (S)

231 Literature of England I 3(3-0)
Literature and literary history of English from the Anglo-Saxon period to the Romantic period. GEN.ED.IC. (#)

232 Literature of England II 3(3-0)
Continuation of ENG 231; literature and literary history of England from Romantics, Victorians, and the 20th century. GEN.ED.IC. (#)

251 Traditional Grammar Theory 2(2-0)
Primarily for non-majors who wish to improve their understanding of how language works, teacher education majors, and English majors who want additional background for advanced language courses. (F,S)

254 Science Fiction 3(3-0)
Imaginative literature of fact and fiction, reading, lectures, movies, and television. GEN.ED.IC. (S)

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. (F)

291 Special Topics (1-3 VAR)
(F,S)

304 (SPCOM 304) Language Awareness and Human Behaviors 3(3-0)
Effects of semantic and pragmatic language factors on human relationships and behavior. How language is used in our society. (F,S)

305 Technical and Scientific Report Writing 3(3-0)
Emphasis on discrete professional formats and styles in writing manuals, proposals, government contracts and reports. For upperclassmen in technical and professional fields. Prerequisite: ENG 211 or 216, or permission of instructor. (S)

315 Creative Writing: Poetry 3(3-0)
Introduction to writing poetry. A studio workshop for students to grow in their appreciation of poetic processes. Prerequisite: ENG 211 or 216 or permission of instruction. (F)

316 Creative Writing: Fiction 3(3-0)
Introduction to creating character, situation, and overall structure, emphasis on imaginative and real-life portrayal. Prerequisite: ENG 211 or 216 or permission of instructor. (S)

320 Ethnic American Literature 3(3-0)
Study of literary contributions from Asian-American, African-American, Hispanic and Native American writers. Prerequisite: ENG 212 or permission of instructor. (F)

330 Modern European Drama 3(3-0)
Survey of major developments in modern European drama. Prerequisite: ENG 110. (S)

331 Development of the Novel I 3(3-0)
Emphasis on social problems and European influences, focus on trends coming to full development in the 20th century. Includes recent works. (F)

335 Writing for Publication 3(3-0)
Focuses on developing writing techniques and styles applied to periodical publications. (F)

340 Advanced Composition (1-3 VAR)
Advanced forms of nonfiction writing; essays, articles and reports. Prerequisite: ENG 211 or permission of instructor. (F,S)

351 Children's Literature 2(2-0)
Classic and contemporary children's literature with emphasis on selection and evaluation. (F,SS)

352 English Syntax and Usage 3(3-0)
English usage and language systems, emphasis on forms and functions of language analysis. (S)

363 17th-Century British Literature 3(3-0)
Drama, prose, and poetry of Bacon, Donne, Jonson, Herbert, Milton, Marvel, Pepys, Behn, and others. (#)

364 18th-Century British Literature 3(3-0)
Dryden, Swift, Defoe, Boswell, Johnson, Pope, Fielding, Blake, Austen, Radcliffe, or other major writers. (*)

365 19th-Century British Literature 3(3-0)
Arnold, Tennyson, E. Browning, R. Browning, Eliot, Ruskin, Carlyle, Mill and the poetry of women writers. (*)

377 Materials and Techniques in Teaching English 3(3-0)
Materials and teaching/learning systems for literature, language, composition in secondary schools. (S)

381 Drama of Shakespeare 3(3-0)
Shakespeare's dramaturgy and developments of Shakespearean criticism, major histories and tragedies. (#)

391 Special Topics (1-3 VAR)
Prerequisite: ENG 211 or 216 and permission of instructor. (S)

412 Literature for Adolescents 2(2-0)
Literature suitable for adolescents, including classical and contemporary authors, and issues in selection and evaluation. (S)

422 Contemporary Literature 3(3-0)
Study of contemporary literary techniques, subject matter, and themes in fiction, drama, and poetry from 1960 to the present. (S)

441 Chaucer and His Age 3(3-0)
Chaucer and his contemporaries in their cultural and historical setting. (*)

443 English Linguistics 3(3-0)
The study of linguistics and its application in the English language. (*)

452 History of the English Language 2(2-0)
English language from Anglo-Saxon period to present; emphasis on history of linguistic and structural changes. Prerequisite: ENG 304 or permission of instructor. (F)

461 Careers for English Majors 1(1-0). (F,S)
Identifies and explores graduate school and employment opportunities. (F,S)

481 Literary Criticism 3(3-0)
Traditional and contemporary critical approaches to literature and their applications. (#)

491 Special Topics (1-3 VAR)
(*)

493 Seminar 3(3-0)
In-depth analysis of specific topics, themes, authors, and works in American, English or world literature. (*)

494 Field Experience (1-5 VAR)
A semester-long internship. Student performs professional duties using English-related skills required by the cooperating agencies. (F,S)

495 Independent Study (1-3 VAR)
Directed, intensive study and guidance in studying major literary figures or movements, arranged with the chair of the department. (F,S)

GRADUATE COURSES

511 Seminar: American Literature 2(2-0)
In-depth analysis of specific topics, themes, authors, and works. Prerequisite: graduate standing. (#)

512 Literature for Adolescents 2(2-0)
Literature suitable for adolescents, including classical and contemporary authors as well as issues in selection and evaluation. Prerequisite: graduate standing. (S)

578 Workshop in the Teaching of Writing 2(2-0)
Theories of composition, methods, sources and resources for teachers of writing. Prerequisite: graduate standing. (*)

591 Special Topics (1-3 VAR)
Prerequisite: graduate standing (*)

595 Independent Study 2(2-0)
Directed, intensive study and guidance for studying major literary figures or movements; arranged with the chair of the department. Prerequisite: graduate standing. (*)

FINANCE (FIN)

UNDERGRADUATE COURSES

330 Corporate Financial Management 3(3-0)
Principles of finance involved in problems confronting business organizations. Prerequisites: ACCTG 202, BUSAD 260 and ECON 202. (F,S,SS)

331 Managerial Finance: Policy, Planning and Control 3(3-0)
Financial management, planning, policy formulation and financial decision making. Prerequisite: FIN 330. (F)

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

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

337 Insurance 3(3-0)
Principles of insurance with emphasis on the operation and contributions of the insurance industry. Prerequisite: ECON 101 or ECON 201. (S)

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

431 Financial Policy Analysis 3(3-0)
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. Prerequisites: FIN 331 and 333. (S)

480 Small Business Studies 3(3-0)
Integrating prior studies in business into a realistic approach to assist in solving problems faced by selected firms in the community. Prerequisites: senior standing and permission of instructor. (F,S,SS)

484 Senior Studies 3(3-0)
A discipline-oriented integration of prior course work into a special project, research paper and/or activity that demonstrates proficiency in the major. Senior standing in the School of Business and completion of all core courses. (S)

490 Special Projects (1-6 VAR)
(*)

491 Special Topics (1-3 VAR)
Prerequisite: permission of instructor. (*)

495 Independent Study (1-3 VAR)
Prerequisites: senior standing in School of Business and permission of the department chair. (F,S,SS)

498 Internship (1-6 VAR)
Supervised field work in selected business, social and governmental organizations; supplemented by written reports. (S/U grades.) Prerequisites: junior or senior standing in School of Business and permission of internship coordinator. (F,S,SS)

GRADUATE COURSES

530 Financial Management 3(3-0)
The foundations of business financial management and the valuation of the corporation, including 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 on the integration of theory and methods through the use of cases. Prerequisite: graduate standing. (S)

531 International Financial Management 3(3-0)
Aspects of international environment relevant for managers of internationally active businesses including; 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; emphasis on the application of theory to current problems such as commercial policy and international liquidity. Prerequisite: graduate standing. (S)

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

533 Advanced Investment Portfolio Management 3(3-0)
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. Prerequisite: FIN 530. (F)

534 Loan and Risk Evaluation: A Case Approach 3(3-0)
A commercial bank's perspective is applied to analyze loan applications, consolidation, 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 or emerging high technology firms. Prerequisite: FIN 530. (*)

591 Special Topics 3(3-0)
(*)

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. (IP and S/U grading) (F,S,SS)

599 Thesis Research (1-6 VAR)
(*)

FOREIGN LANGUAGE (FL)

UNDERGRADUATE COURSES

100 Introduction to Comparative Linguistics 3(3-0)
Basic concepts in linguistics; comparison of languages. GEN.ED.IB. (F,S)

101 Introduction to a Critical Foreign Language I 3(3-0)
Study of a foreign language not offered regularly. Different languages are offered when enrollment permits. (*)

102 Introduction to a Critical Foreign Language II 3(3-0)
Prerequisite: FL 171 or permission of instructor. (*)

110 Foreign Language for Travel 1(1-0)
Fundamental vocabulary for basic tourist communication. (*)

270 Foreign Language Field Trip (2-6 VAR)
Communication, lectures by writers, artists, political leaders and specialists. Visits to museums. Attendance at movies, theatre and excursions. Prerequisite: permission of instructor. (*)

291 Special Topics (1-3 VAR)
(F,S)

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. (F)

494 Field Experience (1-7 VAR)
Communication, lectures by writers, artists, political leaders and specialists. Visits to museums, attendance at movies, theatres and excursions. Prerequisite: two years of college study in the language of the country or countries visited. (*)

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. (*)

GRADUATE COURSES

591 Special Topics (1-3 VAR)
(*)

FRENCH (FRN)

UNDERGRADUATE COURSES

101 Beginning Spoken French I 4(3-2)
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. (F,S)

102 Beginning Spoken French II 4(3-2)
GEN.ED.IB. Prerequisite: FRN 101 or equivalent. (S)

201 Intermediate French I 4(3-2)
Grammar review, idioms and writing of compositions. Selected readings with oral and written exercises. Prerequisite: FRN 102 or equivalent. (F)

202 Intermediate French II 4(3-2)
Grammar review, idioms and writing of compositions. Selected readings with oral and written exercises. Prerequisite: FRN 201 or equivalent. (S)

301 Advanced French Grammar I 3(3-0)
Systematic review of grammar; presentation of the more sophisticated syntactical patterns to enable students to write correctly. Required for teacher certification. Prerequisite: FRN 202 or permission of instructor. (*)

311 Advanced French Conversation I 3(3-0)
Emphasis on acquisition of vocabulary and idiomatic expressions. Advanced oral practice. Required for teacher certification. Prerequisite: FRN 202 or permission of instructor. (#)

312 Advanced French Conversation II 3(3-0)
Alternate for teacher certification. Prerequisite: FRN 202 or permission of instructor. (#)

341 Masterpieces of French Literature 3(3-0)
Close study of outstanding French works with emphasis on literary forms, critical methods and techniques. Required for teacher certification. Prerequisite: FRN 202 or permission of instructor. (#)

351 French Phonetics and Diction 3(2-2)
French pronunciation: theory, correction and practice of diction and intonation. Phonetic transcription and remedial exercises. Required for teacher certification. Prerequisite: FRN 202 or permission of instructor. (#)

381 French Civilization I 3(3-0)
Geography, art, architecture, economics and social problems, correlated with history from the origins to contemporary France. Required for teacher certification. Prerequisite: FRN 202 or permission of instructor. (#)

382 French Civilization II 3(3-0)
Alternate for teacher certification. Prerequisite: FRN 202 or permission of instructor. (F)

494 Field Experience (1-7 VAR)
Communication, lectures by writers, artists, political leaders and specialists. Visits to museums, attendance at movies, theatres and excursions. Prerequisite: two years college French. (*)

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 advisor. (*)

GEOGRAPHY (GEOG)

UNDERGRADUATE COURSES

102 Principles of Geography 3(3-0)
Landforms, climate, agriculture, population, manufacturing, resources and urbanization. Emphasis on interrelationships and spatial variations. GEN.ED.IIID. (#)

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. (F,S)

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. (*)

201 Economic Geography 3(3-0)
Areal variations on the earth's surface in human activities related to producing, exchanging and consuming resources. GEN.ED.IIC. (#)

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. (*)

250 Field Trip (1-7 VAR)
Intensive experiences in historical, physical, economic or cultural geography leading to insights and skills in data gathering and group leadership. Requirements include pre-trip preparatory planning and instruction sessions, a prescribed journal and post- trip major written report. Prerequisite: permission of instructor. (SS)

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. (F)

431 Historical Geography 2(2-0)
Reconstruction of past environments and social systems of the great civilizations; policies, life styles, internal development and national aspirations. Prerequisite: HIST 101 or 201. (*)

450 Field Trip (1-7 VAR)
Intensive research in physical, economic or cultural geography, domestic or foreign, leading to insights, experience in leadership and skill in group management. Prerequisite: permission of instructor. (*)

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 COURSE

531 Historical Geography 2(2-0)
Reconstruction of past environments and social systems of the great civilizations; policies, life styles, internal development and national aspirations. Prerequisite: HIST 101 or HIST 201; graduate standing. (SS)

GEOLOGY (GEOL)

UNDERGRADUATE COURSES

101 Earth Science 3(3-0)
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. Corequisite: GEOL 101L. (F,S).

101L Earth Science Lab 1(0-2)
GEN.ED.IIID. Corequisite: GEOL 101. (F,S)

123 Historical Geology 3(3-0)
Genesis of rock formations throughout geologic time, paleogeology of North America, identification and classification of fossils. GEN.ED.IIID. Prerequisite: GEOL 101. Corequisite: GEOL 123L. (S)

123L Historical Geology Lab 1(0-2)
GEN.ED.IIID. Corequisite: GEOL 123. (S)

300 Environmental Geoscience 3(2-2)
Geological conditions and influences affecting the life and development of man: mineral, oil, stream erosion, landslides, subsidence, earthquakes. Prerequisite: GEOL 101 or 123. (F,S)

304 Mineralogy and Petrology 4(2-4)
The physical and chemical properties of minerals. The study of rock origins and methods of identification by use of macroscopic and microscopic methods. Prerequisites: GEOL 101, 101L and permission of instructor. (F,S)

308 Invertebrate Paleontology 3(1-4)
Identification, classification, morphology and stratigraphic significance of fossil macroinvertebrates plus micro. Prerequisite: GEOL 123 or BIOL 202. (F,S)

313 Geomorphology and Remote Sensing 4(3-2)
Classification and genesis of landforms of earth's surface. Includes fluvial and glacial processes. Prerequisite: GEOL 101 or 123. (F,S)

315 Geologic Field Techniques 3(1-4)
Use of Brunton compass, alidade, aerial photographs and geomorphic interpretation. Introduction to geologic mapping. Prerequisite: permission of instructor. (F,S)

405 Ground Water 4(3-2)
Principles of ground water hydrology. Methods of conducting ground water survey. Ground water case histories, especially Colorado's. Prerequisites: GEOL 101 or 123 and two years high school algebra. (F,S)

410 Stratigraphy and Sedimentation 4(3-2)
Methods of transportation and environments of deposition of sediments. Geologic formations, facies and tectonic framework. Prerequisite: GEOL 123. (F,S)

411 Structural Geology and Tectonics 4(3-2)
Origin, description, classification and analytical interpretations of the structural features of the earth's crust. Prerequisites: GEOL 123 and permission of instructor. (F,S)

415 Exploration Geophysics 4(3-2)
A discussion and analytical interpretation of gravimetric, magnetic, seismic, electrical, and gamma-neutron exploration methods as applied in the petroleum industry and water resource governmental agencies. Prerequisites: GEOL 101, PHYS 201, 201L and MATH 126 or 221. (F,S)

GERMAN (GER)

101 Beginning Spoken German I 4(3-2)
Pronunciation and grammar with oral-aural training. Easy reading and conversation. GEN.ED.IB. (F)

102 Beginning Spoken German II 4(3-2)
GEN.ED.IB. Prerequisite: GER 101 or equivalent. (S)

201 Intermediate German I 5(5-0)
Review and expansion of first-year grammar. Compositions, reading and discussion of contemporary German life. Prerequisite: GER 102 or equivalent. (*)

202 Intermediate German II 5(5-0)
Prerequisite: GER 201 or equivalent. (*)

301 Advanced German Grammar I 3(3-0)
Prerequiste: GER 202 or permission of instructor. (*)

302 Advanced German Grammar II 3(3-0)
Prerequisite: GER 202 or permission of instructor. (*)

381 German Civilization I 3(3-0)
German geography, culture and history from the beginning to the present. Prerequisite: GER 202 or permission of instructor. (*)

382 German Civilization II 3(3-0)
Prerequisite: GER 202 or permission of instructor. (*)

HISTORY (HIST)

UNDERGRADUATE COURSES

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. (F)

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. (S,SS)

185 Research in History 2(2-0)
Enhances general knowledge of all students by developing skills to evaluate historical data. GEN.ED.IIC. (S)

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. (F)

202 The United States since 1865 3(3-0)
United States from reconstruction era to the mid-20th century. GEN.ED.IIC. (S,SS)

211 Colorado History 2(2-0)
History, government and economic factors important to the settlement and development of Colorado. GEN.ED.IIC. (F)

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. (F)

305 Development of a World Power (1850-1920) 3(3-0)
The growth of U.S. politically, economically and socio-culturally, into a major power. (F)

306 20th-Century America 3(3-0)
United States from the New Deal to the present. (S)

311 History of United States Foreign Policy 3(3-0)
United States foreign policy from the founding of the republic to the present. (S #)

313 American West 3(3-0)
Role of the individual and the group in the development of the frontier into the 20th century. Prerequisite: permission of instructor. (F *)

321 (POLSC 321) American Constitutional Development 3(3-0)
Origin, development, broadening of the American Constitution by legal decisions, customs, political parties, executive agreements, legislative interpretation. Prerequisite: HIST 202 or POLSC 101. (F)

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. (S)

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. (F)

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. (F)

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. (S *)

440 History of Mexico 3(3-0)
Political, cultural and economic development of Mexico from pre-conquest civilizations to the present. (S)

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. (F #)

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. (S #)

458 20th-Century Europe 3(3-0)
Events and personalities from World War I to the present. (S)

491 Special Topic (1-3 VAR)
Prerequisites: junior or senior status with adequate preparation and permission of instructor. (F,S,SS)

GRADUATE COURSES

501 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. Prerequisite: graduate standing. (F *)

513 American West 3(3-0)
Role of the individual and the group in the development of the frontier into the 20th century. Prerequisite: graduate standing. (F)

540 History of Mexico 3(3-0)
Political, cultural and economic development of Mexico from preconquest civilizations to the present. Prerequisite: graduate standing. (S)

558 20th-Century Europe 3(3-0)
Events and personalities from World War I to the present. Prerequisite: graduate standing. (S)

589 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. Prerequisite: graduate standing. (F)

591 Special Topics (1-3 VAR)
(F,S)

HUMAN PERFORMANCE AND LEISURE STUDIES (HP)

UNDERGRADUATE COURSES

101L Basketball 1(0-2)
(F,S)

103L Military Fitness 2(0-2)
(F,S)

104L Personal Fitness 1(0-2)
(F,S)

105L Soccer 1(0-2)
(F)

106L Softball 1(0-2)
(S)

107L Scuba Diving 1(0-2)
(F,S)

108L Windsurfing 1(0-2)
(F,S)

109L Volleyball 1(0-2)
(F,S)

110L Weight Training 1(0-2)
(F,S)

115L Skiing 1(0-2)
(S)

116L Camping 1(0-2)
(F)

117L Backpacking 1(0-2)
(F)

118L Jogging 1(0-2)
(F,S)

120L Rhythmic Aerobics 1(0-2)
(F,S)

150L Archery 1(0-2)
(F)

167L Bowling 1(0-2)
(F,S)

174L Tennis 1(0-2)
(F,S)

175L Racquetball 1(0-2)
(F,S)

176L Advanced Life Saving 1(0-2)
Prerequisite: swimming pre-test. (S)

180L Intercollegiate Volleyball 2(0-4)
(F)

182L Intercollegiate Basketball 2(0-4)
(S)

183L Intercollegiate Cross Country 2(0-4)
(F)

184L Intercollegiate Wrestling 2(0-4)
(S)

185L Intercollegiate Golf I 2(0-4)
(F,S)

186L Intercollegiate Tennis I 2(0-4)
(F,S)

187L Intercollegiate Track and Field 2(0-4)
(S)

188L Elementary Physical Conditioning 2(0-4)
(F,S)

204L Fitness for Life 2(0-4)
Physical fitness information and training for life. Extensive physical fitness activities; emphasis on cardiovascular adaptation. (F,S)

231 Cardiopulmonary Resuscitation 1(1-0)
Technique of applying a combination of artificial respiration and artificial circulation in the event cardiac arrest occurs. (S/U grades.) (F,S)

232 Advanced First Aid 2(2-0)
Knowledge and skills in the latest approved first-aid procedures. Advanced Red Cross certification. (F,S)

233 History and Principles of Physical Education and Recreation 3(3-0)
Study of the history, philosophy and contemporary problems and trends of physical education and recreation, and their influence upon contemporary American society. (F)

242 Skills and Techniques of Motor Learning and Elementary Activities 3(3-0)
Techniques of teaching low organized games and enrichment activities at the elementary school level with emphasis on the development of perceptual-motor learning. (F)

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. (S)

244 Skills and Techniques of Soccer and Volleyball 2(2-0)
Basic skills and techniques of soccer and volleyball; emphasis on teaching procedure. (F)

245 Skills and Techniques of Weight Training and Fitness Activities 2(2-0)
Basic skills and techniques of weight training and fitness activities; emphasis on teaching procedures. (F)

246 Skills and Techniques of Track and Field, Basketball and Softball 2(2-0)
Basic skills and techniques of track and field, basketball and softball; emphasis on organization and teaching procedures. (S)

247 Skills and Techniques of Tumbling 1(1-0)
Basic skills and techniques of tumbling activities; emphasis on spotting and teaching procedures. (F)

248 Skills and Techniques of Individual and Dual Sports 3(3-0)
Basic skills and techniques of tennis, racquetball, badminton and golf; emphasis on teaching procedures in these activities. (S)

274L Advanced Tennis 1(0-2)
Instruction in tennis for students who already possess basic skills and knowledge in tennis. Prerequisite: HP 174L or permission of instructor. (F,S)

276L Water Safety Instructor Certification 2(0-2)
Water safety instruction certification may be earned in this course. Prerequisite: advanced life saving. (S)

280L Intercollegiate Volleyball 2(0-4)
(F)

282L Intercollegiate Basketball 2(0-4)
(S)

283L Intercollegiate Cross Country 2(0-4)
(F)

284L Intercollegiate Wrestling 2(0-4)
(S)

285L Intercollegiate Golf II 2(0-4)
(F,S)

286L Intercollegiate Tennis II 2(0-4)
(F,S)

287L Intercollegiate Track and Field 2(0-4)
(S)

288L Advanced Physical Conditioning 2(0-4)
(F,S)

289L Student Assistant 1(0-2)
(F,S)

291 Special Topics (1-5 VAR)
(F,S)

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. (F,S)

342 Training Room Methods 2(2-0)
Procedures utilized in prevention, care and treatment of athletic injuries. Prerequisite: KIN 254. (F)

343 Measurement and Evaluation in Physical Education 2(2-0)
Modern testing programs in physical education; emphasis on preparation and administration of both written and skills tests. (F)

378 Methods in Physical Education 2(2-0)
Classroom course used to identify and examine methods in the teaching of physical education activities. Prerequisite: acceptance into teacher education department. (S)

389L Student Assistant 1(0-2)
Prerequisite: PE 289L. (F,S)

461 Program Administration in Physical Education and Recreation Athletics 3(3-0)
Organizational and administrative process necessary for the responsible conduct of physical education, recreational activities and interscholastic athletics. (S)

465 Adapted Physical Education and Recreation 2(2-0).
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. Prerequisites: BIOL 221 and 221L. (F)

471 Coaching and Officiating Football 2(2-0)
Techniques and strategy of coaching and officiating football. (F)

472 Coaching and Officiating Basketball 2(2-0)
Techniques and strategy of coaching and officiating basketball. (F)

473 Coaching and Officiating Track and Field 2(2-0)
Techniques and strategy of coaching and officiating cross country and track and field. (S)

474 Coaching and Officiating Gymnastics 2(2-0)
Techniques and strategy of coaching and officiating gymnastics. (F)

475 Coaching and Officiating Volleyball 2(2-0)
Techniques and strategy of coaching and officiating volleyball. (F)

482 Coaching and Officiating Wrestling 2(2-0)
Techniques and strategy of coaching and officiating wrestling. (S)

483 Coaching and Officiating Baseball 2(2-0)
Techniques and strategy of coaching and officiating baseball. (S)

491 Special Topics (1-5 VAR)
(S/U grades.) (*)

494 Field Experience (1-5 VAR)
Learning experience to be conducted in the actual environment and supervised by the physical education program. (S/U grades.) Prerequisite: approval of the department chair. (*)

495 Independent Study (1-5 VAR)
Prerequisite: approval of the department chair. (*)

GRADUATE COURSES

500 Workshop (1-5 VAR)
Graduate learning experience in physical education offered in large blocks of time not corresponding to the weekly meeting times of the regular course offerings. Prerequisite: approval of program chair. (*)

522 Elementary School Physical Education 2(2-0)
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. Prerequisite: graduate standing. (*)

591 Special Topics (1-5 VAR)
Graduate level study or activity designed to increase understanding in areas not covered by regular offerings of the department. Prerequisite: approval of program chair. (*)

HUMANITIES (HUM)

100 Film: Art and Technology 3(3-0)
Study of development of style and subject matter of a significant art form which reflects the impact of technology on the film industry. GEN.ED.I-I (*)

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 Renaissance. GEN.ED.IK. (F,S)

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 the Renaissance to the present. GEN.ED.IK. (F,S)

INDUSTRIAL SCIENCE AND TECHNOLOGY (IST)

UNDERGRADUATE COURSES

101 Woods Technology 3(0-6)
Development of proficiency in the operation and maintenance of modern woodworking machinery, safety education, cutting principles and techniques, machine design and capabilities. (F)

102 Wood Fabrication Technology 3(1-4)
Construction of cabinets, millwork, and furniture: design, construction details, production methods. Structure characteristics and physical properties of wood; strength values, grading and moisture relationships. Prerequisite: IST 101. (S)

103 Commercial and Residential Construction 3(1-4)
Principles of frame construction including blueprint reading, foundations, framing, exterior and interior finish and related areas of layout: conventional and modular component system. The uniform building code is considered in the teaching of these principles. Prerequisite: IST 102. (S)

106 Fundamentals of Carpentry I 3(0-6)
Tools and types of building materials essential in planning and building houses and furniture. Prerequisite: IST 101. (*)

120 Introduction to Industrial Science Technology 2(2-0)
Qualifications, opportunities, preparation, and duties of workers in teaching technology and facilities management careers. (F)

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. (F,S)

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. (*)

202 Industrial Materials Technology 3(0-6)
Study of often used and innovative industrial materials. Properties and application of metals, polymus. ceramics, composites and others. (F)

203 Wood Turning 3(0-6)
Basic skills in wood turning and the use of the lathe to supplement bench and machine woodworking. (F,S)

204 Production Systems 3(0-6)
Exercise in the research and development and production of a product. Industrial organization and production methods. Prerequisite IST 102. (S)

214 Commercial Finishing Materials 3(0-6)
Specialized activities related to the finishing of wood and metal products. New materials are used and tested. Prerequisite: IST 101 or equivalent. (F)

221 Sheet Metal 2(0-4)
Sheet metal shear, brake, rolls. Joining of sheet metal by seaming, riveting and soldering. (*)

296 Cooperative Education Placement (1-5 VAR)
For freshmen and sophomores. Work experience under direction of a field supervisor and faculty member. (*)

303 Communication Systems Technology 3(1-4)
Study of technical means by which humans extend their capabilities through the invention and use of communication systems, both electronic and graphic. Prerequisites MET 111 and EET 250. (S)

304 Transportation Technology 3(1-4)
A system analysis of transportation technologies. Study of transportation systems resources, processes and implementations. Participants develop a degree of technological literacy pertinent to transportation systems. Prerequisites: IST 120 and APSM 225. (F)

305 World of Construction and Manufacturing 2(0-4)
Cognitive and psychomotor skills and attitudes in manufacturing practice experiments. Prerequisite: IST 102. (*)

312 Construction Manufacturing Technology 3(0-6)
Modern techniques in the manufacturing of prefabricated cabinets and accessories. Theory application through the implementation of new tooling available in the cabinet industry. Prerequisite: IST 102. (F)

320 Metal Casting Technology 3(2-4)
Casting, fabrication and uses in service kinetics of solidification, phase transformation and equilibrium. Casting design and modern casting technology. Prerequisite: IST 101. (F)

331 Manufacturing Fabrication Processes 3(0-6)
Fastening, forming and machining processes. Layout, design and measurement. Introductioon to automated processes. Prerequisite: MET 104. (S)

332 Facilities Management I 3(3-0)
The basic understanding of personnel services, budgeting and maintenance in physical plant. (*)

333 Facilities Management II 3(3-0)
Understanding the operations, planning, design, and construction of a physical plant. Evaluating plant organization. (*)

345 Career Education 2(2-0)
Design, implementation and conducting of career education programs. Selection and preparation of teaching materials for career education programs. Prerequisite: IST 202. (F,S,SS)

361 Building Materials 3(3-0)
Properties and functional applications of building materials: wood, steel, concrete, ceramics, plastics, insulation, adhesives and sealants. Recent developments in new materials and application. Prerequisite: IST 302. (S)

362 Building Systems 3(3-0)
The basic applications of building services in typical structures, including heating, water, plumbing, drainage, ventilation, air conditioning, vertical transportation, acoustical control, basic electrical controls, and code requirements. Prerequisite: IST 103. (*)

375 Facilities Layout/Organization 3(3-0)
The principles of shop planning as applied to location and types of shops, flow of materials, selection and equipment, layout of working areas, installation of machinery and tool management. (S)

377 Methods/Techniques of Teaching Industrial Science Technology 3(3-0)
Methods and techniques of teaching industrial science technology courses in laboratory management, professional development, certification, accreditation, public relations and school policies. Prerequisite: IST 120. (S)

455 Curriculum Development and Evaluation in Industrial Science Technology 3(3-0)
Organization of units of instruction, lesson plans, instruction sheets, evaluative procedures and tests. Prerequisite: IST 120. (F)

457 Industrial Safety 3(3-0)
Laboratory organizational patterns, administrative duties of the teacher, and safety regulations. Prerequisite: IST 120. (S)

459 Facilities Supervisor 3(3-0)
Preparation for leadership in industry as foremen, supervisors, and directors for individuals in construction and building maintenance. Prerequisites: IST 332 and 333. (SS)

490 Special Projects (1-5 VAR)
Prerequisite: junior or senior standing; permission of instructor. (F,S)

493 Seminar (1-5 VAR)
Individual and small-group activities. Individual experimentation and expertise development in technology education. May be repeated. (F,S)

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. (F,S)

496 Cooperative Education Placement (1-5 VAR)
Work experience under direction of field supervisor and faculty member. Prerequisite: junior or senior standing. (F,S,SS)

GRADUATE COURSES

500 Workshop 2(0-2)
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. Prerequisite: graduate standing. (*)

545 Career Education 2(2-0)
Design, implementation and conducting career education programs. Selecting and preparing teaching materials for career education programs. Prerequisite: IST 345 or equivalent and graduate standing. (*)

546 Problems in Career Education 3(3-0)
Develop instructional materials, design teaching aids and collect occupational information. Review of facilities, equipment and supply needs of career education programs. Prerequisites: IST 345 or 545 and graduate standing. (*)

547 Career and Occupational Education 2(2-0)
Techniques and procedures in analyzing occupations. Problems, methods and procedures involved in planning, organizing and disseminating occupational information to students. Prerequisite: graduate standing. (*)

555 Trends and Problems in Industrial Science and Technology 3(3-0)
Practical methods and techniques of organizing curriculum materials and controlling a typical technology education program. May be repeated. Prerequisite: graduate standing. (*)

557 Organization and Administration in Industrial Science and Technology 3(3-0)
Shop organizational patterns, administrative duties of the teacher, and new trends in selection and arrangement of equipment and facilities. Prerequisite: graduate standing. (*)

570 Special Problems in Woodworking 3(0-6)
Experimental work with new tools, equipment, materials and processes for improved program development and teaching techniques in woodworking. Prerequisite: graduate standing. (*)

571 Materials and Processes in Teaching Woodworking 3(0-6)
Intensive study in selected areas of the woodworking industry as it relates to materials, processes and construction. Mass production and experimentation. Prerequisite: graduate standing. (*)

577 Materials and Techniques of Teaching Industrial Science and Technology in the Secondary Schools 3(3-0)
Practical method and techniques in teaching technology education classes. Prerequisite: graduate standing. (*)

580 Problems in Industrial Science and Technology 3(3-0)
In-depth study by one or more students who wish to enrich their teaching ability in specific area of technology education. May be repeated. Prerequisites graduate standing and permission of instructor. (*)

581 Curriculum Development in Industrial Science and Technology 3(3-0)
Derivation of objectives, selection and arrangements of instruction units and materials for technology education classes. Prerequisite: graduate standing. (*)

582 History of Industrial Education 3(3-0)
Leaders, agencies and movements that have contributed to the social and philosophical influences in industrial education. Prerequisite: graduate standing. (*)

583 Visual Aids in Industrial Science and Technology 3(3-0)
Instructional sheets, charts, graphs and other instructional devices planned and developed by students. Prerequisite: graduate standing. (*)

584 Philosophy of Industrial Science and Technology and Vocational Education 3(3-0)
Overview of the nature and purpose of technology education and vocational education, their relationships, differences and the place each should have in public schools. Prerequisite: graduate standing. (*)

585 Organization and Administration of Industrial Science and Technology 3(3-0)
Organization and administration of industrial education programs as they relate to federal, state and local school administration. Prerequisite: graduate standing. (*)

588 Experimentation in Industrial Science and Technology 2(0-2)
Investigation of the latest materials, tools and techniques used in industry. May be repeated. Prerequisite: graduate standing. (*)

590 Special Projects (1-5 VAR)
For advanced students. Each selects, outlines and pursues a project. Instructor approval and supervision provided. May be repeated. Prerequisite: graduate standing. (*)

591 Special Topics (1-5 VAR)
Individual and small-group activities in individual experimentation and expertise development in technology education. May be repeated. Prerequisite: graduate standing (*)

592 Research (1-5 VAR)
(*)

593 Seminar (1-5 VAR)
Individual and small-group activities. Current topics, issues, resources, and practices. May be repeated. (*)

595 Independent Study (1-5 VAR)
For advanced students. Each selects, outlines and pursues a project. Instructor approval and supervision provided. May be repeated. Prerequisite: graduate standing. (*)

INTERDISCIPLINARY STUDIES (IS)

UNDERGRADUATE COURSES

101 Freshman Honors Seminar I 1(1-0)
A thematic, interdisciplinary, small-group seminar dealing with the aesthetic and historical aspects of natural and physical science. Guest speakers, research, visits to museums, exhibits, and cultural events related to the course's theme. GEN.ED.IL. Prerequisite: acceptance into the university honors program. Corequisites: IS 102, 103. (F)

102 Freshman Honors Seminar I 1(1-0)
A thematic, interdisciplinary, small-group seminar dealing with the sociological and cultural aspects of natural and physical science. Guest speakers, research, visits to museums, exhibits, and cultural events related to the course's theme. GEN.ED.IIF. Prerequisite: acceptance into the university honors program. Corequisites: IS 101, 103. (F)

103 Freshman Honors Seminar I 1(1-0)
A thematic, interdisciplinary, small-group seminar dealing with the technological and applied aspects of natural and physical science. Guest speakers, research, visits to museums, exhibits, and cultural events related to the course's theme. GEN.ED.IIIG. Prerequisite: acceptance into the university honors program. Corequisites: IS 101, 102. (F)

104 Freshman Honors Seminar II 1(1-0)
A thematic, interdisciplinary, small-group seminar dealing with the aesthetic and historical aspects of the liberal and fine arts. Guest speakers and visits to museums, exhibits, and cultural events related to the course's theme. GEN.ED.IL. Prerequisite: acceptance into the university honors program. Corequisites: IS 105, 106. (S)

105 Freshman Honors Seminar II 1(1-0)
A thematic, interdisciplinary, small-group seminar dealing with the sociological and cultural aspects of the liberal and fine arts. Guest speakers and visits to museums, exhibits, and cultural events related to the course's theme. GEN.ED.IIF. Prerequisite: acceptance into university honors program. Corequisites: IS 104, 106. (S)

106 Freshman Honors Seminar II 1(1-0)
A thematic, interdisciplinary, small-group seminar dealing with the scientific and technological aspects of the liberal and fine arts. Guest speakers and visits to museums, exhibits, and cultural events related to the course's theme. GEN.ED.IIIG. Prerequisite: acceptance into university honors program. Corequisites: IS 104, 105. (S)

201 Sophomore Honors Seminar I 1(1-0)
A thematic, interdisciplinary, small-group seminar dealing with the aesthetic and historical aspects of applied science and technology. Guest speakers and visits to museums, exhibits, and cultural events related to the course's theme. GEN.ED.IL. Prerequisite: acceptance into university honors program. Corequisites: IS 202, 203. (F)

202 Sophomore Honors Seminar I 1(1-0)
A thematic, interdisciplinary, small-group seminar dealing with the sociological and cultural aspects of applied science and technology. Guest speakers and visits to museums, exhibits, and cultural events related to the course's theme. GEN.ED.IIF. Prerequisite: acceptance into university honors program. Corequisites: IS 201, 203. (F)

203 Sophomore Honors Seminar I 1(1-0)
A thematic, interdisciplinary, small-group seminar dealing with the scientific aspects of applied science and technology. Guest speakers and visits to museums, exhibits, and cultural events related to the course's theme. GEN.ED.IIIG. Prerequisite: acceptance into the university honors program. Corequisites: IS 201, 202. (F)

204 Sophomore Honors Seminar II 1(1-0)
A thematic, interdisciplinary, small-group seminar dealing with the aesthetic and historical aspects of business and the professions. Guest speakers, visits to museums, exhibits, and cultural events related to the course's theme. GEN.ED.IL. Prerequisite: acceptance into the university honors program. Corequisites: IS 205, 206. (S)

205 Sophomore Honors Seminar II 1(1-0)
A thematic, interdisciplinary, small-group seminar dealing with the sociological and cultural aspects of business and the professions. Guest speakers, visits to museums, exhibits, and cultural events related to the course's theme. GEN.ED.IIF. Prerequisite: acceptance into the university honors program. Corequisites: IS 204, 206. (S)

206 Sophomore Honors Seminar II 1(1-0)
A thematic, interdisciplinary, small-group seminar dealing with the scientific and technological aspects of business and the professions. Guest speakers, visits to museums, exhibits, and cultural events related to the course's theme. GEN.ED.IIIG. Prerequisite: acceptance into the university honors program. Corequisites: IS 204, 205. (S)

291 Special Topics (1-3 VAR)
(S/U grades.) (*)

301 Junior Honors Seminar 3(3-0)
A thematic, interdisciplinary, small-group seminar dealing with scientific, technological, sociological, aesthetic, ethical, and historical aspects of international and multicultural issues. Guest speakers and visits to museums, exhibits, and cultural events related to the course's theme. Prerequisite: three hours previous honors work. (F)

401 Senior Honors Seminar 3(3-0)
A thematic, interdisciplinary, small-group seminar dealing with scientific, technological, sociological, cultural, aesthetic, ethical, and historical aspects of issues of education and research. Guest speakers and visits to museums, exhibits and cultural events related to the course's theme. Senior honors project will be introduced. Prerequisite: IS 301. (F)

490 Special Projects 2(2-0)
Prerequisite: three hours of previous honors work and IS 301. (*)

491 Special Topics (1-3 VAR)
(S/U grades.) (*)

ITALIAN (ITL)

UNDERGRADUATE COURSES

101 Introduction to Italian I 4(3-2)
Pronunciation and grammar with oral-aural training. Easy reading and conversation. GEN.ED.IB. (F,S)

102 Introduction to Italian II 4(3-2)
GEN.ED.IB. Prerequisite: ITL 101 or equivalent. (S)

201 Intermediate Italian I 4(3-2)
Reading and conversation in Italian, review of grammar, study of idioms, theme writing in Italian. Prerequisite: ITL 102 or equivalent. (F)

202 Intermediate Italian II 4(3-2)
Prerequisite: ITL 201 or equivalent. (S)

301 Advanced Italian Grammar I 3(3-0)
Linguistic analysis, vocabulary building and composition. Prerequisite: ITL 202 or permission of instructor. (#)

302 Advanced Italian Grammar II 3(3-0)
Linguistic analysis, vocabulary building and composition. Prerequisite: ITL 202 or permission of instructor. (#)

381 Italian Civilization I 3(3-0)
Italian geography, culture and history from the Roman Empire to the present. Prerequisite: ITL 202 or permission of instructor. (#)

382 Italian Civilization II 3(3-0)
Prerequisite: ITL 202 or permission of instructor. (#)

494 Field Experience (1-7 VAR)
Communication, lectures by writers, artists, political leaders and specialists. Visits to museums, attendance at movies, theatres and excursions. Prerequisite: 2 years of college Italian. (*)

495 Independent Study (1-3 VAR)
May be repeated for credit with approval of major adviser. (*)

KINESIOLOGY (KIN)

UNDERGRADUATE COURSES

254 Anatomical Kinesiology 2(2-0)
Fundamentals of anatomical and structural components of Human Movement. (F)

258 Maturational Kinesiology 2(2-0)
Study of the maturational components of human movement with emphasis on analyzing movement problems. (F)

262 Psychological Kinesiology 2(2-0)
Study of neuropsychological components of human movement. (S)

364 Mechanical Kinesiology 2(2-0)
Fundamental body movements and the primary muscles involved in those movements. Prerequisite: KIN 254. (F)

442 Physiology Kinesiology 2(2-0)
Effects of muscular activity on the various organs and systems of the body; an analysis of intramuscular and extramuscular adaptations which occur with training. Prerequisite: KIN 254. (F)

MANAGEMENT (MGMT)

UNDERGRADUATE COURSES

310 Principles of Management 3(3-0)
Decision making communication and leadership principles in business and not-for-profit organizations. (F,S,SS)

311 Production/Operations Management 3(3-0)
Techniques and procedures for efficient operations and problem solving. Prerequisites: BUSAD 260 and MGMT 310 (F,S,SS)

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

320 Organizational Behavior 3(3-0)
Behavior of individuals and small groups in organizational settings. Managerial style, social system analysis, motivation and communication. Prerequisite: MGMT 310 (F,S)

362 Purchasing and Materials Management 3(3-0)
Strategies and tactical methods, opportunities and problems associated with the flow of materials in an organization will be covered. Prerequisite: MGMT 311 (F)

365 Management Information Systems 3(3-0)
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. Prerequisite: MGMT 310 (F)

410 Industrial Relations 3(3-0)
Federal and state legislation and execution and executive orders governing the employer-employee relationship; legal rights of organizations and collective bargaining. Prerequisite: MGMT 318 (F,S)

412 Issues in Operations Management 3(3-0)
Contemporary trends and areas of management interest regarding materials and operations management techniques and methodologies. The current academic and practitioner literature is emphasized. Prerequisite: MGMT 311 (S)

414 Entrepreneurship 3(3-0)
The environment, management, marketing, accounting and legal considerations facing the small business manager and owner. Prerequisites: ACCTG 202, MGMT 310 and MKTG 340, or permission of instructor (F,S)

460 Operations Planning and Strategy 3(3-0)
Examination of recent developments in the strategy of operations in the manufacturing and service sectors involving technological policy, new process development, and new product introduction. Prerequisites: MGMT 311, 362 and senior standing (S)

465 Operations Research/Management Science 3(3-0)
Examination of deterministic tools in managerial problem solving; mathematical programming methods, linear, nonlinear, network, and inventory problems. Computer solutions of structured business problems. Prerequisite: MGMT 311 (F)

467 Computer Simulation 3(3-0)
Recognition of problems suited for simulation, building, verifying, validating and analyzing models using simulation software. Interpretation of simulation results. Prerequisites: BUSAD 260, MGMT 311, senior standing or permission of instructor (F)

470 Managerial Decision Support 3(3-0)
Examination of modern managerial decision-making processes. The course stresses the general nature of decision making, decision tree analysis, subjective elements, and decision support software. Corequisite: BUSAD 260 (F)

480 Small Business Studies 3(3-0)
Integrating prior studies in business into a realistic approach to assist in solving problems faced by selected firms in the community. Prerequisites: senior standing and permission of instructor (F,S)

484 Senior Studies 3(3-0)
A discipline oriented integration of prior course work into a special project, research paper and/or activity that demonstrates proficiency in the major. Senior standing in the School of Business and completion of all core courses. (F,S)

485 Management Strategy and Policy 3(3-0)
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. Prerequisites: senior standing in the School of Business and completion of all core courses (F,S,SS)

490 Special Projects (1-6 VAR)
(*)

491 Special Topics (1-3 VAR).
Prerequisite: permission of instructor. (*)

495 Independent Study (1-3 VAR)
Prerequisites: senior standing in School of Business and permission of department chair (F,S,SS)

498 Internship (1-6 VAR)
Supervised field work in selected business, social and governmental organizations; supplemented by written reports. (S/U grades.) Prerequisites: junior or senior standing in School of Business and permission of internship coordinator (F,S,SS)

GRADUATE COURSES

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 on the processes of behavioral change at the individual, group and organizational levels; use of case studies. Prerequisite: graduate standing (F)

521 Corporate Strategy and Industrial Structure 3(3-0)
Exploration of important relationships between the structural characteristics of an industry and the performance of firms competing in the industry; the nature of the competitive interaction among firms and the rules of the strategic game determined by the industry's structural characteristics. Prerequisite: graduate standing (*)

523 Strategic Management in Public Sector Companies 3(3-0)
Strategic and policy difference between service sector companies and organizations whose product is a tangible result of a manufacturing process, emphasizing overall strategy as viewed by the general manager as well as the interrelationships and conflicts among marketing, human resources, finance, and operations. Prerequisite: graduate standing (*)

560 Management Information Systems 3(3-0)
The development of an overall framework for analyzing the use of information by organizations along with examples of different types of information systems. The analysis and design of information systems is stressed through case study and projects, emphasizing the role of computing in information systems and the design of computer-based systems and decision support systems. Prerequisite: graduate standing (F)

561 Advanced Database Management Systems 3(3-0)
Development of database management systems for specific managerial applications, e.g., control and operation of managerial functions; focus on hierarchical, network 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 microsystem-based software. Prerequisite: MGMT 560 (*)

567 Computer Simulation 3(3-0)
Recognition of problems suited for simulation solution, building, verifying, validating, and analyzing models using simulation softrware. Intrepretation of simulation results. Prerequisites: BUSAD 260, MGMT 311, senior standing or permission of instructor (F)

585 Management Strategy and Policy 3(3-0)
Implementation of strategic decisions at differing managerial levels within a firm, including 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. Use of case studies. Prerequisite: graduate standing (SS)

591 Special Topics 3(3-0)
(*)

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. (IP and S/U grading.) (F,S,SS)

599 Thesis Research (1-6 VAR)
(*)

MARKETING (MKTG)

UNDERGRADUATE COURSES

340 Principles of Marketing 3(3-0)
Anaytical survey of problems encountered in distributing goods and services from a marketing-management approach with emphasis on the role of the consumer and the social responsibility of the marketer. (F,S,SS)

341 Sales Force Management 3(3-0)
Managing a sales force including recruiting, selection, training, compensation, supervision, stimulation and sales planning. Computer simulation used to do forecasting, budgeting, territory allocation, sales analysis and control. Prerequisite: MKTG 340. (F)

342 Promotional Strategy 3(3-0)
Principles, concepts and problems involved in development and management of advertising, personal selling, public relations and sales promotion programs, activities in the global economy. Prerequisite: MKTG 340. (S)

344 Industrial Marketing 3(3-0)
Activities involved in marketing of industrial goods and services. A quantitative orientation towards economic analysis of industrial marketing decisions. Prerequisites: MKTG 340 and BUSAD 261. (F)

348 Consumer Behavior 3(3-0)
Survey of contributions of behavioral sciences to understanding and prediction of consumer behavior in the decision-making process. Prerequisite: MKTG 340. (F)

440 Marketing Research 3(3-0)
Fundamental techniques. Practical experience in research methodology: planning an investigation, questionnaires, sampling, interpretation of results, report preparation. Prerequisites: MKTG 340 and BUSAD 260. (F,S)

441 Marketing Strategies 3(3-0)
Detailed consideration of process of formulating and implementing strategies in marketing. Major emphasis on markets, channels of distribution, and product analysis. Prerequisites: MKTG 340, 440, second semester seniors. (S)

480 Small Business Studies 3(3-0)
Integrating prior studies in business into a realistic approach to assist in solving problems faced by selected firms in the community. Prerequisite: senior standing and permission of instructor. (F,S)

484 Senior Studies (3-0)
A discipline-oriented integration of prior course work into a special project, research paper and/or activity that demonstrates proficiency in the major. Senior standing in 5/B and completion of all core courses. (S)

490 Special Projects (1-6 VAR)
(*)

491 Special Topics (1-3 VAR)
Prerequisite: permission of instructor. (*)

495 Independent Study (1-3 VAR)
Prerequisite: senior standing in School of Business and permission of department chair. (F,S,SS)

498 Internship (1-6 VAR)
Supervised field work in selected business, social and governmental organizations; supplemented by written reports. (S/U grades.) Prerequisites: junior or senior standing in School of Business and permission of internship coordinator. (F,S,SS)

GRADUATE COURSES

540 Marketing Management Strategies 3(3-0)
The investigation of strategic decisions necessary to match organizational resources and objectives with market opportunities. Examination of strategy areas of product development and diversification, pricing, communication through advertising and selling, and distribution. Emphasizes an understanding and forecasting of market behavior, coordination of marketing with other managerial decisions, and the integration of theory and principles through the use of cases. Prerequisite: graduate standing. (F)

541 Cases in Marketing Management 3(3-0)
Tests the application skills of students 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. Prerequisite: MKTG 540. (S)

591 Special Topics 3(3-0)
(*)

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. (IP and S/U grading.) (F,S,SS)

599 Thesis Research (1-6 VAR)
(*)

MASS COMMUNICATIONS (MACOM)

UNDERGRADUATE COURSES

101 The Mass Media 3(3-0)
Mass media in American society, their growth, development and impact on contemporary culture. GEN.ED.ID. (F,S,SS)

110 Career Orientation 1(1-0)
Survey of career opportunities in the communication industry with emphasis on the mass media and related agencies. Required for majors and minors in mass communications. (F,S)

201 News Writing 3(3-0)
Instruction and practice in basic news writing skills including interpretation of news values for both print and broadcast media. Required of all majors and minors. Basic typing skills required. Prerequisites: ENG 110 and 211. (F,S)

202 Feature Writing 3(3-0)
Reporting campus events via interpretive articles, news features, straight features, seasonal stories and in-depth articles. Prerequisite: MACOM 201. (F,S)

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. (S)

216 Advertising 3(3-0)
Principles of advertising on local and national levels for newspapers, magazines, radio and television. (F,S)

222 Broadcast News Writing 3(3-0)
Preparation of copy for radio/television news reports, interviews and commentary. Prerequisites: MACOM 102 and 201. (F)

224 (SPCOM 224) Broadcast Announcing 3(3-0)
Study and application of the principles of oral communication to radio and television announcing. (F)

226 Introduction to Television Production 4(2-4)
Concepts, skills and technical facilities involved in production of television programs. Emphasis on the understanding of the technical equipment used in program broadcasting. Prerequisite: MACOM 101. (F)

235 Women and 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. (S)

250 Media Lab 1(0-2)
A laboratory course for students involved in university publications and campus broadcast operations. May be repeated for up to four credits. Prerequisite: permission of instructor. (F,S,SS)

251 Sports Writing and Statistics 3(2-3)
Study and practical application of sports writing and statistics; emphasis on press box experience at intercollegiate athletic events. Repeatable once. Prerequisites: MACOM 201 and 202. (F,S)

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. (F,S)

280 Public Relations 3(3-0)
Historical and theoretical approach to contemporary public relations, with emphasis on the public relations process and ethics of contemporary practice. GEN.ED.IIB. (F,S)

301 Editorial Writing 3(3-0)
Study of editorial page management and policy, with emphasis on preparation of editorials, columns and critical reviews. Prerequisites: MACOM 201 and 202. (F)

302 Advertising Writing 3(3-0)
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. Prerequisite: MACOM 216 or permission of instructor. (S)

311 Copy Editing and Makeup 3(3-0)
News evaluation, copyreading, rewriting, headline writing, page makeup and similar duties of the newspaper copy editor. Prerequisites: MACOM 201 and 202. (F)

316 Advertising Campaigns 3(3-0)
Practical application of planning and development of advertising campaigns for print and broadcast me-

dia; emphasis on the use of creative strategy. Prerequisite: MACOM 216 or permission of instructor. (F)

317 Advertising Strategy 3(3-0)
Seminar emphasizing tactics and strategies of advertising planning, utilizing media techniques, marketing posture and creative media buying. Prerequisites: MACOM 216 and 316. (S)

318 Retail Advertising 3(3-0)
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. Prerequisites: MACOM 216 and 316. (S)

319 Direct Advertising 3(3-0)
An advanced course stressing the philosophy, objectives, content and development of direct response advertising, particularly direct mail and computer-generated messages. Prerequisite: MACOM 216. (F)

320 Broadcast Station Programming 3(3-0)
Program types used on broadcast stations; analysis of network structure and local station programs; ethical requirements in programming. Prerequisites: MACOM 222, 224 and 226. (S)

326 Advanced Television Production 4(2-4)
Television studio and control room operation; emphasis on video console equipment, cameras, microphones, stagecraft and lighting. Prerequisite: MACOM 226. (S)

350 Advanced Media Laboratory (2-4 VAR)
An advanced laboratory course for students involved in university publications and campus broadcast operations. May be repeated for up to 10 credits. Prerequisites: junior or senior standing; permission of instructor. (F,S,SS)

401 Photographic Procedures 4(3-2)
Practical course in pictorial reporting; emphasis on spot news features, picture stories and photographic essays. Prerequisite: junior or senior standing. (S)

402 Photojournalism 4(3-2)
Practical course in pictorial reporting; emphasis on spot news features, picture stories and photographic essays. Prerequisite: MACOM 401. (S)

411 Journalism Law and Ethics 5(5-0)
Ethical and legal factors of mass communications related to the structure and substance of laws at federal, state and local levels, including freedoms, restraints and contemporary issues. Prerequisite: junior or senior standing. (F,S)

415 Theories of Mass Communications 3(3-0)
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. Prerequisite: MACOM senior standing or permission of instructor. (F)

421 Public Relations Case Problems 3(3-0)
Continuation of MACOM 280; emphasis is on client-community problems, press relations, industrial publications, brochures and other specialized public relation tools. Prerequisites: MACOM 202, 222 and 290. (F)

422 Public Relations Campaigns 3(3-0)
Simulated independent public relations agency approach to developing and implementing public relations campaigns; emphasis on practical application of agency-client relations and problem solving. Prerequisite: MACOM 421. (S)

423 Writing for Public Relations 3(3-0)
A specialized writing course for students planning careers in public and corporate relations, with emphasis on news releases, newsletters, product manuals, annual reports, brochures and multi-media presentations. Prerequisites: MACOM 201 and 202. (F,S)

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. (F,S)

426 TV Documentary Production 3(3-0)
Actual experience in planning, scripting and producing documentary video production on locations throughout southeastern Colorado for broadcast and public service agencies. Prerequisites: MACOM 226 and 326; permission of instructor. (S)

440 Magazine Writing 3(3-0)
Instruction and practice in writing nonfiction magazine articles, with emphasis on story research and market selection. Prerequisites: MACOM 201 and 202. (S)

445 Reporting Public Affairs 5(4-3)
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. Prerequisites: MACOM 201 and 202. (S)

450 Film Criticism in the Media 3(3-0)
The role and function of the film critic in television and print journalism, with emphasis on writing the critical review. Prerequisite: senior standing. (F,S)

490 Special Projects 3(0-3)
Individualized instruction within a special interest area, under supervision of a member of the department. Repeatable once. Prerequisite: junior or senior standing or permission of instructor. (F,S,SS)

491 Special Topics (1-3 VAR)
Prerequisite: junior or senior standing or permission of instructor. (F,S)

493 Seminar 3(3-0)
Seminar devoted to special problems in mass media; emphasis on interrelationships of media, understanding media, and the role of criticism. Prerequisite: senior standing. (F,S)

494 Field Experience (3-10 VAR)
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. Prerequisite: junior or senior standing, minimum of 30 hours in major, or permission of program chair. (F,S,SS)

495 Independent Study 2(0-2)
Prerequisite: junior or senior standing or permission of instructor. (F,S)

GRADUATE COURSE

591 Special Topics (1-3 VAR)
Prerequisite: graduate standing. (F,S,SS)

MATHEMATICS (MATH)

UNDERGRADUATE COURSES

109 Mathematics for Everyone 3(3-0)
General education course designed to broaden the student's problem-solving ability. GEN. ED. IIIE. (*)

120 A Survey of Mathematics 4(4-0)
This course focuses on quantitative reasoning and problem solving. Topics will be selected from logic, sets, algebra, probability, statistics, number theory, mathematics systems, geometry, and counting techniques. Prerequisite: one year of high school algebra. (F,S,SS)

121 College Algebra 4(4-0)
Functions, solutions of polynomial and radical equations, exponential and logarithmic functions, systems of equations, matrices, and determinants. GEN.ED.IIIE. Prerequisite: MATH 120 or three years of high school mathematics. (F,S,SS)

122 College Trigonometry 2(2-0)
Trigonometric and circular functions, identities, inverse functions, vectors, complex numbers. GEN.ED.IIIE. Prerequisite: MATH 121 or equivalent. (F,S)

124 Precalculus Math 5(5-0)
Polynomial, rational, exponential and logarithmic functions; solutions of systems of equations; trigonometric, circular and certain special functions. GEN.ED.IIIE. Prerequisite: two years of high school algebra or equivalent. (F,S)

126 Calculus and Analytic Geometry I 5(5-0)
Introduction to analytic geometry, functions, limits, continuity, differentiation and integration of algebraic functions, the theory of calculus and selected applications. GEN.ED.IIIE. Prerequisite: MATH 124 or equivalent. (F,S)

131 Algebra/Trigonometry for Engineering Technology I 4(4-0)
Integrated sequence (131-132) covering topics in algebra, trigonometry, and analytic geometry, with engineering applications. GEN.ED.IIIE. Prerequisite: two years of high school algebra or equivalent. (F,S)

132 Algebra/Trigonometry for Engineering Technology II 4(4-0)
Continuation of MATH 131. GEN.ED.IIIE. Prerequisite: MATH 131. (F,S)

156 Introduction to Statistics 3(3-0)
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. Prerequisite: two years of high school algebra or equivalent. (F,S,SS)

207 Matrix and Vector Algebras with Applications 2(2-0)
Systems of equations, matrix representation of systems, methods of solutions of systems, inverses, determinants, and Cramer's Rule. Vectors, scalar, and cross-products, applications to 2- and 3-dimensional geometry, spherical and cylindrical coordinates. GEN.ED.IIIE. Prerequisite: MATH 121, 124 or equivalent. (F,S)

221 Applied Calculus: An Intuitive Approach 5(5-0)
Non-rigorous introduction to calculus with emphasis on applications and modeling in the life sciences, social and behavioral sciences and business. GEN.ED.IIIE. Prerequisite: MATH 121 or equivalent. (S)

224 Calculus and Analytic Geometry II 5(5-0)
Applications of differentiation and integration; operations on trigonometric, logarithmic and other transcendental functions; and infinite serges. Prerequisite: MATH 126. (F,S)

231 Calculus for Engineering Technology I 3(3-0)
Integrated sequence (231-232) covering topics in differential and integral calculus with emphasis on engineering applications. GEN.ED.IIIE. (F,S)

232 Calculus for Engineering Technology II 3(3-0)
Continuation of MATH 231. GEN.ED.IIIE. (F,S)

245 Introduction to Discrete Mathematics 3(3-0)
Logic, algebra of sets, permutations, and combinations, relations and functions, graph theory, trees, recurrence relations and induction. GEN.ED.IIIE. Prerequisite: MATH 121 or equivalent. (S)

255 Non-parametric Methods 2(2-0)
Topics include different tests for one sample case, two and K-related or independent samples case and their normal approximations. Prerequisite: MATH 126 or one semester of statistics. (*)

291 Special Topics (1-3 VAR)
Prerequisite: permission of instructor and approval of the department chair. (F,S)

307 Introduction to Linear Algebra 3(3-0)
Matrices, vectors, vector spaces, linear transformations, and change of basis. Application topics are included. Prerequisite: MATH 126 and 207 or equivalent. (F,S)

320 Introduction to Mathematical Thought 3(3-0)
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). Prerequisite: MATH 224 or its equivalent. (F,S)

325 Intermediate Calculus 3(3-0)
Continuation of MATH 224: solid analytic geometry, vector operations in three dimensions, multivariable calculus. Prerequisite: MATH 207 and 224. (F,S)

327 Introduction to Algebraic Systems 3(3-0)
Introduction to various algebraic systems such as groups, rings, and fields and their elementary properties. Properties of the integers and other common number systems. Prerequisite: MATH 320 or permission of instructor. (S)

330 Introduction to Higher Geometry 4(4-0)
Euclidean, hyperbolic, finite, and transformation geometries, models, and constructions. Prerequisite: MATH 224 or permission of instructor. (F)

337 Differential Equations I 3(3-0)
First order differential equations, homogeneous and non-homogenous linear differential equations, introduction to the Laplace transform, applications. Prerequisite: MATH 224 or equivalent. (F,S)

338 Differential Equations II 3(3-0)
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. Prerequisites: MATH 325, 337. (#)

342 Introduction to Numerical Analysis 3(3-0)
Finding numerical solutions of polynomial, differential, integral, and other equations using the computer. Prerequisites: MATH 307 and FORTRAN or permission of instructor. (F)

348 Numerical Methods 3(3-0)
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. Prerequisites: MATH 224, 307 and a high-level programming language. (##)

350 Probability 3(3-0)
Introduction to elementary probability theory and stochastic processes. Probability spaces, random variables and their distributions, exponential and Poisson processes, limit theorems and applications. Prerequisite: MATH 224. (F)

353 Sampling and Survey Methods 2(2-0)
Nature and rationale of basic sample survey designs, ratio estimation and sampling from wildlife populations. Prerequisite: one semester of statistics. (*)

360 Mathematics for Elementary Teachers I 3(3-0)
Sets, numeration systems, whole numbers, algorithms, number theory, integers and intuitive geometry. Prerequisite: MATH 120. (F,S)

361 Mathematics for Elementary Teachers II 3(3-0)
Metric geometry, rational numbers, real numbers, logic, mathematical systems, metric system, probability and statistics. Prerequisite: MATH 360. (F,S)

377 Materials and Techniques of Teaching Secondary School Mathematics 4(4-0)
Instructional materials, methods, evaluation and other related topics. (S)

411 Introduction to Topology 3(3-0)
Introduction to topological, compact, connected and metric spaces. Continuous functions and separation properties. Prerequisite: MATH 320. (#)

421 Advanced Calculus I 3(3-0)
Rigorous development of concepts of elementary calculus, sequences and series, uniform convergence, partial derivatives, Stieltjes integral and metric spaces. Prerequisites: MATH 320 and 325. (F)

422 Advanced Calculus II 3(3-0)
Continuation of MATH 421. Prerequisite MATH 421. (*)

425 Complex Variables 3(3-0)
Complex numbers, sequences and series, derivatives and integrals, analytic functions, conformal mappings. Prerequisite: MATH 325. (##)

443 Optimization Techniques 3(3-0)
Linear programming and its derivatives, network optimation and their applications to practical problems. Prerequisites: MATH 307 and FORTRAN or departmental permission. (*)

445 Discrete Mathematics 3(3-0)
Topics selected from mathematical reasoning, combinatorial techniques, set theory, binary relations, functions and sequences, algorithm analysis, and discrete analysis. Prerequisites: MATH 224, 307 and knowledge of a programming language, MATH 271 recommended. (##)

450 Design and Analysis of Experiments 4(4-0)
Design and analysis of experimental studies, including randomized block, Latin square and factorial experiments; general regression analysis of variance. Prerequisite: two semesters of statistics. (*)

456 Applied Statistics I 3(3-0)
Probability space, discrete and continuous random variables; distributions; mathematical expectation; sampling; statistical inference; Bayesian rule; and linear regression. Prerequisite: MATH 224. (F,S)

463 History or Mathematics 2(2-0)
Survey of the origins of important mathematical concepts and of the mathematicians responsible for these discoveries. Prerequisite: MATH 320. (F)

491 Special Topics (1-3 VAR)
Prerequisite: permission of instructor. (F,S)

493 Seminar (1-3 VAR)
Prerequisite: senior standing, permission of instructor. (F,S)

495 Independent Study (1-3 VAR)
Prerequisite: senior standing, permission of instructor. (F,S)

GRADUATE COURSES

501 Foundations of Mathematics 3(3-0)
Sets, logic, axiomatics, mappings and the various sub-systems of the reals for beginning graduate students. Prerequisite: graduate standing. (*)

507 Linear Algebra 3(3-0)
Vector spaces, matrices, eigenvalues, linear functionals and dual space and selected applications. Prerequisite: graduate standing. (*)

521 Intermediate Analysis 3(3-0)
Point set theory including the Heine Borel theorem, continuity, differentiation, sequences and series and the Riemann-Stieltjes integral. Prerequisite: graduate standing. (*)

527 Abstract Algebra 3(3-0)
Groups, rings, integral domains, quotient rings, ideals, fields, homomorphisms and related topics. Prerequisite: graduate standing. (*)

530 Advanced Geometry 3(3-0)
Foundations of geometry, transformations, types of geometry and selected Euclidean and non-Euclidean topics. Prerequisite: graduate standing. (*)

541 Computers 3(3-0)
Preparation for teachers in utilizing the computer to teach secondary school mathematics. Prerequisite: graduate standing. (*)

544 Mathematical Methods of Applied Science 3(3-0)
Topics in applied mathematics for engineering and management; emphasis on the application of mathematical techniques to problems in business and industry. Topics include deterministic and stochastic models, programming, optimization, networks and simulation. Prerequisites: graduate standing and MATH 221 or equivalent. (F)

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. (*)

560 Concepts in Elementary School Mathematics (1-3 VAR)
Problems of the curriculum, methods of teaching and evaluation in the elementary school. (SS)

577 Concepts in Secondary School Mathematics (1-3 VAR)
Problems of teaching secondary school mathematics; the slow learner, methods, gifted students, evaluation. (*)

591 Special Topics (1-3 VAR)
(*)

595 Independent Study (1-2 VAR)
(*)

MECHANICAL ENGINEERING TECHNOLOGY (MET)

UNDERGRADUATE COURSES

103 Machining Technology 3(1-4)
Functions, applications, tooling and operation of basic machine tools, including basic layout work, cutting tool geometry, and machining sequences. (CE,F)

104 Welding Technology 3(1-4)
Welding and cutting processes including arc welding techniques for shielded metal, gas tungsten and gas metal, and oxyacetylene welding, brazing and cutting. Electrode and gas selection, weldability of metals, joint design, welding defects, distortion control and weld testing. (CE,S)

105 Materials for Engineering Applications 3(3-0)
Atomic structure, bonding and arrangement of atoms in materials; behavior and properties of engineering materials including ceramic, polymetric and composite materials. Phase diagrams, microstructure, deformation and recrystallization; transformations and properties-structure relationships. Prerequisite: CHEM 111. (CE,S)

105L Materials Lab 1(0-2)
Demonstrating material properties and characteristics through experimentation. Corequisite: MET 105. (CE,S)

111 Introduction to Drafting 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. (CE,F,S)

112 Computer Aided Drafting 3(1-4)
Computer aided drafting to include geometric constructions, orthographic projections, sectioning, dimensioning, isometric and 3D drawing. Prerequisite: MET 111. (CE,F,S)

152 Applied Physical Metallurgy 2(2-0)
Properties, structure, and testing of metals. Behavior of metal during heating, cooling and processing. Heat treatment of steel and surface treatment of metals. (CE,F)

152L Metallurgy Lab 1(0-2)
Conducting basic metallurgical experiments and examining metallurgical properties. Corequisite: MET 152. (CE,F)

202 Statics 3(3-0)
Basic concepts and application of static forces; couples, resultants, equilibrium, trusses, cables, friction and centroids. Prerequisite: MATH 132. Corequisite: PHYS 201. (CE,F)

203 Manufacturing Processes I 3(3-0)
Introduction to the processing of materials into useful products. The selection and processing of metal, plastic and ceramic materials in manufacturing operations. Prerequisite: MET 105. (CE,F)

203L Manufacturing Processes I Lab 1(0-2)
Demonstrating manufacturing processing technologies. Corequisite: MET 203. (CE,F)

204 Manufacturing Processes II 2(2-0)
A continuation of MET 203. Prerequisite: MET 203. (CE,S)

204L Manufacturing Processes II Lab 1(0-2)
Manufacturing processing experimentation. Corequisite: MET 204. (CE,S)

206 Strength of Materials 2(2-0)
Stress-strain relationships, elastic and plastic; tension, compression, shear, torsion, bending and combined stresses, columns and photoelasticity. Prerequisites: MET 105 and 202. (CE,S)

206L Strength of Materials Lab 1(0-2)
Demonstrating the relationships that govern the strength properties of materials. Corequisite : MET 206. (CE,S)

291 Special Topics (1-3 VAR)
(*)

304 Industrial Radiography 2(2-0)
Principles and operations of X-ray and gamma ray sources for radiographic examinations. Development of radiographic techniques using a 250 KV X-ray unit. Prerequisite: MET 105. (*)

304L Radiography Lab 1(0-2)
Developing X-ray and gamma ray techniques for nondestructive testing. Corequisite: MET 304. (*)

305 Computer Programming and Algorithms 3(3-0)
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. Prerequisite: MATH 132 or equivalent. (F)

315 Nondestructive Testing 2(2-0)
Determination of quality without change to the material by using appropriate nondestructive testing technologies. Prerequisite: MET 105. Corequisite: MET 315L. (*)

315L Nondestructive Testing Lab 1(0-2)
Conducting nondestructive testing using eddy current, liquid penetrant, magnetic particle, leak testing and radiography. Corequisite: MET 315. (*)

322 Dynamics of Machinery 3(3-0)
Basic concepts and application of forces in dynamic and accelerated situations. Prerequisite: MET 202. (F)

341 Thermal and Fluid Principles I 3(3-0)
An introduction to the basic principles of thermal and fluid energy and flow relationships. Prerequisites: PHYS 202 and MATH 232. (S)

352 Design of Machine Elements 3(2-2)
Fundamental concepts in the correct design of the separate elements which compose machines, application of properties and mechanics of materials modified by practical considerations. Prerequisite: MET 206. (F)

352L Machine Elements Lab 1(0-2)
Completion of machine design projects. Corequisite: MET 352. (F)

356 Basic Design Principles 2(2-0)
A study of the progressive stages of investigating, designing, developing, building and testing of a mechanical process or product. Prerequisite: junior standing. (S)

361 Computer Integrated Manufacturing 2(2-0)
A study of the systematic involvement of computer control in all phases of manufacturing. Prerequisite: MET 204 and MATH 131. (S)

361L Manufacturing Lab 1(0-2)
Demonstrating applications of computer technologies in manufacturing. Corequisite: MET 361. (S)

371 CNC Machine Tools 2(2-0)
Principles of numerical control (NC) and computerized numerical control (CNC) machine tool programming and operations. Prerequisite: MET 361. (*)

371L CNC Machine Tools Lab 1(0-2)
Fabricating parts using a CNC lathe and a CNC milling machine. Corequisite: MET 371. (*)

441 Thermal and Fluid Principles II 2(2-0)
A study of the controlling factors that influence the design of thermal and fluid systems. Prerequisite MET 341. (F)

441L Thermal and Fluid Principles II Lab 1(0-2)
Experimenting with thermal and fluid systems. Corequisite: MET 441. (F)

442 Design of Energy Systems 2(2-0)
Applied technology topics in the conversion, storage and use of a variety of energy sources. Prerequisite: MET 441. (S)

442L Energy Systems Lab 1(0-2)
Demonstrating a number of energy technology applications. Corequisite: MET 442. (S)

451 Industrial Robotics 2(2-0)
History, basic theory, kinematics, geometry, control and application. Prerequisite: MET 361. (*)

451L Robotics Lab 1(0-2)
Programming various types of robots to perform different types of tasks. Corequisite: MET 451. (*)

452 Heating, Ventilating and Air Conditioning 2(2-0)
Concepts and techniques in principles and applications of heating, ventilation and air-conditioning. Prerequisite: MET 341. Corequisite: MET 452L. (*)

452L Heating, Ventilating and Air-Conditioning Lab 1(0-2)
Using a climate controlled room to measure and observe the various effects of heating, ventilating, and air-conditioning. Corequisite: MET 452. (*)

456 Senior Project 1(1-0)
The completion of an individual mechanical engineering technology project. Prerequisite: MET 356. (F)

456L Project Lab 1(0-2)
Work on senior project. Corequisite: MET 456. (F)

460 Instrumentation and Control Systems 2(2-0)
Experimental transducers, methods of laboratory instrumentation, logic circuits and feedback control of experimental processes. Prerequisites: EET 250. (F)

460L Instrumentation Lab 1(0-2)
Electronic experimentation in instrumentation and control systems. Corequisite: MET 460. (F)

491 Special Topics (1-3 VAR)
Prerequisite: junior standing in MET. (*)

493 Seminar (1-3 VAR)
Prerequisite: junior standing in MET. (*)

495 Independent Study (1-3 VAR)
Prerequisite: junior standing in MET. (F,S,SS)

496 Cooperative Education Placement (1-3 VAR)
Work experience under the direction of field supervisor and faculty member. Prerequisite: permission of department head; junior standing in MET. (F,S,SS)

MILITARY SCIENCE (MILSC) (Reserves Officers' Training Corps Program)

UNDERGRADUATE COURSES

101 Adventure Training and Army Systems Introduction 1(1-0)
Adventure training in the form of rappelling; basic knowledge of the US Army, its organizational structure and how it interfaces with civilian governmental agencies. (F)

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. (S)

201 Orienteering 1(1-0)
Introduction to map reading skills and techniques. Incorporates training and planning, execution, and leadership skills. (F)

202 Basic Mountaineering Techniques 1(1-0)
Introduction to mountaineering skills and techniques. Includes planning, leadership and practical applications. Skills required by both military and civilian leaders and managers, including survival, leadership, and managerial skills. (S)

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. (SS)

211 (SPCOM 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.E-D.IG. (F,S)

301 Leadership and Basic Tactical Theory 3(3-0)
Fundamentals of leadership and tactical theory reinforced through practical application during weekly leadership laboratories; application of leadership knowledge and foundation of sound tactical principles in developing and evaluating courses of action in tactical situations. Prerequisite: sophomore standing. (F)

301L Leadership and Basic Tactical Lab 1(0-2)
Corequisite: MILSC 301. (F)

302 Leadership and Advanced Tactical Theory 3(3-0)
Leadership theory and research; emphasis on applicability to the Army leadership phenomenon. Also, theory and practice in preparing and presenting instruction. (S)

302L Leadership and Advanced Tactical Lab 1(0-2)
Prerequisite: MILSC 301. Corequisite: MILSC 302. (S)

304 ROTC Advanced Camp 6(0-6)
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.) (SS)

310 Principles of Management 3(3-0)
Decision making, communication and leadership principles in business and nonprofit organizations. (F,S,SS)

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. (F)

402 Ethics, Professionalism and Army Management Systems 3(3-0)
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. (S)

402L Ethics, Professionalism and Army Management Systems Lab 1(0-2)
Corequisite: MILSC 402. (*)

MUSIC (MUS)

UNDERGRADUATE COURSES

100 Fundamentals of Music 3(3-0)
An in-depth study of the elements and basic principles that relate directly to the structure and function of musical composition. (F,S)

101 Theory I 3(3-0)
A re-creative course in composition and analysis in four-part harmony. A detailed study of the relationship of diatonic chords within major and minor tonalities. Corequisite: MUS 101L. (F)

101L Theory I Lab 1(0-2.5)
Keyboard harmony, sight singing, ear training, playing, singing and discriminatory listening to music toward the ends of developing concepts of melody, harmony and rhythm. Corequisite: MUS 101. (F)

102 Theory II 3(3-0)
A re-creative course in composition and analysis in four-part harmony. A detailed study of relationships existing between diatonic and altered sonorities.

Form and musical style. Prerequisite: MUS 102L. Corequisite: 102L. (S)

102L Theory II Lab 1(0-2.5)
Keyboard harmony, sight singing and ear training. Prerequisite: MUS 101. Corequisite: MUS 102. (S)

110 Career Planning in Music 1(1-0)
Identifying career options in music and creating a personalized educational program. (F)

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. (F,S,SS)

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. (F,S)

120 Jazz and Folk Music 3(3-0)
Beginning and development of jazz and folk music in the United States. GEN.ED.IE. (F,S)

126 Introduction to Opera 3(3-0)
A survey of operas performed by major opera companies today. GEN.ED.IE. (S)

144 Woodwind Class 1(0-2.5)
Techniques employed and problems confronted in teaching and playing woodwind instruments. (F)

145 Brass Class 1(0-2.5)
Techniques employed and the problems confronted in teaching and playing brass instruments. For K-12 music education students. (S)

147 Functional Piano Class 1(0-2.5)
For students with little or no background in keyboard instruments. Explores the basic fundamentals of piano playing. Additional rehearsals and performance activities may be required. (F,S)

161 Applied Music Major 2(0-1)
In-depth study of the performance practices of keyboard, brass, woodwind, percussion, string instrument, or voice. One hour per week Symposium attendance required. (F)

162 Applied Music Major 2(0-1)
Continuation of 161. One hour per week Symposium attendance required. (S)

163 Applied Music Minor 1(0-.5)
One-half hour per week private lesson designed for music minors or music majors studying a second instrument. One hour per week Symposium attendance required. (F)

164 Applied Music Minor 1(0-.5)
A continuation of MUS 163. One hour per week Symposium attendance required. (S)

170 Band 1(0-2.5)
Prerequisite: permission of instructor. (F,S)

171 Choir 1(0-2.5)
Prerequisite: permission of instructor. (F,S)

172 Piano Ensemble 1(0-2.5)
Prerequisite: permission of instructor. (F,S)

173 Guitar Ensemble 1(0-2.5)
Ensemble specializing in the performance of appropriate guitar literature. May be repeated for credit. Additional rehearsals and performance activities may be required. Prerequisite: permission of instructor. (F,S)

174 Orchestra 1(0-2.5)
Ensemble specializing in the performance of appropriate string chamber music literature. Additional rehearsals and performance activities may be required. Prerequisite: permission of instructor. (F,S)

175 Private Lesson 1(0-.5)
Applied music study for the non-music major. Prerequisite: permission of instructor. (F,S)

176 Flute Choir 1(0-2.5)
Ensemble specializing in the performance of appropriate flute literature. May be repeated for credit. Prerequisite: permission of instructor. (F,S)

181 Lab Choir 1(0-2.5)
A lab choir in which students of varied performance backgrounds can gain experience in performance with an instrumental ensemble. (F)

182 Lab Band 1(0-2.5)
A concert band in which students of varied performance backgrounds can gain experience in performance with an instrumental ensemble. (S)

186 Beginning Guitar Class I 1(0-2.5)
For the non-musician. Application of both melodic and chordal (rhythmic) media; introduction to the basic folk music of America. Prerequisite: permission of instructor. (F)

187 Beginning Guitar Class II 1(0-2.5)
For the student with slight knowledge of the instrument.

Finger-picking techniques and chordal harmonization; chords covering the entire spectrum of the instrument. Prerequisite: MUS 186 or permission of instructor. (S)

188 Jazz Band 1(0-2.5)
Open to all regularly enrolled university students by audition. May be repeated for credit. Prerequisite: permission of instructor. (F,S)

189 Brass Choir 1(0-2.5)
Explores special brass literature from all style periods. May be repeated for credit. Prerequisite: permission of instructor. (F,S)

192 Percussion Ensemble 1(0-2.5)
Explores unique percussion literature. May be repeated for credit. Prerequisite: permission of instructor. (F,S)

193 Small Ensemble 1(0-2.5)
For students desiring to perform in a small group other than the major ensemble. (F,S)

201 Theory III 3(3-0)
Music fundamentals, basic diatonic harmony in small homophonic forms. Analysis and application of the concepts of musical styles. Prerequisite: MUS 102. Corequisite: MUS 201L. (F)

201L Theory III Lab 1(0-2.5)
Development of keyboard skills, keyboard harmony, sight singing and ear training exercises to accompany appropriate analytical/compositional techniques. Prerequisite: MUS 102, 102L. Corequisite: 201. (F)

202 Theory IV 3(3-0)
Continuation of MUS 201. Use of chromatic harmony in Baroque, Classic, Romantic and 20th century musical styles. Prerequisite: MUS 201 and 201L. Corequisite: MUS 202L. (S)

202L Theory IV Lab 1(0-2.5)
Continuation of MUS 201L. Prerequisite: MUS 201 and 201L. Corequisite: MUS 202. (S)

210 Electronic Music 3(3-0)
Scientific and aesthetic practices employed in sound recording studio and electronic music. Intensive experience with various types of synthesizers. Several computer music software programs are introduced. (F,S)

241 String Class 1(0-2.5)
Techniques employed and problems confronted in teaching string instruments. For K-12 music education students. (F)

242 Percussion Class 1(0-2.5)
Techniques employed and problems confronted in teaching and playing percussion instruments, tuned and untuned. (S)

246 Voice Class 1(0-2.5)
Fundamental approach to beginning techniques of singing presented in a group situation. (F,S)

261 Applied Music Major 2(0-1)
In-depth study of performance practices of keyboard, brass, woodwind, percussion or string instruments. Prerequisite: MUS 162. One hour per week Symposium attendance required. (F)

262 Applied Music Major 2(0-1)
Continuation of MUS 261. Prerequisite: MUS 261. One hour per week Symposium attendance required. (S)

263 Applied Music Minor 1(0-.5)
One-half hour per week private lesson designed for music minors or music majors studying a secondary instrument. One hour per week Symposium attendance required. (F)

264 Applied Music Minor 1(0-.5)
A continuation of MUS 263. One hour per week Symposium attendance required. (S)

275 Beginning Jazz Improvisation 2(2-0)
For students with little or no background in performing jazz. Explores the basic fundamentals of playing jazz. May be repeated for lower-division credit. (F)

276 Jazz Improvisation I 2(2-0)
Continuation of MUS 275. May be repeated for lower-division credit. (S)

291 Special Topics (1-3 VAR)
(*)

305 Computer and Electronic Technology in Music 1(0-2.5)
Study of computer hardware and software involved in composing, sequencing, performing and printing music. Prerequisites: MUS 101, 102 or permission of instructor. (F,S)

321 Music History I 3(3-0)
A comprehensive survey of music history from the Medieval Era, with consideration of ancient sources,

through the Baroque Era and Pre-Classic Style. Prerequisite: MUS 118. (F)

322 Music History II 3(3-0)
A comprehensive survey of music history from the Classic Era through the present. Prerequisite: MUS 321. (S)

324 Piano Literature 2(2-0)
Survey of piano literature from the 18th-century to the present. (F)

347 Piano Pedagogy I 2(2-0)
Introduction to the practices in teaching private and class piano. (F)

348 Piano Pedagogy II 2(2-0)
Continuation of MUS 347. Prerequisite: MUS 347. (S)

349 Conducting I, Choral 2(2-0)
Techniques and methods of conducting choral ensembles. Corequisite: MUS 181 or 381 or MUS 377. (F)

350 Conducting II, Instrumental 2(2-0)
Techniques and methods of conducting instrumental ensembles. Prerequisite: MUS 349. Corequisites: MUS 182 or 382 or MUS 378. (S)

351 Principles of Music in the Elementary School 1(1-0)
A lecture course dealing with the principles and methods of teaching music in the elementary school, for the elementary education major. (F,SS)

352 Music in the Elementary School 2(2-0)
A course for music education majors in logical steps in developing music skills and music appreciation throughout the elementary grades. (S)

361 Applied Music Major 2(0-1)
Continuation of MUS 262 for the junior music student. Prerequisite: MUS 262. One hour per week Symposium attendance required. (F)

362 Applied Music Major 2(0-1)
Continuation of 361. Prerequisite: MUS 361. One hour per week Symposium attendance required. (S)

363 Applied Music Minor 1(0-.5)
One-half hour per week private lesson designed for music minors or music majors studying a second instrument. One hour per week Symposium attendance required. (F)

364 Applied Music Minor 1(0-.5)
Continuation of MUS 363. One hour per week Symposium attendance required. (S)

370 Band 1(0-2.5)
Continuation of MUS 170. May be repeated for credit. Prerequisite: MUS 170 or permission of instructor. (F,S)

371 Choir 1(0-2.5)
Continuation of MUS 171. May be repeated for credit. Prerequisite: MUS 171 or permission of instructor. (F,S)

372 Piano Ensemble 1(0-2.5)
Continuation of MUS 172. May be repeated for credit. Prerequisite: MUS 172 or permission of instructor. (F,S)

373 Guitar Ensemble 1(0-2.5)
Continuation of MUS 173. May be repeated for credit. Prerequisite: MUS 173 or permission of instructor. (F,S)

374 Orchestra 1(0-2.5)
Ensemble specializing in performance of appropriate string chamber literature. Continuation of MUS 174. May be repeated for credit. Prerequisite: MUS 174 or permission of instructor. (F,S)

376 Flute Choir 1(0-2.5)
Continuation of MUS 176. May be repeated for credit. Prerequisite: MUS 176 or permission of instructor. (F,S)

377 Materials and Techniques of Teaching Choral Music 2(2-0)
Comprehensive study in materials, techniques, methods and problem solving necessary for the teacher of choral music in the public schools. Prerequisites: MUS 144, 145, 241, 242, 245 and 246. (F)

378 Materials and Techniques of Teaching Instrumental Music 2(2-0)
Continuation of MUS 377. Comprehensive study of materials, methods and problem-solving techniques necessary for the teacher of instrumental music in the public schools. (S)

381 Lab Choir 1(0-2.5)
Continuation of MUS 181. Prerequisite: MUS 181. Corequisite: MUS 349 or 377. (F)

382 Lab Band 1(0-2.5)
A concert band in which students of varied performance backgrounds can gain experience in performance with an instrumental ensemble. May be repeated for credit. Prerequisite: MUS 182. Corequisite: MUS 350 or 378. (S)

383 Percussion Ensemble 1(0-2.5)
Continuation of MUS 192. May be repeated for additional credit. Prerequisite: MUS 192 or permission of instructor. (F,S)

388 Stage Band 1(0-2.5)
Continuation of MUS 188. May be repeated for credit. Prerequisite: MUS 188 or permission of instructor. (F,S)

389 Brass Choir 1(0-2.5)
Continuation of MUS 189. May be repeated for credit. Prerequisite: MUS 189 or permission of instructor. (F,S)

393 Small Ensemble 1(0-2.5)
For students desiring to perform in a small group other than the major ensemble. (F,S)

400 Arranging/Orchestration I 2(2-0)
Techniques of scoring for all instrumental combinations. Prerequisites: MUS 101, 102, 201 and 202. (F)

401 Arranging/Orchestration II 2(2-0)
Continuation of MUS 400. Prerequisite: MUS 400. (S)

420 Counterpoint 2(2-0)
A re-creative course in 16th-, 18th- and 20th-century contrapuntal styles. Composing music in two, three and four voices as appropriate to the three periods. Prerequisite: MUS 202. (F)

421 Analytical Techniques 2(2-0)
A study of form and style in music in a historical context. Analysis of music from several style periods, Middle Ages into the 20th century. (S)

430 Practicum in Music I 2(0-5)
For the advanced music student to practice the teaching of music by assisting in the teaching of applied music groups within the department. (*)

431 Practicum in Music II 2(0-5)
Continuation of MUS 430. (*)

461 Applied Music Major 2(0-1)
Continuation of MUS 362 for the senior music student. Prerequisite: MUS 362. One hour per week Symposium attendance required. (F)

462 Applied Music Major 2(0-1)
Continuation of MUS 461. Prerequisite: MUS 461. One hour per week Symposium attendance required. (S)

463 Applied Music Minor 1(0-.5)
One-half hour per week private lesson designed for music minors or music majors studying a second instrument. One hour per week Symposium attendance required. (F)

464 Applied Music Minor 1(0-.5)
A continuation of MUS 463. One hour per week Symposium attendance required. (S)

475 Symphonic Jazz Ensemble 1(0-2.5)
Open to all regularly enrolled university students and members of the community by permission. May be repeated for credit. Additional rehearsals and performance activities may be required. Prerequisite: permission of instructor. (F,S)

495 Independent Study (1-4 VAR)
(*)

GRADUATE COURSES

501 Special Methods in Music Education 2(2-0)
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. Prerequisite: graduate standing. (*)

593 Seminar 2(2-0)
Practical application of current music techniques to secondary teaching. Prerequisite: graduate standing. (*)

NURSING (NSG)

UNDERGRADUATE COURSES

115 Pharmacology in Nursing 3(3-0)
Includes concepts related to drugs, their mechanism of action, potential dangers, and interaction with other drugs. Approach is toward broad classifications and prototypes rather than specific drugs. Prerequisite: permission of instructor. (F,S)

117 Women, Health and Society 2(2-0)
Explores women's health issues as influenced by historical, cultural and socio-economic factors. Issues

examined will include sexuality, depression and anxiety, eating disorders, abuse and battering, menopause, breast cancer, nutrition and exercise. (F,S)

202 Introduction to Health Careers 3(3-0)
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 and experiences in selected careers are conducted. RN, LPN, certain health care professionals are exempt. Does not require admission to program. (F,S)

202L Introduction Health Careers Lab 1(0-2)
Focuses on providing skills necessary for basic safe care of clients. Does not require admission to program. (F,S)

291 Special Topics (1-4 VAR)
Topics and/or nursing skills, for enrichment of required nursing courses, and which serve the interest of 10 or more students will be considered. Prerequisite: permission of instructor. (*)

301 Core Concepts in Nursing I 3(3-0)
Provides basic concepts in mental health communications, nursing theories, research, teaching/learning, legal, ethical, cultural and professional issues applicable in professional nursing. Nursing process and introduction to the conceptual framework for practice are presented. Prerequisites: admission to BSN program. (F,S)

302 Health Assessment: Life Cycle 3(3-0)
Directs the systematic physical assessment of healthy individuals of all ages. Focus on health history, and methods used in physical examination and developmental screening. Admission to program not required for RNs. Prerequisite: admission to BSN program, NSG 301 or RN status. Corequisite: NSG 302L. (CE,F,S)

302L Health Assessment: Life Cycle Lab 1(0-2)
Focus is on development of skill in performing physical examinations, including the selection and use of the appropriate instruments and materials. Corequisite: NSG 302. (CE,F,S)

304 Core Interventions in Nursing I 2(2-0)
Includes theory to provide the principles and practice for skills essential to implement nursing process. Principles for basic nursing skills related to exercise and activity, oxygenation, therapeutic communication, hygiene, and comfort and other therapeutic measures within the framework of practice. Prerequisites: NSG 202, 202L and 301. Corequisite: NSG 304L (F)

304L Core Interventions I Lab 4(0-8)
Laboratory course for practice and development of fundamental nursing care skills in the provision of basic nursing care. Includes on campus and off campus practice setting. Corequisite: NSG 304. (CE,F)

305 Ethical Issues in Health Care 3(3-0)
Selected theories which influence ethical choice in nursing are presented. Areas of the law and legal systems which affect the public health are included. Current ethical issues related to nursing practice. Prerequisite: permission of instructor. (F,S)

306 Introduction to Levels of Prevention 3(3-0)
Introduction to levels of prevention. Focus is on primary prevention and role of the community nurse in health promotion. Effects of nutrition, lifestyle, activity and habits of the well person and selected community health problems are explored. Prerequisites: NSG 202, 202L and 301. (F)

307 Health and Disease Systems 3(3-0)
Alternations and adaptations to disease processes through varying levels of prevention. Includes application of prerequisite anatomy, physiology and chemistry. Does not require admission to program. Prerequisites: B223, B223L, B224, B224L, C111, C111L, C112, C112L and/or permission of instructor. (CE,F,S)

351 Core Concepts in Nursing II 3(3-0)
Introduces beginning research methodology related to professional issues and to concurrent nursing courses. Prerequisites: NSG 301, 302, 302L, 304 and 304L. (S)

352 Primary and Secondary Prevention in the Childbearing Family 3(3-0)
Theory relative to care of the neonate and the child bearing family during the perinatal period. Focus is on the application of primary and secondary levels of prevention. Includes a study of transition to parenthood, parent infant interactions, and internal and external forces that influence sexuality through the life cycles as well as introduction to family theory and role concepts. RNs may proficiency test. Prerequisites: NSG 301,302, 304, 306 and 307. Corequisite: NSG 352L. (CE,S)

352L Primary and Secondary Prevention Lab 3(0-6)
Laboratory course that focuses on the nursing process to plan and implement care for the child bearing family. Includes client education as integral to primary and secondary levels of prevention during the perinatal period. To accompany NSG 352. RNs may proficiency test. Corequisite: NSG 352. (CE,S)

354 Core Interventions in Nursing II 2(2-0)
Introduction of pharmacology as a method of secondary prevention and includes drug classifications related to concurrent nursing course content. Prerequisites: NSG 301, 302, 304/304L and 307. Corequisite: NSG 354L. (F,S)

354L Core Interventions II Lab 1(0-2)
Focus is on application of interventions using pharmacology in client treatment plan with primary emphasis on development of skills used in calculation and administration of drugs and solutions. Principles and techniques for surgical asepsis, medication administration, nasogastirc insertion, and irrigations of tubes are included. Corequisite: NSG 354. (CE,S)

362 Nursing Process in Secondary Prevention 3(3-0)
Principles of secondary prevention for selected short-term acute and chronic conditions of children and adults related to fluid and electrolyte imbalance, skin conditions, burns, cancer, and gastrointestinal conditions, including diabetes mellitus. RNs may proficiency test. Prerequisites: NSG 301, 302, 304/304L, 306 and 307. Corequisites: NSG 354/354L, 362, and 362L. (CE,S)

362L Nursing Process in Secondary Prevention Lab 2(0-4)
Application of nursing process with children and adults experiencing acute and chronic condition. Emphasis is on conditions related to topics covered in NSG 362. RNs may proficiency test. Prerequisites: NSG 301, 302, 304, 306 and 307. Corequisite: NSG 362. (CE,S)

372 Clinical Practicum I 4(0-8)
Application of the nursing process in concentrated clinical practicum includes patient care settings with clients of various ages. RNs demonstrating proficiency in clinical nursing within the last five years are exempt. Prerequisite: NSG 352/352L, 354/354L and 362/362L. (CE,SS)

391 Special Topics (1-5 VAR)
Prerequisite: permission of instructor. (*)

401 Core Concepts in Nursing III 2(2-0)
Expands on concepts introduced in Core Concepts in Nursing I. Emphasis is on ethical, legal, and practice issues in nursing. Prerequisite: NSG 351. (F)

404 Core Interventions in Nursing III 2(2-0)
Continuation of pharmacodynamics, drug classification related to concurrent nursing course content in NSG 410. Prerequisite: NSG 352/352L, 362/362L and 372. Corequisite: NSG 401 and 404L. (F)

404L Core Interventions III Lab 1(0-2)
Practice of principles and techniques related to intravenous medications, tracheal suctioning and chest tubes. Includes introduction to various patient monitors. Prerequisite: NSG 352 or 362, 372, and NSG 401. Corequisite: NSG 404 and 410. (F)

408 Nursing and Psychological Wellness 3(3-0)
Concepts of psychological processes as they relate to mental health and illness of individuals and groups are included. Levels of psychiatric intervention receive special emphasis. Prerequisites: NSG 352 or 362 and 404/404L. Corequisite: NSG 401 and 408L. (F)

408L Nursing and Psychological Wellness Lab 2(0-4)
Practicum course to apply principles and techniques of psychiatric nursing concurrent with NSG 408 content. Prerequisites: NSG 362/362L or 352/352L. Corequisite: NSG 408. (F)

410 Nursing Process in Secondary and Tertiary Prevention 3(3-0)
Focus is nursing process in acute and chronic conditions of all age groups. Emphasis is on conditions related to respiratory, cardiovascular, blood, renal, and gender. Prerequisites: NSG 352/352L, 362/362L and 372. Corequisites: NSG 401, 404/404L and 410L. (F)

410L Nursing Process in Secondary and Tertiary Prevention Lab 2(0-4)
Practicum course for the utilization of nursing process for planning and giving care to acutely ill clients of all age groups. Emphasis on conditions related to topics covered in NSG 410. Prerequisite: NSG 352/352L, 362/362L and 372L. Corequisites: NSG 404/404L and 410. (F)

451 Core Concepts in Nursing IV 3(3-0)
Focus on understanding organizational behavior with primary emphasis on developing strategies for leadership and management in nursing. Included are concepts of leadership, management, collaborative interdisciplinary behaviors, and organizational theory in simple and complex settings. Prerequisite: NSG 401. Corequisites: NSG 452/452L. (F)

452 Nursing Process in Primary, Secondary and Tertiary Prevention 3(3-0)
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 for conditions for all age groups with emphasis on orthopedic, nervous, sensory, and endocrine systems. Prerequisites: NSG 401, 408/408L, 404/404L and 410/410L. Corequisites: NSG 451 and 452L. (S)

452L Nursing Process in Primary, Secondary and Tertiary Prevention Lab 3(0-6)
Practicum course related synthesis of nursing knowledge and application of the nursing process to all levels of prevention. Emphasis is on conditions covered in NSG 452 and application of management theory. Corequisite: NSG 451 and 452. (S)

454 Promotion of Health in Individuals, Families, and Groups 2(2-0)
Nursing process related to family and community systems with a major emphasis on primary and tertiary levels of prevention. Includes concepts of community, large group behavior, health eduation, epidemiology, chronicity, and referral and coordination. Prerequisites: NSG 352/352L, 408/408L and 410/410L. Corequisite: NSG 454L.

454L Promotion of Health in Individuals, Families, and Groups Lab 2(0-4)
Practicum in community health settings with emphasis on application of nursing process to family units. Primary emphasis is family and community assessment and intervention. Corequisite: NSG 454.

472 Clinical Practicum II 4(0-8)
Concentrated practicum course consisting of intermediate application of the nursing process in patient care settings with clients of all age groups in complex care settings. Prerequisite: all junior requirements. (F,S,SS)

492 Research 2(2-0)
Major nursing theories are examined in relation to nursing functions they imply, kinds of hypotheses they would generate, and kinds of research they would stimulate. There is examination of research process, design, methods of collecting and analyzing data, and interpretation of data. Prerequisite: NSG 351. (*)

495 Independent Study (1-6 VAR)
(*)

GRADUATE COURSES

501 Core Concepts V 3(3-0)
Analysis of current nursing theories which guide nursing practice, education, administration and research. Prerequisite: BSN or senior honors. (*)

521 Advanced Health and Disease Systems 4(4-0)
Examination of advanced pathophysiology and accompanying data assessment of the adult that lead to differential nursing diagnosis and subsequent interventions. Prerequisite: BSN or senior honors. (*)

551 Health Systems Management 3(3-0)
Examination of public policy and trends in management, budget and staffing within state and federal guidelines as it relates to nursing. Prerequisite: BSN or senior honors. (*)

PHILOSOPHY (PHIL)

UNDERGRADUATE COURSES

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 "The Republic." GEN.ED.IF. (F,S,SS)

101 Introduction to Problems in Philosophy 3(3-0)
Some of the crucial problems in philosophy, with solutions from the major philosophers. GEN.ED.IF. (F,S,SS)

103 Civilization 1(1-0)
Kenneth Clark's acclaimed film series "Civilization." Thirteen 50-minute films exploring the concept of civilization from the primary viewpoint of the arts and philosophy. GEN.ED.IF. (*)

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. (F,S,SS)

108 Philosophy of Religion I 1(1-0)
A philosophical scrutiny of some of the main concepts of the world's religious traditions through discussion on the thought of outstanding philosophers and theologians with respect to such topics as the existence of God and other supernatural entities, the problem of evil, theodicies, etc. GEN.ED.IF. (F,S)

109 Philosophy of Religion II 1(1-0)
A philosophical study of some of the main concepts of the world's religious traditions through discussions on the thought of outstanding philosophers and theologians with respect to such topics as life after death, metempsychosis, palingenesis, anabiosis, etc. GEN.ED.IF. (F,S)

110 Philosophy of Religion III 1(1-0). (F,S)
A philosophical examination of some of the main concepts of the world's religious traditions through discussions on the thought of outstanding philosophers and theologians with respect to such topics as libertarianism, prescient persons, thaumaturges and thaumatology, etc. GEN.ED.IF. (F,S)

121 Oriental Religions I, India: Hinduism and Buddhism 1(1-0)
GEN.ED.IF. (F,S)

122 Oriental Religions II, China and Japan: Taoism, Confucianism and Shinto 1(1-0)
GEN.ED.IF. (F,S)

123 Oriental Religions III, Lesser Asian Religions: Zoroastrianism, Jainism, Islam and Sikhism 1(1-0)
GEN.ED.IF. (F,S)

205 Deductive Logic 3(3-0)
Study of the principles and methods used to distinguish valid from invalid patterns of deductive reasoning. Especially useful for students in computer or mathematics related fields. GEN.ED.IF. (F,S)

220 Ethics and Values 3(3-0)
Representative ethical theories, and competing conceptions of value and obligations encourage development of an evolving personal value system. GEN.ED.IF. (S)

291 Special Topics (1-3 VAR)
Students who have an area of special interest are encouraged to contact the department. Special topics and authors of philosophical interest. May be repeated for 12 credits maximum. (F,S)

303 Philosophy of Science 3(3-0)
Study of the philosophical issues underlying scientific knowledge. Special consideration to the logical structure of scientific theory. Prerequisite: PHIL 205 or a strong background in experimental science. (#)

305 Medical Ethics 3(3-0)
Current problems of medical ethics such as experimentation on humans, genetic counseling, right to die, abortion, and allopathic medicine. (S)

313 History of Philosophy Seminar I 3(3-0)
Greek, Latin, and medieval philosophy. (S)

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. (S)

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. (S)

401 Epistemology Seminar 3(3-0)
Study of the philosophical principles and issues relevant to various claims of knowledge. Prerequisites: PHIL 205, 313 and 314. (#)

402 Metaphysics Seminar 3(3-0)
Ontology, cosmology, space, time, causality, change, freedom, and other topics of metaphysics. Prerequisites: PHIL 313 and 314. (F)

491 Special Topics (1-3 VAR)
Special topics and 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. (F,S)

GRADUATE COURSE

505 Advanced Philosophical Psychology 3(3-0)
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. Prerequisite: graduate standing. (*)

PHYSICS/PHYSICAL SCIENCE (PHYS)

UNDERGRADUATE COURSES

100 Physical Science 3(2-2)
Hands-on approach to developing an understanding of the basic concepts of contemporary physical science. Integrated lecture, lab, discussion periods. GEN.ED.IIIF. (F,S)

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. (F,S)

130 Physics for Everybody I: Alternate Energy Sources 1(1-0)
A four-week, mini-course designed for students not majoring in science. GEN.ED.IIIF. (F,S)

131 Physics for Everybody II: Lasers 1(1-0)
A four-week, mini-course designed for students not majoring in science. GEN.ED.IIIF. (F,S)

132 Physics for Everybody III: Einstein 1(1-0)
A four-week, mini-course designed for students not majoring in science. GEN.ED.IIIF. (F,S)

133 Physics for Everybody IV: Nuclear Radiation 1(1-0)
A four-week minicourse designed for students not majoring in science. GEN.ED.IIIF. (F,S)

134 Physics for Everybody V: Evolution of the Universe 1(1-0)
A four-week minicourse designed for students not majoring in science. GEN.ED.IIIF. (F,S)

135 Physics for Everybody VI: The Quantum Revolution 1(1-0)
A four-week minicourse designed for students not majoring in science. GEN.ED.IIIF. (F,S)

201 Principles of Physics I 3(3-0)
Motion, forces, conservation of energy and momentum, wave motion, sound and heat. For engineering technology, life sciences, and other interested students. GEN.ED.IIIF. Prerequisite: two years high school algebra. Corequisite: PHYS 201L. (F,S)

201L Principles of Physics I Lab 1(0-2)
GEN.ED.IIIF. Corequisite: PHYS 201. (F,S)

202 Principles of Physics II 3(3-0)
Electrostatics, electromagnetism, light, atomic and nuclear physics. GEN.ED.IIIF. Prerequisite: PHYS 201. Corequisite: PHYS 202L. (F,S)

202L Principles of Physics II Lab 1(0-2)
GEN.ED.IIIF. Corequisite: PHYS 202. (F,S)

221 General Physics I 4(4-0)
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. Prerequisite or Corequisite: MATH 126. Corequisite: PHYS 221L. (S)

221L General Physics I Lab 1(0-2)
GEN.ED.IIIF. Corequisite: PHYS 221. (S)

222 General Physics II 4(4-0)
Electrostatics, electromagnetism, elementary circuits, electrical oscillations, geometrical optics and the wave aspects of light. GEN.ED.IIIF. Prerequisite: PHYS 221. Corequisites: PHYS 221 and 222L. (F)

222L General Physics II Lab 1(0-2)
GEN.ED.IIIF. Corequisite: PHYS 222. (F)

291 Special Topics (1-4 VAR)
(*)

301 Theoretical Mechanics 4(4-0)
Statics and dynamics of particles and rigid bodies. Conservation principles, minimum principles, accelerated coordinate systems, Lagrangian and Hamiltonian methods, vector and matrix methods. Prerequisites: PHYS 221, MATH 325 and MATH 337. (F)

321 Thermodynamics 3(3-0)
Introduction to thermodynamic laws and principles, entropy, kinetic theory and statistical mechanics. Prerequisite: PHYS 221. (F #)

322 Advanced Laboratory-Heat 1(0-2)
Experiments in heat of combustion, heat transfer, thermal electromotive force, viscosity, and specific heat measurements. Prerequisite or Corequisite: PHYS 321. (F #)

323 General Physics III 4(4-0)
Introduction to special relativity, kinetic theory, quantization, wave mechanics, atomic structure, nuclear physics and spectroscopy. Prerequisites: PHYS 222/222L and MATH 224. Corequisite: PHYS 323L. (S)

323L General Physics III Lab 1(0-2)
Corequisite: PHYS 323. (S)

341 Optics 3(3-0)
Geometrical optics, interference, diffraction, polarization of light, optical properties of materials, optical sources including lasers, and holography. Prerequisites: PHYS 222/222L and MATH 325. (F ##)

342 Advanced Laboratory-Optics 1(0-2)
Experiments in interference, diffraction, absorption, spectral characteristics and polarization of light. Prerequisite or Corequisite: PHYS 341. (F ##)

361 Physics of Sound 3(3-0)
Sound waves, sources of sound, physics of hearing, acoustical measurements. For speech correction majors and other interested students. Prerequisite: MATH 120 or equivalent. (F ##)

431 Electricity and Magnetism 4(4-0)
Mathematical treatment of electrostatics, currents, magnetism, electromagnetic induction, Maxwell's equations and electrodynamics. Prerequisites: PHYS 222/222L, MATH 325 and 337. (S ##)

432 Advanced Laboratory-Electricity and Magnetism 1(0-2)
Experiments in electrostatic constants, magnetic effects, capacitance, thermoelectric effects, magnetic properties, inductance, mutual inductance, and production, propagation and diffraction of microwaves. Prerequisite or Corequisite: PHYS 431. (S ##)

441 Quantum Mechanics 4(4-0)
Wave packets, operators, the Schroedinger equation, eigenstates, angular momentum, spin, magnetic moments, Heisenberg formulation. Prerequisites: PHYS 323/323L, MATH 325 and 337. (S #)

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. (F,S)

491 Special Topics (1-4 VAR)
(*)

492 Research 1(0-2)
Prerequisite: eight credits in upper-division physics courses. (F,S)

493 Seminar 1(1-0)
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. Prerequisite: advanced standing with a major or minor in physics. (S #)

495 Independent Study (1-2 VAR)
Prerequisite: junior or senior standing; permission of department chair. (*)

GRADUATE COURSES

531 Electricity and Magnetism 4(4-0)
Mathematical treatment of electrostatics, currents, magnetism, electromagnetic induction, Maxwell's equations and electrodynamics. Prerequisites: PHYS 222/222L, MATH 325,327 and graduate standing. (S ##)

541 Quantum Mechanics 4(4-0)
Wave packets, operators, the Schroedinger equation, eigenstates, angular momentum, spin, magnetic moments, Heisenberg formulation. Prerequisites: PHYS 323/323L, MATH 325, 337 and graduate standing. (S #)

POLITICAL SCIENCE (POLSC)

UNDERGRADUATE COURSES

100 The Study of Politics 3(3-0)
Contemporary political-economic systems and the ideologies which support them. GEN.ED.IIC. (S,SS)

101 American National Politics 3(3-0)
Basic processes in American politics. Principles and structure of national government. GEN.ED.IIC. (F,S,SS)

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. (S)

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. (*)

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. (F)

185 Research in History 2(2-0)
Techniques and skills used in evaluating historical data. GEN.ED.IIC. (S)

201 Comparative Politics 3(3-0)
Introduction to comparative political analysis through study of selected political systems. Emphasis on basic political functions and processes in developed countries. GEN.ED.IIC. (F)

202 World Politics 3(3-0)
Study of political problems and issues which face the world. Emphasis on conflict, arms transfers, economic change and world commons. (S)

210 Techniques of Analysis 3(3-0)
Introduction to the methods of scientific investigation in the social sciences. (F,S)

291 Special Topics (1-3 VAR)
Independent study involving specialized reading and research. (*)

301 Political Parties and Pressure Groups 3(3-0)
History, organization and functions of party politics and pressure group activity with special emphasis on American political processes. Prerequisite: previous work in political science. (F)

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. Prerequisite: previous work in political science or sociology. (S)

305 International Relations 3(3-0)
Study of international systems and organizations. Special emphasis on the principle sources of conflict and the study of conflict management. Prerequisite: POLSC 201 or 202. (S)

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. (F)

321 (HIST 321) American Constitutional Development 3(3-0)
Political context of the origin of the U.S. Constitution, Supreme Court procedures, court decisions defining uses and scope of the powers of the court, the Congress and the presidency. Prerequisite: POLSC 101. (F)

322 American Constitutional Law 3(3-0)
Survey of American constitutional law; emphasis on Supreme Court decisions defining the extent and limits and of governmental authority and the rights of liberties and individual citizens. Prerequisite: POLSC 321 or permission of instructor. (S)

323 Criminal Law and Procedure 3(3-0)
Content and characteristics of criminal law and procedures. Roles and functions of persons and agencies involved in judicial administration. Prerequisite: POLSC 101. (F)

324 Family Law 3(3-0)
Survey of legal issues concerning domestic relations; Supreme Court decisions and legislative enactments. Prerequisites: POLSC 101 and 320. (S)

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. Prerequisite: POLSC 101. (F)

340 Public Policy Evaluation 3(3-0)
Analysis of processes influencing the formation of public policy. Assessment of specific policy areas, standards of evaluation of policy impacts, and alternative policy choices. Prerequisite: POLSC 330. (S)

370 Political Thought 3(3-0)
Systematic survey of political thought from beginnings in Ancient Near East to present. Emphasis on contributions relevant to contemporary political theory. Prerequisite: previous work in political science or philosophy. (F)

405 The American Presidency 3(3-0)
Analysis of the powers and politics of the American presidency and those who have held the office. Presidential decision making, legislative and judicial relationships, elections. Prerequisite: POLSC 101. (F)

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. Prerequisite: POLSC 101. (S)

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. (S)

480 Practicum in Politics and Public Service (6-12 VAR)
For advanced students. Practical experience as interns in governmental agencies, political parties or legal offices. (F,S,SS)

491 Special Topics (1-3 VAR)
Independent study involving seminars and research. Prerequisites: junior or senior status with adequate preparation and approval of instructor. (*)

492 Research (1-3 VAR)
(*)

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. (S)

PSYCHOLOGY (PSYCH)

UNDERGRADUATE COURSES

101 General Psychology I 3(3-0)
Overview of the field of psychology including learning, perception, motivation, emotion, heredity, personality, development, abnormal and psychotherapy. GEN.ED.IIA. (F,S,SS)

101L General Psychology I Lab 1(0-2)
Laboratory exercises utilizing active student involvement in the topics covered by General Psychology I. GEN.ED.IIA. Corequisite: PSYCH 101 (F,S)

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. (F,S,SS)

120 Understanding Animal Behavior 2(2-0)
Basic comparative and ethological perspectives regarding animal behavior. Scientific techniques for observation of animal behavior are demonstrated at the Pueblo Zoo. GEN.ED.IIIA. (S)

130 Psychology of Everyday Life 2(2-0)
Application of psychological principles to everyday experiences. GEN.ED.IIA. (F,S,SS)

151 Introduction to Human Development 3(3-0)
Survey of human development through life span. GEN.ED.IIA. (F,S,SS)

201 Introduction to Data Analysis 3(3-0)
Introduction to statistical concepts regarding descriptive and inferential statistics. Standard hypothesis tests relating to both parametric and nonparametric distributions will be described. Prerequisites: PSYCH 101 and MATH 120 or equivalent (F,S)

201L Introduction to Data Analysis Lab 1(0-2)
Corequisite: PSYCH 201 (F,S)

205 Sports Psychology 2(2-0)
The effect of important psychological constructs such as learning, motivation, personality, arousal and cognition on performance in sports and athletics. (S)

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. (F)

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. (S)

220 Drugs and Behavior 2(2-0)
Use and misuse of drugs; analysis of causes of drug abuse. Different modalities used in the treatment of drug abuse. GEN.ED.IIA. (F,S)

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. (*)

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. (F)

241 Human Sexuality 2(2-0)
Psychological and biological aspects of human sexual behavior. Prerequisite: sophomore standing, permission of instructor (F)

242 Educational Psychology 2(2-0)
The contribution of psychological theory, research and methods to our understanding of educational processes. Prerequisite: PSYCH 101 (S)

251 Psychology of Infancy and Childhood 3(3-0)
Physical, cognitive, social and emotional growth of the individual from conception through childhood. Prerequisite: PSYCH 101, sophomore standing (F,S)

252 Pre-Adolescent and Adolescent Psychology 3(3-0)
Physical, cognitive, social and emotional growth of the individual during transition from childhood to adulthood. Prerequisite: PSYCH 101, sophomore standing (F,S)

253 Psychology of Adulthood and Old Age 3(3-0)
Physical, cognitive, social and emotional development, marriage, family and emerging changes in sex roles and special problems associated with old age. Prerequisite: PSYCH 101, sophomore standing (F,S)

291 Special Topics (1-3 VAR)
Prerequisite: permission of instructor (*)

295 Independent Study (1-3 VAR)
Prerequisite: psychology major of minor, prior written permission of instructor of record (F,S)

296 Cooperative Education Placement (1-4 VAR)
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. Prerequisite: permission of instructor (F,S,SS)

301 Introduction to Psychological Experimentation 3(3-0)
Introduction to basic methods and procedures for data collection and analysis of psychological experiments. Both survey and laboratory based research designs will be described. Prerequisite: PSYCH 101, and 201 (F,S)

301L Introduction to Psychological Experimentation Lab1(0-2)
Corequisite: PSYCH 301 (F,S)

311 Theories of Personality 3(3-0)
Major theories of personality and the methods of personality investigation. Prerequisite: PSYCH 101 (F,S)

314 Environmental Psychology 3(3-0)
The influence of the physical and social environment on the individual. Variables considered include architecture, city size, noise, pollution and allocation of resources. Prerequisite: PSYCH 101 (#)

315 Organizational and Administrative Psychology 3(3-0)
Application of psychological principles and methods of selection, placement evaluation, motivation of personnel to work, and problems of human relations in business and industry. Prerequisite: PSYCH 101 (S)

331 Physiological Psychology 3(3-0)
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. Prerequisite: PSYCH 101, or BIOL 203, 204, or permission of instructor. Corequisite: PSYCH 331L (S)

331L Physiological Psychology Lab 1(0-2)
Corequisite: PSYCH 331 (S)

334 Perception 3(3-0)
The senses and how they cooperate with the brain to provide awareness and knowledge of the world about us. Empirical findings and theoretical analysis of the processes of seeing, hearing, tasting, smelling and touching. Role of learning in normal and illusory perception is considered. Prerequisite: PSYCH 101, or permission of instructor. Corequisite: PSYCH 334L (S)

334L Perception Lab 1(0-2)
Corequisite: PSYCH 334 (S)

335 Motivation 3(3-0)
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. Prerequisite: PSYCH 101. Corequisite: PSYCH 335L or permission of instructor (S)

335L Motivation Lab 1(0-2)
Corequisite: PSYCH 335 (S)

336 Learning 3(3-0)
Principles of learning and memory. Empirical findings and theoretical analyses of topics including conditioning, reinforcement and punishment. Laboratory research and application. Prerequisite: PSYCH 101. Corequisite: PSYCH 336L or permission of instructor (#)

336L Learning Lab I 1(0-2)
Corequisite: PSYCH 336 (#)

337 Memory and Cognition 3(3-0)
Theory and research on current topics in cognition, including attention, concept formation, imagery, memory, decision making, language acquisition, problem solving and text comprehension. Prerequisite: PSYCH 101 (F)

337L Memory and Cognition Lab 1(0-2)
(F)

350 The Disabled Minority Child 3(3-0)
Theory and research on current topics relating to the problems of the disabled minority child. Prerequisite: PSYCH 101 (F)

351 Psychology of the Exceptional Individual 3(3-0)
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. Prerequisite: PSYCH 101 (F,S,SS)

352 Social Psychology 3(3-0)
General and applied psychological principles of the individual's interaction with a group. Prerequisite: PSYCH 101, or permission of instructor (F,S,SS)

362 Introduction to Psychopathology 3(3-0)
Etiology, diagnosis and therapy of maladaptive or abnormal behaviors and mental functioning. (F,S,SS)

381 Principles of Psychological Testing I 4(4-0)
Theories and principles of psychological testing are applied to the selection, use and evaluation of available tests. Prerequisite: PSYCH 101,201 (F)

401 History and Systems of Psychology 3(3-0)
Influences that made contemporary psychology possible. Prerequisite: PSYCH 101 (S)

410 Advanced Data Analysis 3(3-0)
Advanced techniques in data analysis, including analysis of variance/covariance, post-hoc tests, multiple regression and non-parametric tests. Use of computer software programs will be stressed. Prerequisite: PSYCH 201/201L (#)

420 Advanced Psychological Experimentation 3(3-0)
Continuation of PSYCH 301. Advanced methods for data collection and analysis. Experiments involving advanced factorial designs will be described. Prerequisite: PSYCH 301, 410 (S)

463 Psychopathology of Childhood 3(3-0)
A survey of the unique conceptual models of etiology, assessment and therapy appropriate to the study of the psychological disorders of childhood. Prerequisite: PSYCH 101, 362 or equivalent (F)

464 Systems of Counseling and Psychotherapy 3(3-0)
Traditional and contemporary theories of counseling and psychotherapy through use of case studies and other selected materials. Prerequisite: PSYCH 101, 311. Corequisite: PSYCH 464L, or permission of instructor (F)

464L Systems of Counseling and Psychotherapy Lab 1(0-2)
Corequisite: PSYCH 464 (F)

465 Behavior Modification 3(3-0)
Advanced methods and techniques of behavior modification in clinical psychology as practiced in various agencies and institutions. Prerequisite: PSYCH 101 (S)

466 Psychology of Biofeedback 3(3-0)
Psychophysiological aspects in biofeedback. Theoretical and applied instrumentation and clinical use. Project and field work required. Prerequisite: PSYCH 101 (F)

471 Clinical Psychology 3(3-0)
Survey of clinical psychology as a profession. Training requirements, opportunities, future directions, current research and ethical problems. Prerequisite: PSYCH 101, 311, 362, 381, 464 (F)

475 Group Process 3(3-0)
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. Prerequisite: PSYCH 464/464L (S)

484 Diagnosis and Assessment 3(3-0)
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. Prerequisite: PSYCH 101, 381, permission of instructor (#)

491 Special Topics (1-3 VAR)
Prerequisite: permission of instructor (SS)

493 Seminar (1-3 VAR)
Discussion and synthesis of psychological issues important to psychology majors including graduate education and cross-discipline. Prerequisites: PSYCH 101, senior standing, psychology major or permission of instructor (*)

494 Field Experience (4-12 VAR)
In-depth, on-the-job experience in psychology, individually designed. Ability to use psychological tests recommended. Prerequisites: PSYCH 101, prior written permission of instructor of record (F,S,SS)

495 Independent Study (1-3 VAR)
Prerequisites: PSYCH 101, psychology major, prior written permission of instructor of record (F,S)

496 Cooperative Education Placement (1-4 VAR)
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. Prerequisite: PSYCH 101, permission of instructor (F,S,SS)

GRADUATE COURSES

515 Psychology of Minorities 3(3-0)
Designed to provide a systematic analysis of the forces that shape the behavior of minorities and consequent counseling methods with this population. (F,S)

524 Philosophy and Theories of Counseling 3(3-0)
Designed to acquaint students with the range of theories currently directing the work of the counselor and to facilitate the development of a personal model of counseling. Personal professional ethics emerge as a major course focus. (#)

525 Tools and Techniques of Guidance Services 3(3-0)
Open to graduate students in the secondary school counseling program. A study of materials and methods used in secondary schools and of the counselor as a consultant and coordinator. The importance and role of the secondary school counselor will be the focus of this class. (F,S)

526 Organizational Development 3(3-0)
Designed to provide the graduate student with experience and skills necessary to improve programs and organization. (F,S)

527 Group Counseling 3(3-0)
Leads to an understanding of the function of group methods in the guidance program and assists the student in developing group facilitation skills. (F,S)

528 Career Development 3(3-0)
Designed to help students gain insight and understanding of the development process of occupational decision. Explores career counseling provided by counselors for clients in the areas of future education and in the world of work. (F,S)

532 Child and Adolescent Psychology 3(3-0)
Leads to a broad understanding of the impact of external influences on a person from conception through adolescence. Format includes exploration of topics of interest, discussion of research and active class participation. (#)

535 Behavior Therapy 3(3-0)
A study of the various factors precipitating disruptive behavior in the classroom both from the standpoint of individual psychological patterns and conditions extrinsic to the individual student. (F,S)

536 Practicum 3(3-0)
Designed to provide the beginning counseling student with basic interpersonal training experience. Individual and group contact focuses on personal growth and skill development. (F,S)

538 Elementary Counseling 3(3-0)
Designed to provide methods and techniques for elementary school counselors. (F,S)

563 Psychopathology of Childhood 3(3-0)
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. Prerequisites: graduate standing, permission of instructor and PSYCH 362 or equivalent (#)

592 Research 3(3-0)
Designed to assist students with the knowledge and skills necessary for a consumer of research. The fundamentals of research procedure and analysis of statistics are stressed. (F)

598 Internship 3(0-3)
Designed to provide the student with actual field work experience in counseling and guidance. (F)

READING (RDG)

UNDERGRADUATE COURSES

301 Reading and Language Arts in the Elementary School 3(3-0)
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. (F,S)

310 Current Approaches to Reading and Writing Instruction 3(3-0)
Various approaches to teaching reading including research findings and classroom application, basal readers, phonics, centers, psycholinguistics, and technology. Prerequisite: RDG 301 or 425. (SS)

360 Practicum (1-3 VAR)
Work with small groups and individual pupils in the public school preparing materials and lessons under the supervision of a reading teacher. Applies to both elementary and secondary schools depending upon the instructor's assignment. Prerequisites: RDG 301 or 425 and initial testing in basic competencies. (F,S)

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. (F,S)

431 Developing Creative Centers 1(1-0)
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. Prerequisite: RDG 301 or 425. (SS)

436 New Directions in Reading Comprehension 2(2-0)
Exploration of and simulations of research-based strategies to increase students' comprehension of reading in elementary and secondary classes. Prerequisite: RDG 301 or 425. (F,SS)

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). (S,SS)

442 Reading Across Cultures 2(2-0)
Techniques of adapting reading instruction for the linguistically and culturally different child. Problems of many minority groups are analyzed. Prerequisite: RDG 301. (S)

450 Diagnosis and Remediation of Reading Problems 3(2-3)
Diagnostic and evaluation procedures used in reading techniques for remediation of problems and individualized instruction. Appropriate for elementary and secondary teachers. Field experience required. Prerequisite: RDG 301 or 425. (F,S)

491 Special Topics (1-2 VAR)
(*)

495 Independent Study (1-2 VAR)
Individual projects and problem-solving experiences designed to meet students' special needs. With instructor's permission, certain program requirements may be completed through independent study. (F,S)

GRADUATE COURSES

510 Foundations of Reading Instruction 3(3-0)
Basic course for other graduate reading courses, including reading skills, sequence, materials, psychology of reading and relationship to other language arts. Prerequisite: graduate standing. (*)

525 Teaching Reading in the Content Area 2(2-0)
Reading skills specifically used in mathematics, science, social studies and literature, including specific techniques for teaching. Prerequisite: graduate standing. (F,S)

531 Developing Creative Centers 1(1-0)
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. Prerequisite: graduate standing. (SS)

536 New Directions in Reading Comprehension 2(2-0)
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. Prerequisite: graduate standing. (F,SS)

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). Prerequisite: graduate standing. (S,SS)

542 Reading Across Cultures 2(2-0)
Problems and solutions in reading instruction for the linguistically or culturally different child. Prerequisite: graduate standing. (F,S)

550 Diagnosis and Remediation of Reading Problems 3(2-3)
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. Prerequisites: a beginning reading course, graduate standing, and teacher certification or initial testing in basic competencies. (F,S)

552 Psycholinguistic Views of Reading: Process to Practice 2(1-3)
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. Prerequisites: beginning course in reading, graduate standing, and teacher certification or initial testing in basic competencies. (*)

560 Practicum 2(0-6)
Work with small groups and individual pupils in the public school preparing materials and lessons under the supervision of a reading teacher. Applies to both elementary and secondary schools depending on the instructor's assignment. Prerequisites: RDG 301 or 425, graduate standing, and teacher certification or initial testing in basic competencies. (F,S)

591 Special Topics (1-2 VAR)
Prerequisite: graduate standing. (*)

595 Independent Study 1(0-2)
Prerequisite: graduate standing. (F,S)

RECREATION (REC)

UNDERGRADUATE COURSES

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. (S)

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. (S)

389 Practicum in Recreation 3(0-3)
Minimum of 150 hours of practical experience in a selected recreation agency. Prerequisite: permission of director of recreation program. (F,S,SS)

480 Recreation for Special Populations 3(3-0)
Community recreation and leisure services for the physically or mentally disabled and the elderly. (F)

481 Outdoor Recreation 3(2-1)
Lecture and practical outdoor experience relating to problems, trends in outdoor recreation and camping. (F)

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 affecting the leisure field. (F)

491 Special Topics (1-5 VAR)
(*)

493 Seminar 1(1-0)
Student-led discussions on contemporary problems and issues in leisure and recreation. Preparation for entry into the profession; interview preparation and resume construction. (S)

495 Independent Study (1-5 VAR)
(*)

498 Internship 9(0-9)
400 hours of supervised, full-time experience in a selected recreation agency. Management/supervision level experience expected. (S/U grades.) Prerequisite: permission of department chair (F,S,SS)

RUSSIAN (RUS)

UNDERGRADUATE COURSES

101 Introduction to Russian I 3(3-0)
Pronunciation, conversation, grammar. Alphabet, easy reading and writing. GEN.ED.IB. (F)

102 Introduction to Russian II 3(3-0)
GEN.ED.IB. Prerequisite: RUS 101 or equivalent. (S)

201 Intermediate Russian I 5(5-0)
Grammar and vocabulary. Reading of short stories, oral and written reports. Prerequisite: RUS 102 or equivalent. (*)

202 Intermediate Russian II 5(5-0)
Prerequisite: RUS 201 or equivalent. (*)

211 Russian Conversation 2(2-0)
Intensive practice. Prerequisite: RUS 102 or equivalent. (*)

311 Advanced Russian Conversation 2(2-0)
Intensive practice. Prerequisite: RUS 211 or permission of instructor. (*)

341 Russian Short Story 2(2-0)
Selected short stories. Discussion of ideas, art and authors. Stress on both oral and written work. Prerequisite: RUS 202 or permission of instructor. (*)

SOCIAL SCIENCE (SOCSC)

UNDERGRADUATE COURSES

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. (F,S)

151 Society and Technology 3(3-0)
Role of technology as a 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. (S)

208 Afro-American Heritage 3(3-0)
Analysis of black cultural experiences from African origins and civilization to the present. GEN.ED.IIB. (F)

209 Blacks in America Today 2(2-0)
Analysis of blacks in today's milieu including problem areas and contemporary issues. GEN.ED.IIB. (S)

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. (S,SS #)

377 Teaching Social Studies in Secondary Schools 2(2-0)
Curriculum, materials, and techniques for teaching social studies in junior and senior high schools. (F)

416 Revolutions 2(2-0)
General historic development of revolutions; emphasis on one major revolutionary movement in world history. (F,SS #)

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. (* SS)

GRADUATE COURSES

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. Prerequisite: graduate standing. (*)

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. Prerequisite: graduate standing. (*)

516 Revolutions 2(2-0)
General historic development of revolutions; emphasis on one major revolutionary movement in world history. Prerequisite: graduate standing. (* F,SS)

593 Seminar 2(2-0)
Various problems within the realm of social science, utilizing an integrated approach. For majors in broad area social science disciplines. Prerequisite: graduate standing. (* SS)

SOCIAL WORK (SW)

UNDERGRADUATE COURSES

100 Introduction to Social Welfare 3(3-0)
Exploration of social welfare as a basic institution in contemporary society. Introduction to the field of social work, the roles, professional skills and philosophy of practice. GEN.ED.IIC. (F,S)

201 Human Behavior and Social Environment I 3(3-0)
Focus on the person in the environment, with an examination of the interrelationship of psychological, biological, social, and cultural systems and their impact on social functioning. Introduction to system theory as an organizing framework. GEN.ED.IIC. Prerequisites: SOC 101; PSYCH 101 and an approved human biology course. (F,S)

202 Human Behavior and Social Environment II 3(3-0)
Focus on an understanding and analysis of larger social systems which include the family, groups, communities and organizations. Emphasis on social systems as an organizing theoretical framework for understanding social functioning and change. Prerequisite: SW 201. (S)

205 Social Welfare in the United States 3(3-0)
Examines the historical development of social welfare and social work. Emphasis on social values and structures as they affect inequity and economic security in America. Prerequisite: SW 100. (S)

210 (SOC 210) Techniques of Analysis 3(3-0)
Introduction to the methods of scientific investigation in social work. (F,S)

222 Social Work Practice 3(3-0)
Foundation course for the social work major; presentation of basic elements of generic professional practice. Specific attention is given to professional values, interviewing skills, relationship building, and communication skill development. Prerequisite: SW 100 and 201. (S)

290 Special Projects (1-5 VAR)
Prerequisite: permission of instructor. (F,S,SS)

320 Emergence and Counseling of Minorities 3(3-0)
Process of emergence of ethnic and minority groups in the United States. Identification of the needs of ethnic minority clients and the particular skills required of social work practitioners. Prerequisites: SW 100, 201 and 202. (F)

322 Social Work Intervention I 3(3-0)
Elements of generalist social work practice with a focus on individuals. Assessment, intervention, evaluation, and skill development and practice are emphasized. Prerequisites: SW 100, 201, 202 and 222. (F)

323 Social Work Intervention II 3(3-0)
Practice methods of social group work within a generalist model, relationship to small group structures and processes, leadership functions, interpersonal relationships. Prerequisite: SW 322. (S)

324 Social Work Intervention III 3(3-0)
Nature and scope of social work intervention at the community level; distinctive characteristics of the community as a social system and implications for generalist practice. Prerequisite: SW 322. (S)

350 Social Welfare Policy and Program Evaluation 3(3-0)
Nature of social policy; process of policy formulation; factors influencing choice of social objectives within goals and values of social work profession. Prerequisites: SW 100 and 205. (F)

420 Social Work Theory 3(3-0)
A comparative approach to explanatory theories of human behavior, especially as they relate to the helping process in social work practice. Prerequisite: program permission SW 322, 323 and 324. (S)

460 Social Work Seminar 3(3-0)
An examination of selected fields of social work practice. Focus on knowledge and skills needed to effectively practice in these settings. Prerequisite: program permission. (F)

481 Field Seminar I 3(3-0)
Taken in conjunction with agency field placement to integrate practice and theory. Corequisite: SW 488. (F)

482 Field Seminar II 3(3-0)
Taken in conjunction with agency field placement to integrate practice and theory. Corequisite: SW 489. (S)

488 Field Placement I 5(0-16)
Students spend 16 hours per week in practice field assignments in selected social work agencies or settings under the direct supervision of a professional social worker. Corequisite: SW 481. (F)

489 Field Placement II 5(0-16)
Students spend 16 hours per week in practice field assignments in selected social work agencies or settings under the direct supervision of a professional social worker. Corequisite: SW 482. (S)

490 Special Projects (1-5 VAR)
Prerequisites: SW 101 and 102; social work major, prior written permission of instructor of record. (F,S,SS)

491Special Topics (1-3 VAR)
(F,S,SS)

495 Independent Study (1-3 VAR)
Prerequisite: permission of instructor. (F,S,SS)

SOCIOLOGY (SOC)

UNDERGRADUATE COURSES

101 General Sociology I 3(3-0)
Introduction to the field of sociology; emphasis on basic principles and concepts. GEN.ED.IIB. (F,S,SS)

152 Marriage and Family 3(3-0)
Historical, cross cultural and intra-cultural comparisons of family formation, interaction and dissolution. GEN.ED.IIB. (F,S)

155 Minority and Ethnic Relations 3(3-0)
Sociological theories, studies, and findings concerning group maintenance and interaction in contemporary society. (*)

201 Social Problems 3(3-0)
Sociological interpretation of contemporary social problems. GEN.ED.IIB. (S)

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. (*)

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. (F)

204 Community Corrections 3(3-0)
Examination of correctional alternatives to incarceration. (F)

206 Sociology of Gender 3(3-0)
Examination and evolution of relationships between sex roles, culture, and societal institutions and processes. Includes an analysis of sexual stratification. (F)

210 (ANTHR/POLSC/SW 210) Techniques of Analysis 3(3-0)
Introduction to the methods of scientific investigation in the social sciences. (F,S)

250 (ANTHR 250) The Sacred in Culture 3(3.0)
Concepts of the supernatural studied cross-culturally and in particular cultures. Consideration of how religion helps individuals adjust to stress and aging. (#)

252 (ANTHR 252) Culture and Personality 3(3-0)
Relationship between group processes and personality factors in a cross-cultural perspective. (F)

291 Special Topics (1-3 VAR)
(*)

304 Crime and Delinquency 3(3-0)
Nature of crime and delinquency in contemporary American society; emphasis on causation and treatment. Prerequisites: SOC 101 and 203. (F)

305 Crime and Women 3(3-0)
Exploration of social, cultural and political variables that create both women victims and women criminals. (S)

308 Popular Culture 3(3-0)
Advertising, television, music, novels, and the news are among the topics to be investigated for their social significance. (#)

310 (ANTHR 310) Social and Cultural Theory 3(3-0)
Examine from classical to contemporary theory in sociology and anthropology. (F)

351 Social Deviance 3(3-0)
Sociological perspective on behavior defined as deviant, abnormal or socially unacceptable. Prerequisite: SOC 101 (S)

352 Social Psychology 3(3-0)
General and applied psychological principles of the person's interaction with the group. Prerequisite: PSYCH 101, or permission of instructor (F,S,SS)

353 Penology 3(3-0)
Prisons in historical perspective, treatment models as they affect the incarcerated individual. Prerequisites: SOC 101 and 203 (S)

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. (*)

355 Political Sociology 3(3-0)
Analysis of the major sociological variables associated with political decision making and other political processes. (*)

356 Social Stratification 3(3-0)
Inquire into inequalities of wealth, power, and the consequence for individuals and society. Prerequisites: SOC 101 and 310 (S)

357 Sociology of Community Development 3(3-0)
Current issues and concerns of the community structure; leadership, conflict, change, community organization development, planning and service. (*)

358 Film and Society 3(3-0)
An in-depth look at the images of social life and social relationships contained in popular movies. (*)

391 Special Topics (2-4 VAR)
(F,S)

401 (ANTHR 401) Health, Culture and Society 3(3-0)
Analysis of how social, cultural, and psychological factors influence health and health care. (F)

402 (ANTHR 402) Aging, Culture and Society 3(3-0)
Cultural, sociological and psychological dimensions of aging. (S)

403 Human Sexuality and Social Behavior 3(3-0)
Sexuality and sexual conduct from a sociological and developmental perspective. (S)

404 Poverty 3(3-0)
Poverty in the United States, its measurement and extent, perpetuating conditions, lifestyle and anti-poverty programs. (F)

405 Sociology of Law 3(3-0)
Laws in Western society and criminological theory are examined. (F)

406 Sociology of Small Groups 3(3-0)
Microsociological analysis of group structure, interaction and dynamics in institutional settings in modern society. (SS)

407 Family Violence 3(3-0)
The extent, seriousness, and impact of the major forms of domestic violence. (S)

408 Science, Technology, and the Future 3(3-0)
Social and structural implications of science and technology as they affect society. (F)

409 Victimology 3(3-0)
Study of the victims' role in criminal transactions. Examination of individuals and groups as victims of officially defined crime, as well as other social injuries, not officially defined as crime. Prerequisite: SOC 153 (S)

410 Structural and Elite Crime 3(3-0)
Examination of crimes and social injuries perpetrated by organizational structures that do physical or economic harm to the environment, their employees, and to their customers. Prerequisite: SOC 153 (F)

420 Advanced Criminological Theory 3(3-0)
Examination of major theories of crime and their policy implications; focus on sociohistorical factors in theory development. Prerequisites: SOC 101, 203, 304 and 310. (S)

430 Industrial Organizations 3(3-0)
Modern industrial society, emphasis on industry as a type of social organization including roles of management and labor. (*)

431 Working in Modern America 3(3-0)
Exploration of the changing patterns, structure, and attitudes toward work in the United States today. (*)

432 Organization Theory 3(3-0)
Prevailing theoretical model of large organizations and suggested alternatives. (*)

451 (ANTHR 451) Culture/Deviance/Psychopathology 3(3-0)
Analysis of the relationship between culture and the causes and manifestations of deviance and psychopathology. (S)

491 Special Topics (1-3 VAR)
Topic identified by subtitles taught. Students may enroll as often as new topics are introduced. (F,S)

492 Research 3(3-0)
(S)

493 Seminar (2-4 VAR)
(*)

494 Field Experience (3-12 VAR)
Practical on-the-job experience in an agency setting. Prerequisite: permission of instructor (F,S)

495 Independent Study (1-10 VAR)
Prerequisites: previous work in sociology and permission of instructor (F,S)

SPANISH (SPN)

UNDERGRADUATE COURSES

101 Beginning Spoken Spanish I 5(5-0)
Oral proficiency development, also some reading and writing; introduction to Hispanic culture. GEN.ED.IB. (F,S)

102 Beginning Spoken Spanish II 5(5-0)
Students are placed by the department. Practice in oral, aural, reading and writing experiences. GEN.ED.IB. Prerequisite: SPN 101 or equivalent. (F,S)

201 Spanish Grammar and Composition I 3(3-0)
Review of intermediate grammar and practice in writing compositions. Prerequisite: one year of college Spanish or equivalent. (F)

202 Spanish Grammar and Composition II 3(3-0)
Further study of grammar, increased emphasis on composition. Prerequisite: SPN 201 or consent of instructor. (S)

211 Intermediate Spanish Conversation I 2(1-2)
Conversation in small groups divided according to students' fluency. Prerequisite: one year of college Spanish or equivalent. (F)

212 Intermediate Spanish Conversation II 2(1-2)
Conversation in small groups divided according to students' fluency. Prerequisite: one year of college Spanish or equivalent. (S)

281 Readings in Hispanic Civilizations I 3(3-0)
Reading and discussion based on cultures of Spain. GEN.ED.IB. Prerequisite: one year of college Spanish or equivalent. (F)

282 Readings in Hispanic Civilizations II 3(3-0)
Reading and discussion based on Hispanic America. GEN.ED.IB. Prerequisite: one year of college Spanish or equivalent. (S)

301 Advanced Spanish Grammar and Conversation 3(3-0)
Required of all Spanish majors. Prerequisite: SPN 202. (F)

302 Advanced Spanish Composition and Conversation 3(3-0)
Required of all Spanish majors, except bilingual track. Prerequisite: SPN 301. (S)

331 Masterpieces of Spanish Literature 3(3-0)
Major literary works of Spanish literature from its beginnings to 1680. Essential techniques of literary criticism using a cultural approach. Prerequisite: two years of college Spanish or equivalent. (*)

332 19th-Century Spanish Literature 3(3-0)
Emergence of romanticism in Spain and its gradual development toward costumbrismo and realism. Prerequisite: two years of college Spanish or equivalent. (*)

341 Masterpieces of Spanish American Literature 3(3-0)
Major works of Spanish America with emphasis on cultural aspects of 20th-century literature. Prerequisite: two years of college Spanish or equivalent. (*)

342 Spanish American Novel 2(2-0)
Outstanding Spanish American novels, concentrating on their artistic and social significance. Prerequisite: two years of college Spanish or equivalent. (*)

381 Contemporary Hispanic America 3(3-0)
Sociology, geography, internal and external politics, economics, and the role of the United States in Spanish America and Brazil. Prerequisite: two years of college Spanish or equivalent. (S)

383 The Spanish American Short Story 2(2-0)
Major works of Spanish Americans with emphasis on cultural aspects of 20th-century literature. Prerequisite: two years of college Spanish or equivalent. (#)

431 Studies in Spanish Literature 1(1-0)
Reading, analysis and discussion of contemporary Spanish literature. May be repeated for credit as content changes. Prerequisite: two years of college Spanish or equivalent. (*)

441 Mexican Literature 2(2-0)
Main currents of Mexican literature, primarily of the 20th century. Prerequisite: two years of Spanish or equivalent. (*)

442 Cervantes: Don Quixote 2(2-0)
Primarily the novel Don Quixote, literary and cultural analysis of the characters Don Quixote and Sancho Panza and their environment. Prerequisite: two years of college Spanish except no prerequisite when class is conducted in English. (#)

450 Problems in Teaching Foreign Language 3(3-0)
Analysis of Spanish phonology, morphology and syntax related to cultural patterns for effective teaching of Spanish. Prerequisite: five semesters' study of FL or equivalent. (*)

451 Studies in Spanish Linguistics I 1(1-0)
Sound patterns of Spanish contrasted and compared with English sound patterns. Prerequisite: two years of college Spanish or equivalent. (F)

452 Studies in Spanish Linguistics II 1(1-0)
Review of the most recent research in linguistics. Prerequisite: two years of college Spanish or equivalent. (#)

481 Hispanic Thought 3(3-0)
Essays in Spanish. Prerequisite: two years of college Spanish or equivalent. (S)

485 Studies in Latin American Literature 1(1-0)
Reading, analysis and discussion of contemporary Latin American literature. May be repeated for credit as content changes. Prerequisite: two years of college Spanish or equivalent. (*)

494 Field Experience (1-7 VAR)
Communication, lectures by writers, artists, political leaders land specialists. Visits to museums, attendance at movies, theatres and excursions. Prerequisite: two years of college Spanish. (F,S)

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. Prerequisite: two years of college Spanish. (F,S)

SPEECH COMMUNICATION (SPCOM)

UNDERGRADUATE COURSES

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. (F,S,SS)

101 Expository Speaking 2(2-0)
Basic principles of exposition and their application to public speaking. (F,S,SS)

102 Basic Speech Communication 3(3-0)
Integrated combination of SPCOM 100 and 101. Available only through extended studies. (*)

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. (F,S)

201 Beginning Sign Language 2(2-0)
Introduction to the fundamentals of communicative interaction with and among the deaf by means of hand symbolization. (F)

211 (MILSC 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. (F,S)

212 Argumentation 2(2-0)
Argumentation focuses on the methods advocates employ to make rational decisions and to win assent to other's statements. Particular emphasis on the nature and skills of reasoned discourse. GEN.ED.IG. (F)

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. (S)

224 (MACOM 224) Broadcast Announcing 3(3-0)
Study and application of the principles of oral communication to radio and television announcing. Prerequisite: MACOM 102 (F)

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 meaning and feeling in literature. GEN. ED. IG. (S)

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. (F)

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. (S)

250 Introduction to Communication Disorders 2(2-0)
Survey course about major communicating disorders. Emphasis on classification and descriptions. Treats certification requirements, licensure and professional opportunities. (S)

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. (F)

291 Special Topics (1-3 VAR)
(*)

295 Independent Study (1-3 VAR)
Prerequisite: permission of instructor. (*)

301 Intermediate Sign Language 3(3-0)
Study and application of the American Sign Language, including conversational skills, gestures and Deaf Cultures. Prerequisite: SPCOM 201 or permission of instructor (S)

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 the forms of language. (F,S)

312 Persuasion (2-3 VAR)
Examination of the principles and theories of persuasion and their application to persuasive settings. Emphasis on using language to secure belief and action. Prerequisites: SPCOM 211, 212 or permission of instructor (S)

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 be repeated twice for credit. (F,S)

322 Group Discussion 3(3-0)
Performance course emphasizing the principles and skills of dialectical discourse. Practices the cooperative production and utilization of discourse in human affairs. Prerequisite: permission of instructor (*)

324 (BIOL 324) Anatomy of the Head, Neck and Chest 2(2-0)
Anatomical structures of the head, neck and chest with analysis of development and function. Prerequisite: BIOL 221 or BIOL 223. Corequisite: SPCOM 324L (F ##)

324L (BIOL 324L) Anatomy of the Head, Neck and Chest, Dissection 1(0-2)
Dissection and examination of the anatomical structure of the head, neck and chest. Corequisite: SPCOM 324 (F ##)

351 Articulation Disorders 2(2-0)
Causation, diagnosis and clinical management of articulation disorders. Prerequisite: SPCOM 250 or permission of instructor (F #)

352 Voice Disorders 2(2-0)
Causation, diagnosis and clinical management of voice disorders. Prerequisite: SPCOM 250 or permission of instructor (F ##)

353 Stuttering 2(2-0)
Nature and theories of stuttering with an introduction to therapeutic and counseling procedures utilized in clinical management. Prerequisite: SPCOM 250 or permission of instructor (F ##)

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. (F)

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). Prerequisite: SPCOM 261 or permission of instructor (S)

365 Basic Audiology 3(3-0)
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. Prerequisite: SPCOM 250 or permission of instructor (F #)

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 program. Prerequisite: junior or senior standing (*)

377 Speech Education Methods 2(2-0)
Provides instruction and practice in the principles of teaching speech. Geared to foster a thoroughly professional teacher. Prerequisite: junior standing and permission of instructor (*)

401 The Nature of Discourse 3(3-0)
Theory course; stresses the process of articulate sequential thought, verbally manifested in human life. Focuses on the human capability of replying in kind. Prerequisite: SPCOM 360 (*)

443 Conflict Management 3(3-0)
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. Prerequisite: SPCOM 241 or permission of instructor (S)

451 Aural Rehabilitation 3(3-0)
Detailed study of auditory training procedures and speech reading methods. Discussion of hearing aids included. Prerequisite: SPCOM 365 or permission of instructor (S #)

452 Diagnosis and Methods in Speech Pathology 2(2-0)
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. Prerequisite: six semester hours in speech pathology or permission of instructor (S ##)

462 Organic Disorders of Speech 3(3-0)
Nature and causes of aphasia, cerebral palsy, cleft palate, and neurological disabilities. Introduction to clinical management of these disorders. Prerequisite: six semester hours in speech pathology or permission of instructor (S ##)

463 Language Disorders in Children 2(2-0)
Study of the cause, nature, and diagnosis of language disorders in children. Introduction to clinical management. Prerequisite: SPCOM 360 or permission of instructor (S #)

469 Clinical Experience in Communication Disorders 1(0-1)
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.) Prerequisite: permission of instructor (F,S,SS)

491 Special Topics (1-3 VAR) (When appropriate)
Prerequisite: permission of instructor (*)

493 Seminar (1-3 VAR)
Class activity supervised by the department, centering on an advanced level of some aspect of discourse. Credit value assigned according to course objectives. Prerequisites: junior or senior standing and permission of instructor (S)

495 Independent Study (1-3 VAR)
Prerequisite: permission of instructor. (*)

496 Cooperative Education Placement (1-4 VAR)
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. Prerequisite: permission of instructor (*)

GRADUATE COURSES

576 Directing Speech Activity 2(2-0)
Identical in content with SPCOM 376 but higher quality of work and greater understanding of course objectives must be attained. Research report is required. Prerequisite: graduate standing, permission of instructor (*)

591 Special Topics (1-3 VAR)
Prerequisite: graduate standing. (*)

595 Independent Study (1-3 VAR)
Prerequisite: graduate standing. (*)

THEATRE (TH)

UNDERGRADUATE COURSES

111 Theatre Appreciation 3(3-0)
A course emphasizing the understanding of theatre art from the audience's point of view. (F,SS)

131 Foundations of Theatre 3(2-2)
An introduction to all aspects of creating a work of theatre art from the contributing artists' point of view. (F)

135 Beginning Acting 3(3-0)
An introduction to the principles of acting for stage and screen. (S)

168 Company Class (1-6 VAR)
Theatre production laboratory for beginning students. Credit is offered in the areas of rehearsal and performance, technical areas, and front-of-the-

house operation. May be repeated for additional credit. (F,S,SS)

216 History of Theatre (3-0)
An overview of the major historical eras, plays, playwrights and other contributing artists in Western Theatre. (F ##)

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. (S #)

291 Special Topics (1-3 VAR) (*)

331 Play Direction 3(2-2)
An introduction to directing theory and practice. Students select and analyze scripts and direct one-act plays. Prerequisite: TH 131 and 135 or permission of instructor. (S ##)

332 Design for the Theatre 3(2-2)
Principles and practices of designing scenery, lighting and costumes for the theatre. Prerequisite: TH 131 or permission of instructor. (S #)

335 Acting Problems 3(3-0)
Exploration of a major concern of the actor such as characterization, dialects, acting styles. May be repeated for additional credit. (F #)

368 Company Class (1-6 VAR)
Theatre production laboratory for advanced students. Credit is offered in the areas of rehearsal and performance, technical areas and front-of-the-house operation. May be repeated for additional credit. (F,S,SS)

370 Creative Dramatics 1(1-0)
Classroom techniques in dramatics for the teacher. (F,SS)

431 Advanced Theatre Techniques 3(3-0)
In depth examination of one of the major processes in creating theatre (playwriting, business management, direction designing). May be repeated one time for additional credit. Prerequisite: TH 331 or 332 or permission of instructor. (*)

491 Special Topics (1-3 VAR)
(*)

GRADUATE COURSES

568 Company Class (1-6 VAR)
Theatre production: directing, designing, rehearsal and performance, technical areas and front-of-the house operation. May be repeated for additional credit. Prerequisite: graduate standing. (*)

570 Creative Dramatics 1(1-0)
Graduate-level creative dramatics for the classroom teacher. Prerequisite: graduate standing. (F,SS)

591 Special Topics (1-3 VAR)
(*)

UNIVERSITY PERSONNEL 1980-90

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Stephen D. Bronn (1971) professor of mathematics, and executive director of Planning and Budget; BS, University of Nebraska; MSIA, Purdue University; MS, Ph.D., Northwestern University

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J. Michael Ortiz (1990) professor of education, and dean, Continuing Education; BUS, MA, University of New Mexico; Ph.D., University of North Carolina

Jack A. Sellheimer (1963) professor of biology, and dean, College of Science and Mathematics; BS, Western Michigan University; Ph.D., University of Louisville

Robert C. Shirley (1984) professor of business administration, and president; BBA, MBA, University of Houston; Ph.D. Northwestern University

Ray Sisson (1960) professor of engineering, and dean, College of Applied Science and Engineering Technology; AA, Pueblo College; BSEE, University of Colorado; MS, Colorado State University; Ed.D., University of Northern Colorado

Larry G. Thomas (1968) associate professor of agriculture, and athletic director; BS, Oklahoma State Univeristy; M.Ed., Ph.D., Colorado State University.

Luis G. Valerio (1975) associate professor of education, and dean, Community Programs and Services; BA, University of Southern Colorado; MA, New Mexico Highlands University; Ph.D., University of Northern Colorado

Friederike Wiedemann (1989) professor of foreign language and dean, College of Liberal and Fine Arts; BA, Johann Wolfgang Goethe-Universitat, Frankfurt, Germany; MA, Faculte des Lettres, Lyon, France; Ph.D., Northwestern University

PROFESSIONAL STAFF

Alexander, John (1988) master control operator, KTSC-TV

Amella, Gary (1980) assistant director, Upward Bound; BA, MA, Colorado State University

Anglum, Sean P. (1986) promotions manager, KTSC-TV; BA, University of Northern Colorado

Aube, Thomas R. (1980) chief engineer, KTSC-TV

Brandon, Billie J. (1988) vice president, Business Services; BA, Slippery Rock State College; JD, Chase College of Law, Northern Kentucky University

Breen, Patricia (1988) conference director; BS, University of Southern Colorado

Burkholder, Jeffry (1988) master control operator, KTSC-TV

Clay, Samuel O., Jr. (1971) assistant director, Counseling and Health Services; BA, University of Southern Colorado; MA, University of Denver

Cordova, Felix (1989) coordinator/counselor, Southern Colorado Educational Opportunity Center; BS, University of Southern Colorado

Cornelius, Andrew (1987) director, Affirmative Action; BS, Metropolitan State College

De Biasi, Joachim (1988) director of development, KTSC-TV; BA, Rutgers The State University of New Jersey

DeFore, Richard A. (1981) learning resources specialist, University Library; BA, University of Wisconsin; MA, University of Northern Colorado

Dehn, Ronald E. (1970) manager, Systems and Operations, Computer Center; BS, University of Southern Colorado

DeNiro, Jean (1986) coordinator/counselor, Educational Opportunity Center; BSW, University of Southern Colorado

DiPrince, Linda S. (1970) assistant director, Financial Aid; BS, University of Southern Colorado

Folda, Joseph (1987) head coach, men's basketball; BS, University of Northern Colorado; M.Ed., Eastern Washington University

Fraunfelder, Doug (1989) controller, Office of Accounting; BS, MBA, University of Denver

Genty, Don A. (1970) manager of sponsored programs, Office of Accounting; BSBA, Carroll College; MBA, University of Denver

Girton, Marcy (1989) head women's basketball coach; BA, Taylor University; MS, Indiana State University; MA, Ball State University

Gradisar, Tina (1989) membership manager, KTSC-TV; BS, University of Southern Colorado

Haering, Charles L. (1971) head coach, men's and women's cross cross country/track; BA, The Colorado College; MA, Western State College

Herrera, Veronica (1989) financial aid, veterans, and job locater counselor, Financial Aid; BSW, University of Southern Colorado

Hill, Richard H. (1982) dean, Student Services; BA, University of Northern Colorado; M.Ed., Colorado State University; Ph.D., University of Wyoming

Jones, Scott A. (1984) master control operator supervisor, KTSC-TV; BS, University of Southern Colorado

Kaess, Almabeth (1989) sports information director; BS, University of Southern Colorado

Kendall, Anita L. (1981) director, Personnel; BA, MA, Western State College

King, Karel S. (1989) director, Counseling and Career Services; BS, M.Ed., Bowling Green State University

Leyba, Theodore, (1973) chief, University Police

Lovell, Catherine M. (1976) counselor, Financial Aid; BA, St. Joseph's College; BSN, Columbia Presbyterian Medical College; M.Ed., Pepperdine University

Lundahl, Sandra L. (1985) assistant to general manager, KTSC-TV; AAS, University of Southern Colorado

Maldonando, Carlos (1990) counselor, Student Support Services Program; BS, University of New Mexico

Martinez, Deborah A. (1985) assistant director of admissions, and coordinator, Recruitment of Minorities and Women; BA, University of Southern Colorado

Mason, Robert (1981) director, University Computing; BS, MS, Ph.D., Southern Illinois University

McGill-Eagan, Mary L. (1974) director, Communication Services; BS, University of Southern Colorado

Medina, Mike (1988) counselor, Upward Bound; AA, Trinidad State Junior College; BA, MA, Adams State College

Medina, Nancy (1988) counselor, Upward Bound; AAS, BS, University of Southern Colorado

Melin, Carl (1985) assistant director of Admissions and coordinator, International Student Recruitment; BA, Adams State College; MS, University of Southern California

Mestas, Gina T. (1979) director, Financial Aid; AA, Trinidad State Junior College; BA, Adams State College

Monks, Shelly (1990) admissions counselor; BS, University of Southern Colorado

Moses, Douglas J. (1985) head coach, wrestling; BA, Adams State College; MA, Colorado State University

Nardin, Ted (1989) admissions couselor; BSBA, University of Southern Colorado

Nichol, Elizabeth A. (1985) director, Development and Alumni Relations; BA, Swarthmore College

Passanante, Jack, Jr. (1986) production assistant, KTSC-TV; BA, University of Southern Colorado

Perez, Cynthia M. (1977) assistant director, Student Support Services; BA, University of Southern Colorado

Phillips, Brian (1990) master control operator, KTSC-TV; BA, University of Southern Colorado

Pineda, Juan N. (1974) assistant director, Educational Opportunity Programs; BS, University of Albuquerque; MA, University of Northern Colorado

Quinlan, James (1984) director, Physical Plant; BS, New Mexico State; M.Ed., Colorado State University

Sinn, Gregory B. (1985) general manager, KTSC-TV; BA, University of Arizona

Schuetzle, Ralph (1989) assistant men's basketball coach; BA, Augustana College; MS, Eastern Washington University

Skehan, Patricia (1986) assistant director, Admissions, and coordinator, on campus programs; BA, University of Colorado

Stastny, Everett E. (1988) director, Purchasing; BA, University of Colorado

Stubenrouch, Roger E. (1983) program director, Continuing Education; BS, Troy State University; MS, University of Northern Colorado

Sullivan, Wynona (1989) auction coordinator, KTSC-TV

Wade, Martha (1986) dean, Admissions and Enrollment Services; AB, University of Tennessee; M.Ed., Indiana University; Ph.D., Vanderbilt University

Weekes, Ronald C. (1984) production supervisor, KTSC-TV; BA, Brigham Young University

Wells, Elmer E. (1974) director, International Student Services; BA, Iowa Wesleyan College; M.Ed., University of Alaska; Ph.D., University of New Mexico

Whatley, Nancy (1988) program assistant, Educational Opportunity Center

Whitley, Belinda (1988) coordinator, Academic Computing; BS, MS, Arkansas State University

Wilson, Edward (1990) safety officer; BS, East Tennessee State University

Zimmer, Cathy A. (1988) promotional assistant, KTSC-TV; BA, University of Southern Colorado

Zimmerman, Bruce (1986) director, Auxiliary Services; BS, Rhode Island College; MS, Indiana University

EMERITUS FACULTY

Anderson, Norris D. (1965-1984) BA, MA, Ed.D., professor emeritus of education

Baldauf, Boyd J. (1964-1988) BS, MA, Ed.D., professor emeritus of computer science technology

Bard, Eugene D. (1965-1987) BS, MS Ed.D., professor emeritus of physics

Bartlett, Thomas J. (1967-1977) BS, MA, professor emeritus of mathematics

Blandford, Robert D. (1965-1989) BS, MA, DA, professor emeritus of mathematics

Blake, Marvin (1949-1978) BE, professor emeritus of manufacturing engineering technology

Blasing, James A. (1956-1984) AA, BS, MS, professor emeritus of physical education

Bond, John A. (1967-1984) BS, MA, Ph.D., professor emeritus of political science

Boss, Marion L. (1964-1984) BSBA, MSBE, Ed.D., professor emeritus of business administration

Bradley, Lawrence B. (1966-1988) BA, MA, professor emeritus of speech communication/theatre

Brassill, Joann A. (1967-1987) BA, MA, MFA, professor emeritus of art

Caduff, Gerald F. (1947-1978) BSEE, ME, Ph.D., professor emeritus of electronics

Cotner, Jane (1960-1976) AB, BSLS, professor emeritus of library sciences

Davison, Earle (1950-1975) BS, professor emeritus of industrial technology

Dudley, Lloyd P. (1956-1972) BA, MA, professor emeritus of speech communication

Ervin, Dwain T. (1964-1984) BA, MA, Ph.D., professor emeritus of history

Farwell, Hermon W. (1966-1984) AB, MA, professor emeritus of speech communication

Fouts, Kenneth B. (1962-1985) AA, BFA, MA, Ph.D., professor emeritus of speech communication

Griffith, Gerald V. (1947-1967) BS, MA, professor emeritus of agriculture

Hammond, William A. (1957-1987) BSBA, MBA, professor emeritus of accounting

Hobbs, Harold C. (1966-1984) BA, MA, Ph.D., professor emeritus of psychology

Hobson, Henry (1948-1978); BE, professor emeritus of air conditioning/refrigeration

Hostetler, Charles E. (1964-1988); BA, MA, Ed.D., professor emeritus of education

Howard, John R. (1967-1986); BA, MA, professor emeritus of geography

Howard, Maurice L. (1962-1979) Th.B., AB, MA, Ed.D., professor emeritus of psychology

Ihrig, Paul R. (1946-1971) BS, MA, professor emeritus of fine arts

Jurie, Carl A. (1956-1980) BA, MA, professor emeritus of geology

Kent, (Kahn) Theodore C. (1965-1978) BA, MA, Ph.D., Sc.D., professor emeritus of behavioral science

Kenyon, Gordon R. (1960-1980) BA, MA, Ph.D., professor emeritus of history

Kurtin, Alfred D. (1945-1969) BA, MA, emeritus registrar

Levy, Ralph W. (1957-1981) BA, MA, professor emeritus of music

Lund, Carl (1957-1978) professor emeritus of welding

Middleton, Donald S. (1948-1980) BA, M.Ed.D., professor emeritus of electronics

Mikkelsen, Harry E. (1958-1977) BA, M.Basic Science, professor emeritus of physics

Miller, Robert E. (1952-1983) BS, MS, professor emeritus of chemistry

Miller, Wilbur C. (1967-1988); BA, MBS, Ph.D., professor emeritus of mathematics

Orman, Leonard M. (1970-1982) BS, MA, professor emeritus of mathematics

Prater, Joseph C., Jr. (1956-1988); BS, MS, professor emeritus of mathematics

Redman, Ralph J. (1965-1989); BA, MA, MAT, professor emeritus of mathematics

Reiff, Glenn A. (1978-1989); BS, MS, professor emeritus of electronics engineering technology

Reiner, Edward R. (1964-1988) BS, MA, professor emeritus of management

Roach, George F. (1966-1989); AB, MM, professor emeritus of music

Rudd, John P. (1965-1980) BA, MA, Ed.D. professor emeritus of psychology

Sadler, George (1965-1987) BS, MS, Ph.D., professor emeritus of economics

Sajbel, Edward (1955-1989) AA, BA, MA, professor emeritus of art

Sanderson, James M. (1947-1976) BS, MA, professor emeritus of history

Senatore, John J. (1958-1986) BA, MA, Ed.D., professor emeritus of English

Shih, Tsang Yu (Tom) (1964-1984) BSM, professor emeritus of metallurgical engineering technology

Simms, Houston C. (1947-1975) BA, MA, professor emeritus of biology

Smith, John E. (1962-1989); AA, BA, Ph.D., professor emeritus of chemistry

Socha, Frances J. (1967-1982) BSN, MA, professor emeritus of nursing

Taussig, Anna (1960-1977) AB, MA, professor emeritus of foreign language

Tilley, Lewis L. (1965-1983) BFA, MFA, professor emeritus of art

Townley, Rodney D. (1945-1978) M.Mus.Ed., professor emeritus of music

Vunovich, Bogdan (Bob) (1967-1988) AB, MA, professor emeritus of mathematics

Wack, Dunstan J. (1969-1982) BS, MA, Ph.D., professor emeritus of psychology

Watkins, Sallie A. (1966-1988) BS, MS, Ph.D., profesor emeritus of physics

Whitmer, Jean J. (1970-1987) BA, MA, Ph.D., professor emeritus of education

Whitsitt, Ronald G. (1959-1989); BA, MA, professor emeritus of English

RANKED FACULTY

The following individuals were ranked faculty members in the 1989-90 academic year. The date in parenthesis indicates the initial year of regular appointment to the ranked faculty.

Abrahamson, Gayle (1985) assistant professor of library services; AA, Golden Valley Lutheran College; BA, Concordia College; MAR, Iliff School of Theology; MA, University of Denver

Aguilar, M. Kay (1964) professor of human performance and leisure studies; BS, Lock Haven State College; MA, Adams State College; Ed.D., University of Northern Colorado

Ahmadian, Ahmad (1986) associate professor of management; BA, Tehran University; MBA, Ph.D., North Texas State

Aichele, Ronald G. (1972) associate professor of philosophy; BA, MA, Ph.D., University of Missouri

Allen, Ernest E. (1963) professor of mathematics, and director, Accountability and Faculty Development; BS, Wayne State University; BS, MA, Michigan State University; MATM, University of Detroit; Ed.D., University of Northern Colorado

Anderson, Deyrol E. (1983) professor of mass communications; BA, Washington State University; MA, San Francisco State University; Ph.D., University of Denver

Askwig, William J. (1962) professor of economics; BSBA, MBA, University of Denver; Ph.D, Texas Tech University

Atteberry, Sarah (1975) assistant professor of nursing; BS, University of Southern Colorado; MS, University of Northern Colorado; MSN, University of Southern California at Los Angeles

Audrey, Laura (1989) assistant professor of art; BA, Colorado State University

Baca, Judy M. (1981) associate professor of social work; BS, University of Southern Colorado; MSW, Arizona State University

Banks, Jessie F. (1966) assistant professor of human performance and leisure studies; BS, Central State University; MA, Adams State College

Bassein, Beth Ann (1966) professor of English; BA, Tarkio College; MA, Ph.D., University of Missouri

Baugh, Janice E. (1989) assistant professor of library services; BS, Western Kentucky University; MA, University of Denver

Beck, J. Michael (1970) associate professor of music; BA, University of Southern Colorado; MA, Western State College; DA, University of Northern Colorado

Benton, Johnny (1968) professor of speech communication; BA, Panhandle A & M; MA, University of Arkansas; Ph.D., University of Oklahoma

Beruman, Kathleen (1987) assistant professor of nursing; BSN, University of Southern Colorado; MSN, University of Texas at Austin

Billington, Peter J. (1989) associate professor of management; BS, Worcester Polytechnic Institute; MBA, Northeastern University; Ph.D., Cornell University

Binkly, Gail N. (1986) assistant professor of mass communications; BS, University of Southern Colorado; MA, The Ohio State University

Borton, John M. (1983) assistant professor of computer science technology; BA, Purdue University; MS, University of Northern Colorado

Bottini, Patrick W. (1968) associate professor of industrial science and technology; BS, Southern Colorado State College; MA, Adams State College

Bridges, Gary (1986) assistant professor of accounting; BA, Baylor University; MBA, University of Texas; CPA

Bright, A. Leon (1963) professor of foreign language; BS, Central Missouri State College; MA, University of Kansas; Ph.D., University of New Mexico

Browne, Nancy (1988) assistant professor of life sciences; BS, Western Illinois University; MS, Ph.D., University of Illinois

Buckles, William G. (1965) professor of anthropology; BA, MA, Ph.D., University of Colorado

Burgos, Fernando (1988) assistant professor of mathematics; BS, Universidad De Yucatan; MS, Instituto Politecnico Nacional De Mexico; Ph.D., Northeastern University

Burton, Peter (1988) assistant professor of electrical engineering; BSEE, University of London; MSEE, Southern Methodist University

Cain, Robert L. (1970) associate professor of library services; BA, Baylor University; MLS, Louisiana State University

Calvetti, Daniela (1989) assistant professor of mathematics; BS, Univeristy of diBologna, Italy; MS, University of North Carolina

Cameron, James T. (1970) professor of psychology; BA, The Colorado College; MA, Ph.D., University of Colorado

Carpenter, Jill (1990) assistant reference librarian; BA, Benedictine College; MA, University of Illinois

Chandler, William D. (1982) assistant professor of management; BS, Massachusetts Institute of Technology; MBA, University of San Francisco

Chen, Frank T. (1982) associate professor of mechanical engineering technology; BSME, Chung Cheng College of Science and Engineering, Taiwan; MSME, Clemson University; Ph.D., North Carolina State University

Cheng, Joseph K. (1973) professor of civil engineering technology; BS, Taiwan Christian College; MS, University of Massachusetts; Ph.D., University of Oklahoma

Cobaugh, Robert (1986) associate professor of mechanical engineering technology; BS, University of Pittsburgh; MS, Colorado State University

Cockrell, David (1989) assistant professor of human performance and leisure studies; BA, MS, University of Pennsylvania; Ph.D., University of Idaho

Connelly, Jerald J. (1979) professor of chemistry; BS, Ph.D., University of Rochester

Cook, Robert N. (1981) professor of computer science technology; BEE, General Motors Institute; MSE, University of Michigan; M.Sc., Ph.D., University of Western Ontario

Covi, Silvio (1986) associate professor of foreign language; B.Th., Universitas Urbaniana, Rome, Italy; MA, Ph.D., State University of New York at Buffalo

Croxton, Carol I. (1978) associate professor of English; BA, MA, Ph.D., Ball State University

Dawson, Roseanne (1984) associate professor of library services; BA, Drake University; MA, University of Iowa; MLS, University of Denver

Daxton, Lawrence E. (1966) professor of history; BA, MA, University of Northern Colorado Ph.D., University of Colorado

Derr, James B. (1984) professor of mathematics; BA, College of St. Thomas; Ph.D., Michigan State University

Dhatt, Yashwant S. (1983) associate professor of finance; B.C., MA, University of Delhi; MBA, McGill University; Ph.D., Georgia State University

Dille, Ralph G. (1976) professor of English; BA, BS, MA, Bowling Green State University; Ph.D., Ball State University

Dorsch, John A. (1965) professor of biology; BA, Willamette University; MS, Ph.D., Oregon State University

Driscoll, Donald J. (1965) professor of philosophy; BA, Sophia University; MA, Ph.D., New School for Social Research

Druellnger, Melvin L. (1985) professor of chemistry, and director, Research and Sponsored Programs; BS, Indiana University; Ph.D., University of Wisconsin

Duncan, James L. (1958) professor of music; BM, Central College; MM, Eastman School of Music

Eagan, William T. (1962) professor of history, and director, Academic Advising; BA, University of Denver; MA, Claremont Graduate School

Eisenbeis, H. Richard (1988) associate professor of management; BA, Lafayette College; MS, University of Montana; MS, Ph.D., The University of Arizona

Farris, Gerald C. (1967) professor of biology; BA, Dakota Wesleyan University; MS, University of Utah; MS, Ph.D., Colorado State University

Forsyth, Dan W. (1984) associate professor of anthropology; BA, University of California; MA, University of Chicago; Ph.D., University of California

Gardner, Rick M. (1969) professor of psychology; BA, Humboldt State University; MA, Ph.D., University of Nevada

Giffin, Walter C. (1987) professor of engineering; BIE, MSc, Ph.D., The Ohio State University

Gilbert, Gail L. (1980) associate professor of nursing; BS, Texas Women's University; ADN, Texarkana Community College; BSN, Metropolitan State College; MSN, University of Texas at Arlington

Gill, John P., Jr. (1971) professor of mathematics; BS, University of Georgia; MA, University of Alabama; Ph.D., Colorado State University

Graham, Robert E. (1980) associate professor of physics; BS, University of Tulsa; MS, Ph.D., University of Arkansas

Green, Pearl (Penny) (1982) assistant professor of sociology; BA, City College of New York; MA, Ph.D., Southern Illinois University

Greet, Richard J. (1983) professor of mechanical engineering technology; BEE, Rensselaer Polytechnic Institute; MS, Ph.D., Harvard University

Griffin, John R. (1963) professor of English; BS, MS, Xavier University; Ph.D., Ottawa University; Ph.D., Trinity College, Dublin

Gutierrez, James M. (1978) assistant professor of education; BA, University of Southern Colorado; MA, New Mexico Highlands University

Hammer, Charles R. (1964) associate professor of chemistry; BA, Ph.D., University of Utah

Hayden, Michael A. (1989) assistant professor of industrial science and technology; AAS, Danville Area Community College; BS, MS, Eastern Illinois University; Ph.D., Iowa State University

Hearn, June L. (1967) assistant professor of psychology; BA Rice University; MS, Iowa State University

Hench, Robert W. (1965) associate professor of art; BFA, University of Denver; MA, The Colorado College

Herrmann, Scott J. (1968) professor of biology; BS, Northern Illinois University; Ph.D., University of Colorado

Hirth, Alan (1976) assistant professor of civil engineering technology; BA, University of Colorado

Holderness, Ward L. (1969) assistant professor of civil engineering technology; AAS, BS, Southern Colorado State College

Hughes, Cornelius G. (1976) associate professor of sociology; BA, Belmont College; MA, California State University at Northridge; Ph.D., The Pennsylvania State University

Illick, Peter M. (1971) assistant professor of English; BA, University of Vermont; MA, University of Wyoming

Janes, Donald W. (1963) professor of biology; BA, Baker University; MA, University of Kansas, Ph.D., Kansas State University

Jenkins, Robert B. (1972) professor of electronics engineering technology; BS, University of Washington; ME, The Pennsylvania State University

Jensen, Carl G. (1970) professor of art; BS, Indiana Central College; MAT, Indiana University; MFA, University of New Mexico

Johnson, Roger W. (1977) associate professor of mathematics; BS, Fort Lewis College; MS, DA, Idaho State University

Kaplan, Steve (1989) assistant professor of English; BA, University of California; MA, Ph.D., University of Tuebingen

Keller Robert L. (1974) professor of sociology; BA, University of Colorado; MS, Colorado State University; Ph.D., University of Montana

Kellogg, William L. (1969) associate professor of music; BA, MS, Omaha University; MM, University of Nebraska

King, Karmyn M. (1979) associate professor of nursing; ADN, Community College of Denver; BS, MS, University of Colorado

Knight, Douglas W. (1980) associate professor of computer science technology; BS, MS, Ph.D., Arizona State University

Krinsky, Richard (1968) professor of psychology; BA, MA, Michigan State University; Ph.D., University of Washington

Krinsky, Suzanne G. (1968) associate professor of psychology; BA, Wayne State University; MA, Michigan State University; Ph.D., University of Washington

Kulkosky, Paul J. (1984) professor of psychology; BA, Columbia College; MA, Columbia University; Ph.D., University of Washington

Lamb, Therese (1987) professor of library services; BA, Standford University; MA, University of Washington; MA, University of Denver

Latka, Nicholas (1987) assistant professor of art; BS, University of Southern Colorado; MFA, University of Colorado

Li, Hung Chiang (1969) professor of mathematics; BA, University of Chekiang; MS, Michigan State University; Ph.D., Purdue University

Linam, Jay H. (1965) professor of biology; BS, University of Idaho; MS, Ph.D., University of Utah

Louisell, James (1989) assistant professor of mathematics; BS, University of Minnesota; Ph.D., University of Minnesota

Love, Alan P. (1961) professor of political science; BA, University of Colorado; doctor rerum politicarum, University of Vienna, Austria

Madrid, L. Dennis (1976) professor of psychology; BA, University of Southern Colorado; MS, New Mexico Highlands University; Ph.D., University of California at Santa Barbara

Mahan, Kent I. (1969) *professor of chemistry*; BS, *Southwest Missouri* State University; Ph.D., University of Missouri

Malouff, John (1989) assistant professor of psychology; BS, University of Southern Colorado; JD, University of Colorado; Ph.D., Arizona State University

Marino, Charles J. (1966) associate professor of art; BA, St. John's College; BFA, Pratt Institute; MA, Columbia Teacher's College

Martinet, Anthony (1969) associate professor of automotive parts and service management; BS, University of Southern Colorado; M.Ed., Colorado State University

Massey, Frank A. Jr. (1963) associate professor of engineering; BIE, BBA, MS, University of Minnesota; Ph.D., University of Wisconsin

May, Alan M. (1984) associate professor of computer science technology; BS, Wilmington College; Ph.D., University of Cincinnati

McCanne, Roy (1974) professor of education, and director, Instructional Development; BA, Oberlin College; MA, Ed.D., University of Denver

Means, Gary (1986) *Professor of social work*; BA, MA, San Diego State University; Ph.D., University of Denver

Mettler, Marilynn V. (1980) associate professor of nursing; BSN, University of Missouri; MS, University of Colorado

Miller, Glenn W. (1974) *assistant professor of mass communications*; BA, University of Southern Colorado; MA, University of Denver

Miller, Margaret G. (1976) associate professor of education; BA, Indiana University; MS, Butler University; Ph.D., Purdue University

Mills, Nancy (1988) *assistant professor of industrial and manufacturing* engineering; BSE, MSE, Arizona State University; MBA, Ph.D., Oregon State University

Milne, Donald C. (1965) associate professor of foreign language; BA, MA, University of Utah; Ph.D., Brigham Young University

Mo, Suchoon S. (1973) professor of psychology; BS, Idaho State College; MA, Indiana University; Ph.D., University of Pennsylvania

Moffeit, Tony A. (1976) associate professor of library services, BS, Oklahoma State University; MLS, University of Oklahoma

Morales, Herberto (1987) associate professor of foreign language; seminaries in Las Casas, Montezuma, and Puebla, Mexico; Ph.D., Gregorian University in Rome

Muller, Doyle K. (1963) associate professor of music; BM, BA, Huron College; MM, University of Colorado

Murray, Hal (1969) associate professor of biology; BA, MS, University of Arizona, Ph.D., Purdue University

Mutzebaugh, Carole A. (1981) professor of nursing; BS, MS, Ed.D., University of Colorado

Nicholl, Larimore R. (1968) assistant professor of philosophy; BA, The Colorado College; MA, Claremont Graduate School

Nichols, Janet E. (1977) assistant professor of mathematics; BA, Adelphi University; MS, Lehigh University

Norelko, Gary (1984) associate professor of finance; BA, MA, California State University at Los Angeles; Ph.D., University of Southern California

O'Leary, Emmett L. (1972) *associate professor of speech communication*; BA, Adams State College; MA, Central Michigan University; Ph.D., University of Nebraska

Olin, Carol M. (1971) assistant professor of English; BA, MA, University of Colorado

Orman, Patricia (1978) associate professor of mass communications; BA, University of New Hampshire; MA, University of Northern Colorado

Orr, Gilbert F. (1977) associate professor of mathematics; BA, St. Johns University; MS, Ph.D., University of Miami

Osborn, Neal L. (1965) professor of biology; BA, Baldwin-Wallace College; BA, University of Southern Colorado; MS, Ph.D., University of New Mexico

Otis, Pauletta (1988) assistant professor of political science; BA, MA, University of Northern Colorado; MA, Ph.D., University of Denver

Padgett, John H. (1969) associate professor of computer science technology; BS, University of Southern Colorado; MBA, University of Colorado

Pavlik, Richard E. (1963) professor of mass communications; BS, MA, The Ohio State University

Perkins, David M. (1978) professor of electronics engineering technology; BSEE, The Pennsylvania State University; MSEE, Princeton University

Peterlin, Edward L. (1963) associate professor of accounting; BS, University of Colorado; MA, University of Northern Colorado, CPA

Phillips, David L. (1971) professor of mathematics; BS, Ball State University; MS, Ph.D., Purdue University

Plonkey, Kenneth D. (1968) professor of theatre; BA, University of Northern Colorado; MA, Ph.D., Southern Illinois University

Podgurski, Dwight T. (1985) instructor of speech communication; BS, University of Wyoming; MA, California State University at Northridge

Post-Gorden, Joan C. (1970) professor of psychology, and director, Scholarly and Creative Activities; BS, Manchester College; MS, Ph.D., University of Georgia

Proctor, Kristina (1989) assistant professor of chemistry; BS, University of Southern Colorado; Ph.D., Colorado State University

Rader, T. Freeman (1987) assistant professor of business administration; BA, MA, Ph.D., University of Colorado

Regassa, Hailu (1989) assistant professor of accounting; BBA, Haile Selassie University; MBA, Ph.D. candidate (ABD), University of Oregon

Ribal, John L. (1988) assistant professor of economics; BA, Adams State College; MS, New Mexico State University; Ph.D., University of Notre Dame

Ryan, John E. (1980) associate professor of interdisciplinary studies, and director, Special Academic Programs; BA, University of California at Los Angeles; MA, California State University at Northridge; MA, Ph.D., Claremont Gradute School

Sabo, Barbara J. (1974) associate professor of nursing; RN, St. Mary Corwin Hospital School of Nursing; AA, Pueblo College; BS, MS, University of Colorado

Sandoval, David A. (1980) professor of Chicano studies and history; BS, Eastern New Mexico University; MA, Southern Methodist University; Ph.D., University of Utah

Sarper, Huseyin (1988) assistant professor of industrial engineering; BS, The Pennsylvania State University; MS, Ph.D., Virginia Polytechnic Institute

Sarver, P. Merle (1965) professor of economics; AA, Lamar State College; BA, MA, University of Texas; Ph.D., University of Nebraska

Sathi, Harbans L. (1984) professor of computer science technology; DIC, Imperial College of Science and Technology (University of London); MA, Punjab University; Ph.D., Indian Institute of Technology

Saul, Roger E. (1983) associate professor of chemistry; BS, MS, Michigan Technological University; DA, University of Northern Colorado

Schaeffer, Frederick (1963) professor of geology; BSGE, AM, Washington University; Ph.D., University of Utah

Schnur, Paul (1978) professor of psychology; BA, Queens College; MA, North Carolina State University; Ph.D., Indiana University

Sefcovic, Paul A. (1989) assistant professor of automotive parts and service management; AAS, BS, MA, University of Southern Colorado

Senatore, Margaret L. (1964) assistant professor of English; BA, The Colorado College; MA, University of Colorado

Shah, Abhay (1988) assistant professor of marketing; BA, St. Xavier's College (Calcutta University); MBA, University of Evansville

Sherman, John R. (1971) professor of speech communication; BA, Hunter College; MA, Ph.D., Southern Illinois University

Smith, Robert L. (1974) assistant professor of computer science technology; BS, University of Southern Colorado

Solis, Jose J. (1973) associate professor of social work; BS, University of Southern Colorado; MSW, University of Denver

Soto, Hortensia (1989) director, Math Learning Center; BS, MS, Chadron State University

Spenny, David L. (1980) Professor of physics; BS, Wittenberg University; Ph.D., University of Colorado

Stjernholm, Kirstine (1967) associate professor of library services; BA, Augustana College; MA, University of Denver

Strader, Robert L. (1969) professor of education; AA, Pueblo College; BA, MA, University of Northern Colorado; Ed.D., University of Idaho

Strobel, John D. (1960) professor of music; BME, Fort Hays State College; MM, DMA, University of Michigan

Stutters, Donald G. (1960) professor of human performance and leisure studies; BA, MA, Southwestern Oklahoma State College; Ed.D., University of Colorado

Sublette, James E. (1984) professor of biology; BS, MS, University of Arkansas; Ph.D., University of Oklahoma

Sullivan, Daniel R. (1970) associate professor of library services; BA, University of Kentucky; MLS, University of Oregon

Sweet, Jerry L. (1976) associate professor of mechanical engineering technology; AAS, Pueblo College; BS, University of Southern Colorado; MS, Colorado State University

Tappen, John B. (1982) associate professor of computer science technology; BA, Wesleyan University; BS, University of Utah; MS, The University of Arizona; Ph.D., University of Tennessee

Taylor, Cynthia (1989) instructor of English; BA, MA, University of Idaho

Taylor, Kenneth B. (1969) assistant professor of English; BA, University of Southern Colorado; MA, University of Texas at El Paso

Tedrow, Charles E. (1968) associate professor of industrial science and technology; AB, MA, University of Northern Colorado

Vincent, Gary L. (1968) associate professor of English; BA, MAT, Northwestern Oklahoma State College; Ed.D., University of Northern Colorado

Vorcé, Armand E. (1977) professor of music; BS, Ithaca College; MA, University of Iowa; Ed.D., Boston University School of Education

Wade, Robert A. (1970) associate professor of automotive parts and service management; AA, Treasure Valley Community College; BS, M.Ed., Colorado State University

Wahl, E. Frances (1987) assistant professor of nursing; BSN, University of Illinois; MS, University of Colorado

Wallin, Marta J. (1987) assistant professor of physics; MS, Jagiellonian University, Cracow, Poland; Ph.D., University of Wyoming

Wands, Robert J. (1963) associate professor of art; BFA, MA, University of Denver

Warfield, Dale E. (1971) professor of electronics engineering technology; AA, Austin Junior College; BEE, University of Minnesota; MSEE, Southern Methodist University

Watkins, Donna M. (1988) associate professor of management; BBA, Sul Ross State University; MAT, Angelo State University; Ph.D., New Mexico State University

Whitesell, Diane (1988) assistant professor of accounting; BSBA, MBA, University of Colorado at Colorado Springs

Wilkes, Linda M. (1983) associate professor of chemistry; BA, California State University; Ph.D., University of Nevada at Reno

Withnell, Melvin C. (1967) professor of mathematics; BS, Valley City State College; MS, University of North Dakota; MA, University of Illinois; Ph.D., University of Michigan

Womack, Larry O. (1972) associate professor of civil engineering technology; AA, University of Southern Colorado; BSCE, Colorado State University; MSCE, University of Missouri

Wright, Will (1986) associate professor of sociology; BA, University of Oregon; MA, University of Rochester; Ph.D., University of California

Zeis, Charles (1987) assistant professor of business administration; BA, University of St. Thomas; MS, Ph.D., Texas A & M University

ARTISTS-IN-RESIDENCE

Cedrone, Frank J. (1969) artist-in-residence; artist diploma in piano, Boston Conservatory

Markowski, Victoria (1969) artist-in-residence; BM, Boston Conservatory

Mendoza, Dorothy (1990) artist-in-residence; BA, University of Southern Colorado

Mendoza, John (1990) artist-in-residence; AA, Pueblo Junior College; BA, MA, University of Northern Colorado.

MILITARY SCIENCE FACULTY

Cumberbatch, Andrew sergeant first class, U.S. Army (1988) instructor of military science

Dillon, Robert D. lieutenant colonel, U.S. Army (1987) professor of military science; BS, Troy State University; MA, Farleigh Dickinson University

Edens, Fred R. captain, U.S. Army (1988) assistant professsor of military science; BS, MS, East Tennessee State University

Hill, Terry master sergeant, U.S. Army (1990) assistant professor of military science; BA, Jacksonville State University; MS, East Texas State University

Miura, Patrick captain, U.S. Army (1990) senior instructor

ACADEMIC CALENDARS 1990-93

FALL AND SPRING SEMESTERS

Regular academic semesters consist of 15-week terms, including official holidays and the final examination period. Specific information about each academic semester is available in the bulletins published prior to the beginning of each term.

SUMMER COLLEGE

Summer College consists of two five-week sessions and one ten-week session. Specific information about Summer College is available in the bulletin published prior to the beginning of the first five-week session term, from the Office of Continuing Education.

Fall Semester 1990

April 9-20 . . . . . Advisement
April 23-27 . . . . . Early Registration
August 21,22 . . . . . Orientation
August 23,24 . . . . . Registration
August 27 . . . . . Classes Begin
September 3 . . . . . Labor Day (Not a School Holiday)
September 10 . . . . . End Drop/Add
November 19-23 . . . . . Thanksgiving

December 7 . . . . . Classes End
December 10-14. . . . . Final Exams
December 14 . . . . . Finals End

Spring Semester 1991

October 29 - November 9 . Advisement
November 12-16. . . . . Early Registration
January 16 . . . . . Orientation
January 17 . . . . . Registration
January 21 . . . . . Classes Begin
February 4. . . . . End Drop/Add
March 25-29 . . . . . Spring Break (*)
May 3 . . . . . Classes End
May 6-10. . . . . Final Exams
May 10 . . . . . Finals End
May 11 . . . . . Commencement

Summer Semester 1991

April 29 - May 3 . . . . . Advisement
May 31 . . . . . Registration
June 3 . . . . . 5- & 10-Week Classes Begin
July 4. . . . . Independence Day
July 5. . . . . 5-Week Classes End
August 9 . . . . . 10-Week Classes End

*To be announced, based upon School District 60's schedule.
(These calendars are planned in advance and are subject to change.)

Fall Semester 1991

April 8-19. . . . . Advisement
April 22-26 . . . . . Early Registration
August 20,21 . . . . . Orientation
August 22,23 . . . . . Registration
August 26 . . . . . Classes Begin
September 2 . . . . . Labor Day (Not a School Holiday)
September 9 . . . . . End Drop/Add
November 25-29. . . . . Thanksgiving
December 6 . . . . . Classes End
December 9-13. . . . . Final Exams
December 13 . . . . . Finals End

Spring Semester 1992

November 4-15. . . . . Advisement
November 18-22. . . . . Early Registration
January 22 . . . . . Orientation
January 23 . . . . . Registration
January 27 . . . . . Classes Begin
February 10 . . . . . End Drop/Add
March 23-27 . . . . . Spring Break (*)
May 8 . . . . . Classes End

May 11-15. . . . . Final Exams
May 15 . . . . . Finals End
May 16 . . . . . Commencement

Summer Semester 1992

April 27-May 1 . . . . . Early Registration
June 5 . . . . . Registration
June 8 . . . . . 5- & 10-Week Classes Begin
July 3. . . . . Independence Day
July 10. . . . . 5-Week Classes End
August 14 . . . . . 10-Week Classes End

*To be announced, based upon School District 60's schedule.
(These calendars are planned in advance and are subject to change.)

Fall Semester 1992

April 6-17 . . . . . Advisement
April 20-24 . . . . . Early Registration
August 25,26 . . . . . Orientation
August 27,28 . . . . . Registration
August 31 . . . . . Classes Begin
September 7. . . . . Labor Day (Not a School Holiday)
September 14 . . . . . End Drop/Add
November 23-27 . . . . . Thanksgiving
December 11. . . . . Classes End
December14-18. . . . . Final Exams
December 18 . . . . . Finals End

Spring Semester 1993

November 2-13. . . . . Advisement
November 16-20. . . . . Early Registration
January 20. . . . . Orientation
January 21 . . . . . Registration
January 25 . . . . . Classes Begin
February 8 . . . . . End Drop/Add
March 22-26 . . . . . Spring Break (*)
May 7. . . . . Classes End
May10-14. . . . . Final Exams
May 14 . . . . . Finals End
May 15 . . . . . Commencement

Summer Semester 1993

May 3-7. . . . . Early Registration
June 4. . . . . Registration
June 7 . . . . . 5- & 10-Week Classes Begin
July 5 . . . . . Independence Day
July 9 . . . . . 5-Week Classes End
August 13. . . . . 10-Week Classes End

*To be announced, based upon School District 60's schedule.
(These calendars are planned in advance and are subject to change.)

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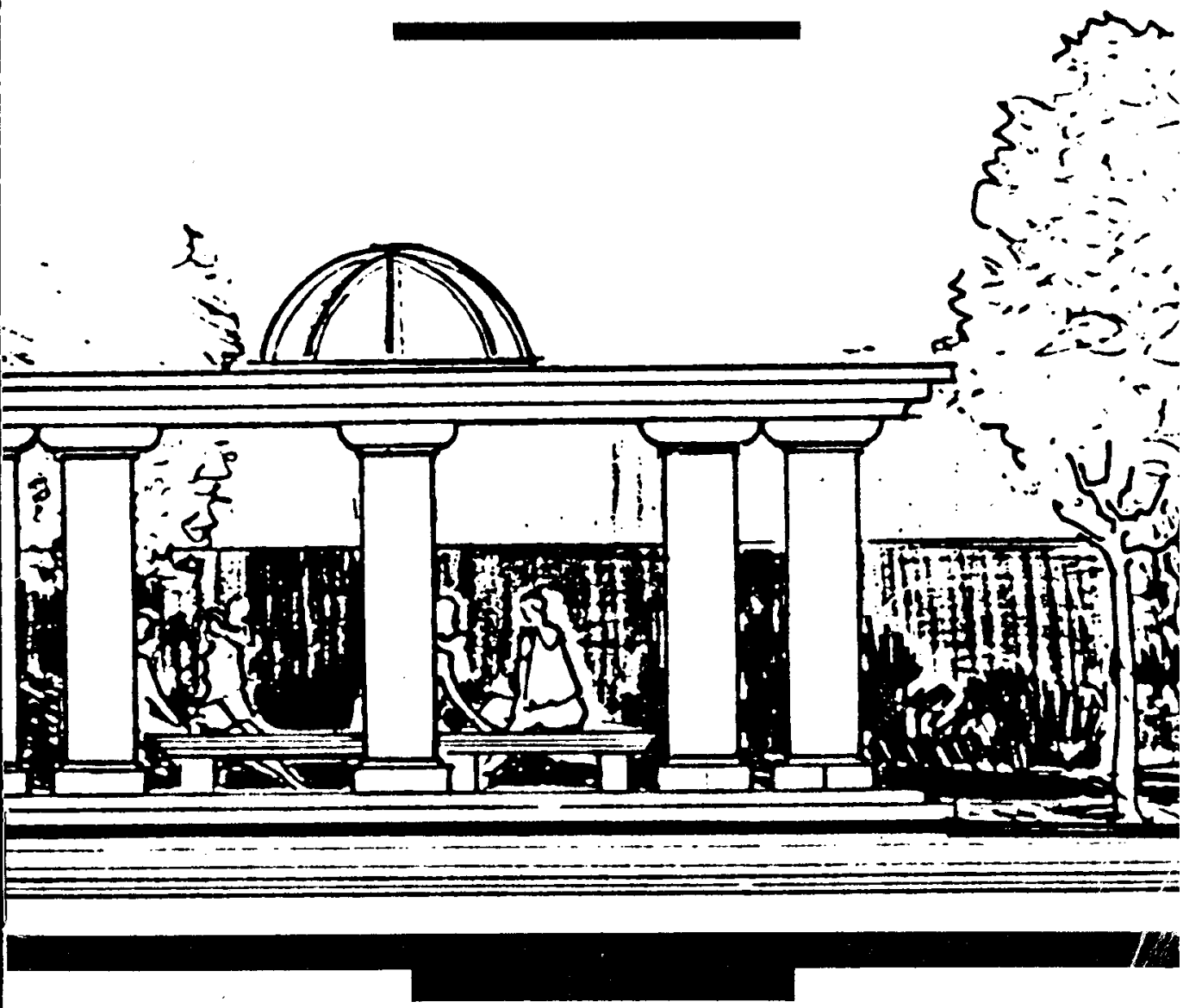
The UNIVERSITY of SOUTHERN COLORADO



1990-92

CATALOG/BULLETIN SUPPLEMENT
EFFECTIVE FALL 1991

1990-92

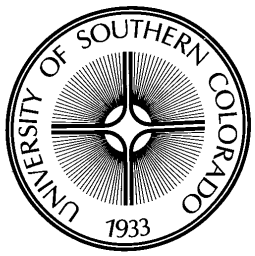
BULLETIN SUPPLEMENT

(COURSE CHANGES, ADDITIONS, SUBSTITUTIONS, AND DELETIONS)

Pueblo, Colorado
Vol. XXIX 7/91 No.5

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 a.m. to 5 p.m. Monday through Friday. Please call or write the admissions office in advance of your visit.



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EFFECTIVE FALL 1991

XXIX **July 1991** **No. 5**

The University of Southern Colorado Bulletin (USPS 857-100) is published four times a year; two times in March, once in July and once in November. Second-class postage paid at Pueblo, Colorado 81003. POSTMASTER: Send address changes to the UNIVERSITY OF SOUTHERN COLORADO, Office of Admissions and Records, 2200 Bonforte Boulevard, Pueblo, Colorado 81001-4901.

POLICY CHANGES

This addendum to the 1990-92 University of Southern Colorado Bulletin contains a number of changes that have been made since the publication of that catalog issue. The changes contained in this addendum are incorporated by reference into the appropriate sections of the 1990-92 University Bulletin. Please note the changes in this addendum.

Addendum to page 10

Advanced Placement

The University of Southern Colorado participates in the Advanced Placement Program of the College Entrance Examination Board. Under the program, outstanding secondary school students may take certain college-level courses in their own high schools. Students who have taken the Advanced Placement Examination and who have received scores of 3, 4, or 5 will be granted university credit as well as advanced placement. USC credit is awarded without a grade, is counted toward graduation credits, and may be used to fulfill specific requirements.

For further information, students should contact the appropriate department of the admissions office.

Addendum to page 40

DEAN'S LIST AND GRADUATION CUM LAUDE

To qualify for placement on the dean's list, published fall and spring semesters, students must achieve a minimum grade-point average of 3.5 and place in the upper 10 percent of all eligible full-time students. To be eligible, students must be degree-seeking and must earn at least 12 credit hours in the semester in which grade points were awarded.

Students maintaining high scholastic averages are awarded undergraduate degrees cum laude, magna cum laude, and summa cum laude. A minimum of 60 hours must be earned at USC for a student to be considered for graduation cum laude, magna cum laude or summa cum laude. To graduate cum laude, a minimum cumulative grade-point average of 3.50 is required; for magna cum laude, a minimum grade-point average of 3.75 is required; and for summa cum laude a minimum grade-point average of 3.90 is required.

Addendum to pages 48 and 49

CLASS 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. Students are not allowed to attend courses for which they are not properly enrolled unless permitted by the instructor.

Each instructor will establish a specific attendance policy effective for the entire semester for his or her classes. The instructor must inform the students of the policy in writing before the end of the course-addition period.

Although students may drop classes on their own initiative within timelines established by policy, faculty members have the right to drop students for non-attendance.

COURSE CHANGES

Addendum to pages 207 - 296

Change course description as follows:

For course changes other than additions or deletions, **changes are indicated in bold type. (Course titles and credit hours also are in bold type.)**

AUTOMOTIVE PARTS AND SERVICE MANAGEMENT (APSM)

APSM 225 Course title changed to: **Power and Energy Technology.** Course description changed to: **Current uses of the various forms of energy and technology involved in generating power from these sources and its impact on society and the environment.**

BIOLOGY (BIOL)

New course added:

BIOL 220 Medical Terminology 1(1-0)
Basic prefixes, word roots, combining forms and suffixes of medical terminology and human anatomy are covered. (S)

BUSINESS ADMINISTRATION (BUSAD)

New course added:

BUSAD 580 Business Research Methodology 3(3-0)
Fundamentals of qualitative and quantitative research design including development of hypothesis and assessment techniques in preparation for undertaking research projects. (S/U grading) (S)

Course deletion:

BUSAD 554 Seminar in Management of Non-Profit Organizations

BUSAD 550 Course title changed to: **Quantitative Decision Making;** course description changed to: **Application of quantitative and computer techniques in managerial decision making. Topics include optimization, decision analysis, and other formal decision methods.**

BUSAD 551 Course title changed to: **Business Ethics and Environment;** course description changed to: **The impact of continued social political, economic, technological, and legal pressures upon ethical business issues and managerial decision making;** term offered changed to: *

CHEMISTRY (CHEM)

CHEM 119 Course changed to: **CHEM 123;** course title changed to: **General Chemistry II for Engineers;** credits changed from: 4 to **2**; course description changed to: **Short version of General Chemistry II. Selected topics appropriate for engineering students; Thermodynamics, kinetics, equilibrium, electro-chemistry acids and bases;** Prerequisite: **CHEM 121, 121L:** term offered changed to: **S**

FINANCE (FIN)

Course deletion:

FIN 534 Loan and Risk Evaluation: A Case Approach

FIN 533 Course title changed to: **Investment Portfolio Management** course description changed to: **A rigorous analysis of theory, practice, and strategy leading to the construction, management, and evaluation of investment portfolios by individual and institutional investors.**

HISTORY (HIST)

New courses added:

HIST 493 Seminar 3(3-0)
Seminar devoted to special topics and issues in History; emphasis on research paper. Prerequisite: Advanced standing with a major or minor in history or permission of instructor. (*)

HIST 593 Seminar 3(3-0)
Seminar devoted to specific areas and issues in History; emphasis on research paper. Prerequisite: graduate standing (*)

HUMAN PERFORMANCE AND LEISURE STUDIES (HP)

New courses added:

HP 113L Whitewater Boating 1(0-2)
(F,S,SS)

HP 181L Intercollegiate Soccer 2(0-4)
(F)

HP 249 Skills and Techniques of Ropes Course Leadership 1(1-0)
Basic Skills and techniques of instructing ropes courses. Includes technical skills and group facilitation. (F,S,SS)

HP 281L Intercollegiate Soccer 2(0-4)
(F)

HP 465 Course title changed to: **Adapted Physical Education;** Prerequisite to: **KIN 254**

INDUSTRIAL SCIENCE AND TECHNOLOGY (IST)

New courses added:

IST 205 Issues and Trends in Technology 2(2-0)
Current aesthetic, economic, environmental, ethical, global, ideological, legal, personal, societal, etc., impacts, issues and trends of technology. (F)

IST 401 Production Systems 3(1-4)
Exercise in the research and development, and production of a product. Industrial organization and production methods. Prerequisite: Permission of instructor. (F)

Course deletions:

IST 204 Production Systems

IST 305 World of Construction and Manufacturing

IST 101 Contact hour changed from: (0-6) to: **(1-4);** course description changed to: **Safe and efficient selection, utilization and maintenance of equipment to process forest products material used in construction and manufacturing.**

IST 103 Course number changed to **206;** course description changed to: **Concepts and procedures used to construct commercial, manufacturing and residential buildings; public works; and transportation and power systems;** Prerequisite changed to: **IST 101.**

IST 202 Course number changed to: **121;** contact hour changed from (0-6) to: **(2-2).**

IST 320 Course title changed to: **Industrial Manufacturing I;** course description changed to: **Industrial processes and techniques. Focus on casting, material removal and plastics. Includes manufacturing systems and cost estimating;** Prerequisite: IST 121 or 122.

IST 331 Course title changed to: **Industrial Manufacturing II;** contact hour changed from (0-6) to: **(1-4);** change course description to: **Industrial processes and techniques. Focus on adhesive and cohesive joining, hot and cold forming, and heat treatment. Includes operations planning, and process and quality control;** change Prerequisite to: **IST 320.**

IST 361 Course number changed to: **122;** contact hour changed from: (3-0) to: **(2-2);** course description changed to: **Properties and application of popular and innovative construction materials, including ceramics, forest product materials, metals, sealants, insulations, coatings and others;** no Prerequisite; term offered: **F.**

IST 362 Change prerequisite to: **121 or 122, 206.**

IST 377 Course title changed to: **Curriculum Development and Evaluation in Industrial Science Technology;** term offered to: **F.**

IST 455 Course title changed to: **Methods/ Techniques of Teaching Industrial Science Technology;** term offered to: **S.**

MANAGEMENT (MGMT)

Course deletion:

MGMT 561 Advanced Database Management Systems

MGMT 520 Course title changed to: **Management of Organizational Behavior;** course description changed to: **Ideas and concepts for increasing effectiveness in organizations. Major topics include personality, motivation, leadership, communication, group dynamics, change and conflict, and contingencies of work unit design.**

MGMT 521 Course title changed to: **Theories of Organizational Design;** course description changed to: **Identification of external environments faced by organizations and theories of organizational design that enable organizations to operate more effectively within their respective environments.**

MGMT 523 Course title changed to: **Management of Non-Profit Organizations;** course description changed to: **Examines differences among public, charitable, and private organizations regarding their external environments, goals, strategies, administrative procedures, operations, and human resource management.**

MATHEMATICS (MATH)

New courses added:

MATH 099 Intermediate Algebra 4(4-0)
A course designed to broaden and deepen algebraic problem solving skills. Topics include systems, equations, roots, radicals, complex numbers, quadratic equations, factoring polynomials, function annotation and graphs. (S/U grading) (F,S,SS)

MATH 419 Number Theory 3(3-0)
Divisibility, prime numbers, linear congruences, multiplicative functions, cryptology, primitive roots, and quadratic residues. Prerequisite: MATH 307 or MATH 320. (F)

MATH 330 Change in credit from: 4 to: **3.**

MATH 377 Change in credit from: 4 to: **3.**

MILITARY SCIENCE (MILSC)

Course deletion:

MILSC 101 Adventure Training and Army Systems Introduction

MILSC 102 Basic Survival Skills

MILSC 201 Orienteering

MILSC 202 Basic Mountaineering Techniques

MILSC 204 ROTC Basic Camp

MILSC 211 Public Speaking

MILSC 301 Leadership and Basic Tactical Theory

MILSC 301L Leadership and Basic Tactical Lab

MILSC 302 Leadership and Advanced Tactical Theory

MILSC 302L Leadership and Advanced Tactical Lab

MILSC 304 ROTC Advanced Camp

MILSC 310 Principles of Management

MILSC 401 The American Military Experience

MILSC 402 Ethics, Professionalism & Army Management Systems

MILSC 402L Ethics, Professionalism & Army Management Systems Lab

MILSC 202 Course changed to: **HP 114L;** contact hours changed from: (1-0) to: **(0-2);** credit remains 1; course description deleted.

PHYSICS/PHYSICAL SCIENCE (PHYS)

New course added:

PHYS 499 Thesis Research 1(1-0)
(*)

RECREATION (REC)

New courses added:

REC 360 Outdoor Education 3(3-0)
Concepts and methods of outdoor education and interpretation. Students learn to teach outdoor living skills and natural history using experiential methods in an outdoor setting. Prerequisite: Permission of Instructor. (S)

REC 370 Outdoor Leadership 4(2-4)
Intensive field course in wilderness expedition leadership, trip planning, equipment, rations, navigation, group dynamics, and decision making. Leads to certification through the Wilderness Education Association. Prerequisite: Permission of Instructor. (SS)

REC 340 Course title changed to: **Recreation Program Planning;** change credit from: 2 to: **3.**

REC 350 Credit changed from: 2 to: **3;** course description changed to: **Leadership and supervisory functions in professional recreation service. Addresses program leadership techniques and styles, leadership theory, personnel supervision, and group dynamics;** Prerequisite: **permission of instructor.**

REC 480 Course description changed to: **Community and clinical recreation services for the mentally retarded, law offenders, psychologically impaired, sensory impaired, physically disabled, disadvantaged or aging; Prerequisite: permission of instructor.**

REC 481 Change in contact hour from: (1-2) to: **(3-0).** course description changed to: **Examination of the outdoor recreation experience, the organization of resource-based recreation management and key outdoor recreation policy issues; Prerequisite: permission of instructor.**

REC 493 Change in credit from: 1 to: **2;** course description changed to: **Advanced in-depth examinations of contemporary issues in leisure/recreation. Includes student-led discussions, in-depth term projects, and comprehensive examinations. Interview and resume preparation are emphasized;** Prerequisite: **REC 340.**

SOCIAL WORK (SW)

New courses added:

SW 500 Workshop (1-6 VAR) **
Topics identified by subtitles taught. (*)

SW 501 Principles and Philosophy of Social Work 3(3-0) **
Knowledge, values, history, and philosophy of social work. Prerequisite: 18 credits in socio/behavior science. (*)

SW 510 Social Work Generalist Practice 3(3-0) **
Primary concepts, strategies and skills underlying generalist social work practice. Corequisite: SW 520. (*)

SW 520 Social Welfare Policy Analysis 3(3-0) **
Historical concept, analysis, and impact of social welfare policy. Prerequisite: 18 credits of socio/behavioral sciences. (*)

SW 586 Practicum (3-6 VAR) **
Supervised field experience in social work. Corequisite: SW 510. (*)

SW 591 Special Topics (1-3 VAR) **
Topics identified by subtitles taught. (*)

SW 600 Methods of Research I 3(3-0) **
Social work research; role of practitioners as consumers and initiators of research. (Course required for the Master of Social Work Degree offered at Colorado State University) Corequisite: concurrent registration in SW 520. (*)

SW 601 Methods of Research II 2(2-0) **
Role of social work practitioners as consumers and initiators of research. Data analysis and computer processing in social work research. (Course required for the Master of Social work Degree offered at Colorado State University) Prerequisite: SW 600. (*)

SW 610 Applications of Social Systems Knowledge 3(3-0) **
Basis of social analysis of client systems in rural communities in transition. (Course required for the Master of Social Work Degree offered at Colorado State University) Prerequisite: SW 510. (*)

SW 611 Advanced Social Work Practice 3(3-0) **
Central concepts, techniques and approaches for advanced locality. Relevant generalist social work practice. (Course required for the Master of Social Work. Degree offered at Colorado State University) Prerequisite: SW 510, SW 511. (*)

SW 620 Advanced Social Welfare Policy Analysis 3(3-0) **
Application of social welfare policy analysis models. Examines normative aspects of policy analysis, program evaluation, and assessment skills. (Course required for the Master of Social Work Degree offered at Colorado State University) Prerequisite: SW 520. (*)

** These are Colorado State University courses offered at the University of Southern Colorado towards a master's degree in social work.

SPANISH (SPN)

Course deletions:

SPN 450 Problems in Teaching Foreign Language

SPN 452 Studies in Spanish Linguistics II

SPN 451 Change in credit from: 1 to: **2;** course description changed to: **Analysis of phonology and other language patterns crucial to teaching and learning Spanish as a second or foreign language;** Prerequisite: **2 yrs. college Spanish or permission of instructor.**

USC is an equal employment and affirmative action institution.

ACADEMIC CALENDARS 1991-1995

FALL AND SPRING SEMESTERS

Regular academic semesters consist of 15-week terms, including official holidays and the final examination period. Specific information about each academic semester is available in the bulletins published prior to the beginning of each term.

SUMMER SESSION

Summer session consists of two five-week sessions and one ten-week session. Specific information about summer session is available in the bulletin published prior to the beginning of the first five-week session from the records office.

Fall Semester 1991

April 8-19 ..... Advisement
April 22-26 ..... Early Registration
April 26 ..... Graduation Planning Sheets Due
August 21 ..... Orientation (W)
August 22 ..... Registration (Th)
August 26 ..... Classes Begin (M)
September 2 ..... Labor Day (**)
September 9 ..... End Drop/Add
November 25-29 ..... Thanksgiving
December 6 ..... Classes End
December 9-13 ..... Final Exams
December 13 ..... Finals End

Spring Semester 1992

October 11 ..... Graduation Planning Sheets Due
November 4-15 ..... Advisement
November 18-22 ..... Early Registration
January 22 ..... Orientation (W)
January 23 ..... Registration (Th)
January 27 ..... Classes Begin (M)
February 10 ..... End Drop/Add
March 23-27 ..... Spring Break
May 8 ..... Classes End
May 11-15 ..... Final Exams
May 15 ..... Finals End
May 16 ..... Commencement

Summer 1992

March 13 ..... Graduation Planning Sheets Due
April 27-May 1 ..... Early Registration
June 5 ..... Registration
June 8 ..... First 5 & 10 Week Classes Begin
July 3 ..... Independence Day
July 10 ..... First 5-week Classes End
July 13 ..... Second 5-week Classes Begin
August 14 ..... Second 5 & 10 Week Classes End

* To be announced, based upon School District 60's schedule.
** No holiday...classes will be held
(These calendars are planned in advance and are subject to change.)

Fall semester 1992

April 6-17 ..... Advisement
April 20-24 ..... Early Registration
April 24 ..... Graduation Planning Sheets Due
August 26 ..... Orientation (W)
August 27 ..... Registration (Th)
August 31 ..... Classes Begin (M)
September 7 ..... Labor Day (**)
September 14 ..... End Drop/Add
November 23-27 ..... Thanksgiving
December 11 ..... Classes End
December 14-18 ..... Final Exams
December 18 ..... Finals End

Spring Semester 1993

October 9 ..... Graduation Planning Sheets Due
November 2-13 ..... Advisement
November 16-20 ..... Early Registration
January 20 ..... Orientation(W)
January 21 ..... Registration (Th)
January 25 ..... Classes Begin (M)
February 8 ..... End Drop/Add
March 22-26 ..... Spring Break (*)
May 7 ..... Classes End
May 10-14 ..... Final Exams
May 14 ..... Finals End
May 15 ..... Commencement

Summer Semester 1993

March 12 ..... Graduation Planning Sheets Due
April 26-30 ..... Early Registration
June 4 ..... Registration
June 7 ..... First 5 & 10 Week Classes Begin
July 5 ..... Independence Day
July 9 ..... First 5-week Classes End
July 12 ..... Second 5-week Classes Begin
August 13 ..... Second 5 & 10 Week Classes End

* To be announced, based upon School District 60's schedule
** No holiday... classes will be held
(These calendars are planned in advance and are subject to change.)

Fall Semester 1993

April 5-16 ..... Advisement
April 19-23 ..... Early Registration
April 23 ..... Graduation Planning Sheets Due
August 25 ..... Orientation (W)
August 26 ..... Registration (Th)
August 30 ..... Classes Begin (M)
September 6 ..... Labor Day (**)
September 13 ..... End Drop/Add
November 22-26 ..... Thanksgiving
December 10 ..... Classes End
December 13-17 ..... Final Exams
December 17 ..... Finals End

Spring Semester 1994

October 8 ..... Graduation Planning Sheets Due
November 1-12 ..... Advisement
Nov. 15-19 ..... Early Registration
January 19 ..... Orientation (W)
January 20 ..... Registration (Th)
January 24 ..... Classes Begin (M)
February 7 ..... End Drop/Add
Mar 28 - April 1 ..... Spring Break (*)
May 6 ..... Classes End
May 9-13 ..... Final Exams
May 13 ..... Finals End
May 14 ..... Commencement

Summer Semester 1994

March 11 ..... Graduation Planning Sheets Due
April 25-29 ..... Early Registration
June 3 ..... Registration
June 6 ..... First 5 & 10 Week Classes Begin
July 4 ..... Independence Day
July 8 ..... First 5-week Classes End
July 11 ..... Second 5-Week Classes Begin
August 12 ..... Second 5 & 10 Week Classes End

* To be announced, based upon School District 60's schedule.
** No holiday... classes will be held
(These calendars are planned in advance and are subject to change.)

Fall Semester 1994

April 4-15 ..... Advisement
April 18-22 ..... Early Registration
April 22 ..... Graduation Planning Sheets Due
August 24 ..... Orientation (W)
August 25 ..... Registration (Th)
August 29 ..... Classes Begin (M)
September 5 ..... Labor Day (**)
September 12 ..... End Drop/Add
November 21-25 ..... Thanksgiving
December 9 ..... Classes End
December 12-16 ..... Final Exams
December 16 ..... Finals End

Spring Semester 1995

October 7 ..... Graduation Planning Sheets Due
Oct. 31 - Nov. 11 ..... Advisement
November 14-18 ..... Early Registration
January 18 ..... Orientation (W)
January 19 ..... Registration (Th)
January 23 ..... Classes Begin (M)
February 6 ..... End Drop/Add
March 27-31 ..... Spring Break (*)
May 5 ..... Classes End
May 8-12 ..... Final Exams
May 12 ..... Finals End
May 13 ..... Commencement

Summer Semester 1995

March 10 ..... Graduation Planning Sheets Due
April 24-28 ..... Early Registration
June 2 ..... Registration
June 5 ..... First 5 & 10 Week Classes Begin
July 4 ..... Independence Day
July 7 ..... First 5-week Classes End
July 10 ..... Second 5-week Classes Begin
August 11 ..... Second 5 & 10 Week Classes End

* To be announced, based upon School District 60's schedule.
** No holiday...classes will be held
(These calendars are planned in advance and are subject to change.)