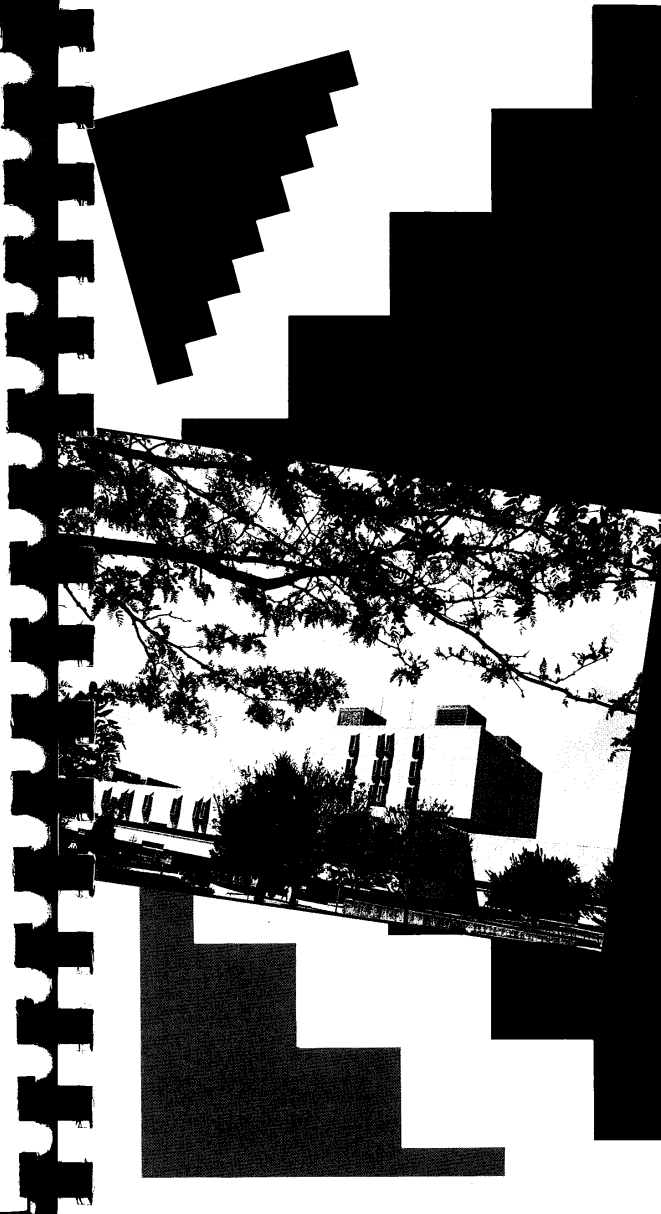


UNIVERSITY OF
**SOUTHERN
COLORADO**



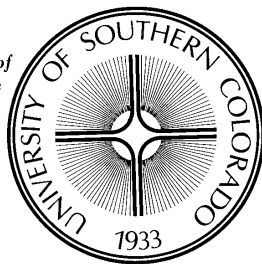
CATALOG
1993/94

UNIVERSITY OF
SOUTHERN COLORADO



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: (719) 549-2461.



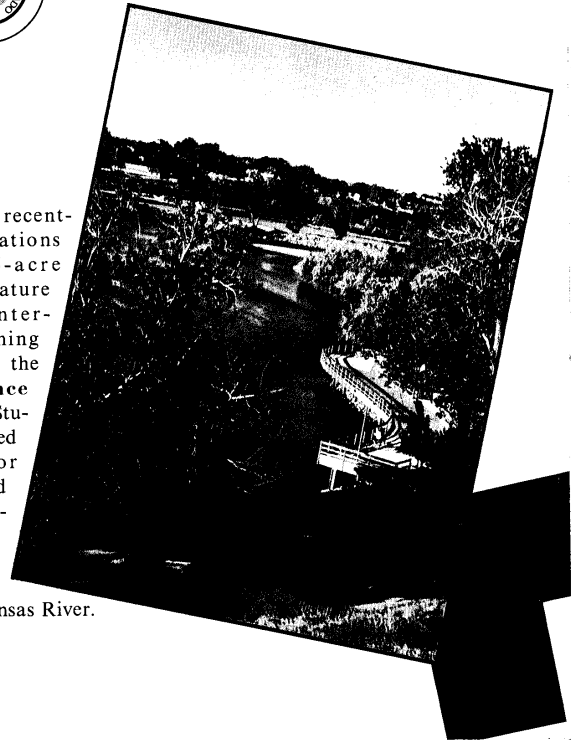
University of Southern Colorado (USPS 857-100) is published four times a year, in March, July, August and November. Second-class postage paid at Pueblo, Colorado 81003. POSTMASTER: Send address changes to the UNIVERSITY OF SOUTHERN COLORADO, Office of Admissions and Records, 2200 Bonforte Boulevard,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

The University of Southern Colorado is an active partner in the educational, economic and cultural life of the Southern Colorado region. USC serves as a valuable community resource by sponsoring cultural events, providing student internships, and conducting research on community and business problems. Students enhance their educational experience and increase their career opportunities through involvement with community service programs and university partnerships.

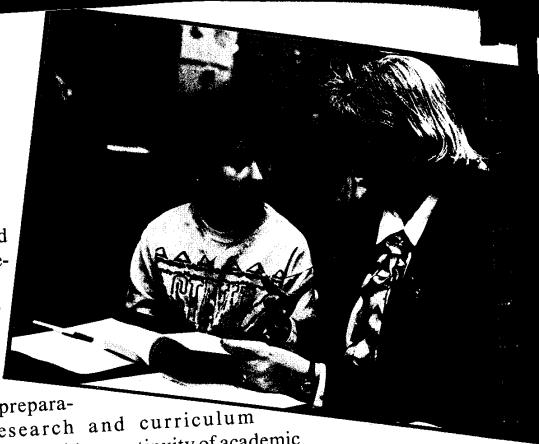
The Educational Alliance of Pueblo is an evolving partnership between the university and Pueblo School District No. 60, which encourages the two institutions to share ideas, personnel and other resources.



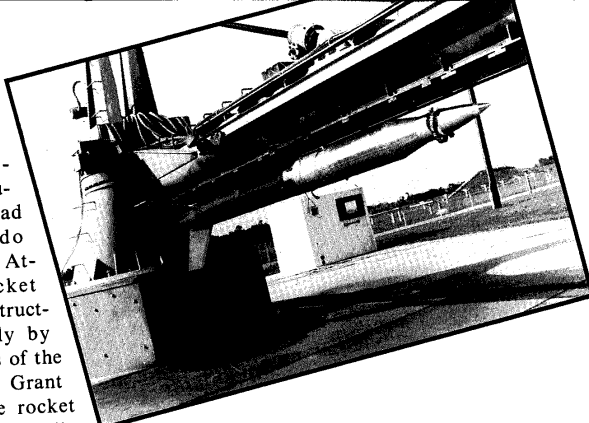
The university recently assumed operations of Pueblo's 75-acre Greenway and Nature Center as an interdisciplinary learning center directed by the College of Science and Mathematics. Students enjoy increased opportunities for field research and localized environmental studies at the popular recreational and nature-study site along the Arkansas River.



USC has transformed teacher education by developing a comprehensive **Center for Teaching and Learning**. The center's university and district staff oversee teacher preparation, engage in research and curriculum development, and seek to provide a continuity of academic programs from pre-kindergarten through the baccalaureate degree.



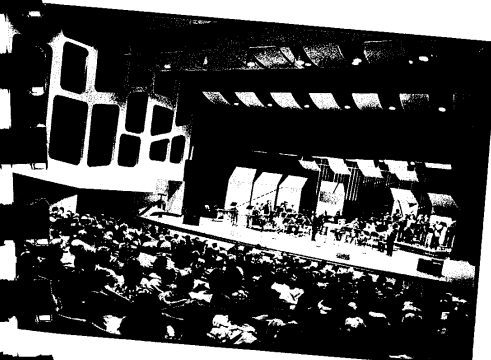
USC students in the **College of Science and Engineering Technology** recently designed and manufactured the payload for the Colorado Student Ozone Rocket (**CSOAR**). Constructed cooperatively by student members of the Colorado Space Grant Consortium, the rocket was launched successfully from the NASA facility at Wallops Island, Virginia, in September 1992. The Consortium's 1993 project concerns high-altitude balloon research.



Students and faculty in the **USC School of Business** regularly participate in cooperative projects with local businesses and with the Pueblo Economic Development Corporation (**PEDCo**). The university's Center for Business Development currently is conducting an economic study of the Pueblo Airport.



USC's **Hoag Recital Hall** is a popular location for many community events, including the Town and Gown performance series, co-sponsored by the Sangre de Cristo Arts Center. USC band and choir concerts, symphonies, recitals and other events conducted by students and faculty in the **College of Humanities and Social Sciences** generally are open to the public.



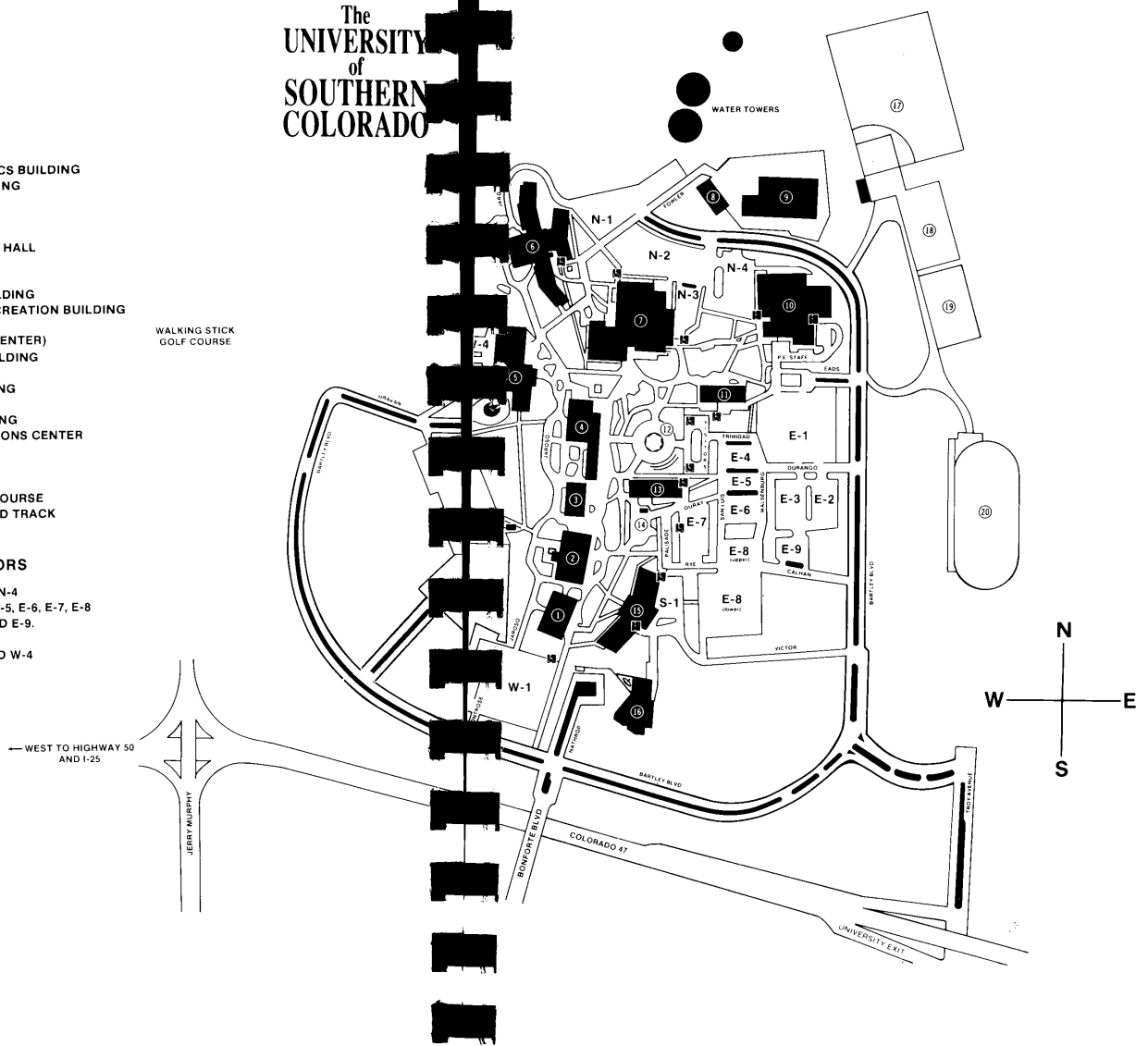
The UNIVERSITY of SOUTHERN COLORADO

CAMPUS LEGEND

1. PHYSICS/MATHEMATICS BUILDING
2. LIFE SCIENCES BUILDING
3. CHEMISTRY BUILDING
4. LIBRARY BUILDING
5. ART/MUSIC BUILDING
6. BELMONT RESIDENCE HALL
7. OCCHIATO CENTER
8. HEATING PLANT
9. PHYSICAL PLANT BUILDING
10. HEALTH, P.E. AND RECREATION BUILDING (MASSARI ARENA AND SAM JONES SPORTS CENTER)
11. ADMINISTRATION BUILDING
12. FOUNTAIN PLAZA
13. PSYCHOLOGY BUILDING
14. MCKINNEY PAVILION
15. TECHNOLOGY BUILDING
16. BUELL COMMUNICATIONS CENTER (KTSC-TV)
17. FIELD - BASEBALL
18. TENNIS COURTS
19. CHALLENGE ROPES COURSE
20. FIELD - FOOTBALL AND TRACK

PARKING LOT SECTORS

- NORTH: N-1, N-2, N-3, and N-4
 EAST: E-1, E-2, E-3, E-4, E-5, E-6, E-7, E-8 (upper & lower) AND E-9.
 SOUTH: S-1
 WEST: W-1, W-2, W-3, AND W-4



HELPFUL CAMPUS PHONE NUMBERS

IF YOU ARE INTERESTED IN:	CALL: (719)-549 EXTENSION:
joining or starting a campus club	2866
using the athletic facilities (pool, racquetball, weightroom, etc)	2711
how to post messages and signs	2511
day care availability	2149
upcoming campus social activities	2459 or 2151
residence hall activities	2601
gaining access to a computer	2566
finding a part-time job	2753

IF YOU ARE HAVING PROBLEMS WITH:	CALL: (719)-549 EXTENSION:
someone harassing you	2373
racial or sexual discrimination	2936
interpersonal relations	2586
money to stay in school	2753 or 2380
your grades	2581

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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.

Discrimination based on disability in admission to, access to and the operations of programs, services or activities of the University of Southern Colorado is prohibited by the Americans with Disabilities Act. Questions, complaints and requests for additional information may be directed to the ADA coordinator at (719) 549-2511.

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 accepts enthusiastically its role as a regional university with a polytechnic emphasis. We believe that our special commitment to applied research and career-oriented education, embracing but not limited to the technologies of engineering, science, and business, and grounded in an unalterable commitment to the traditional liberal and fine arts, creates a unique opportunity to educate the whole person. We resolutely embrace the conviction that while our liberal arts programs must be predicated on preparing students to engage in productive and meaningful living as well as to earn a living, our professional programs must maintain a strong liberal arts component to guard against the obsolescence of purely vocational and topical learning in a rapidly changing world.

High-quality teaching is the number one priority at the University of Southern Colorado. 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. The University of Southern Colorado also places special emphasis on student development and success. To address this special emphasis, the university has made an unequivocal commitment to significantly improve the retention and graduation rates of all students.

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; civil, electronics, and mechanical engineering technology, the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET); industrial engineering, the Engineering Accreditation Commission of ABET; education, the Colorado State Board of Education; music, the National Association of the Schools 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 non-discrimination 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. Discrimination based on disability in admission to, access to and the operations of programs, services or activities of the University of Southern Colorado is prohibited by the Americans With Disabilities Act. Questions, complaints and requests for additional information may be directed to the ADA coordinator at 549-2511. Inquiries concerning Title VI, IX, Section 504 and ADA may be referred to: Affirmative Action Director, University of Southern Colorado, 2200 Bonforte Boulevard, Pueblo, Colorado 81001-4901, phone 719-549-2100 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, a 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, white-water rafting, golf, tennis 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 1993-94 issue becomes effective fall semester, 1993. Information contained within the catalog is current as of April 1993, 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 1994-95 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
2.00	22		890-910
2.20	21		820-850
2.50	18		700-720
2.70	17		650-660
3.40	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.

Minimum high school academic preparation standards (MAPS). Students who meet the course requirements for graduation from a Colorado high school also meet the minimum academic preparation standards for admission to the University of Southern Colorado. However, to be prepared to take full advantage of the university's academic programs, and to strengthen the probability of graduation and career success, the university *strongly recommends* that students complete the following course work while in high school:

- Four years of English;
- Three years of mathematics including two years of algebra and one year of geometry;
- Two years of natural science including at least one year of physical science;
- Two years of social studies including American government; and
- Two years of a single foreign language.

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 admissions office.

TRANSFER STUDENTS

Students who have attended other colleges or universities and are seeking admission to USC for the first time must file an application for admission with the Office of Admissions, a \$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 2.00 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 the current institution sent with the application. A final transcript should be sent when the current term is completed.

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.

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. For credit toward degree requirements, USC accepts a maximum of 64 semester hours from community or junior colleges and/or a maximum of 96 semester hours from four-year institutions.

Courses with grades of D or F are not accepted for transfer with one exception. Grades of D in General Education Knowledge Component courses are accepted in transferring Colorado Community College and Occupational Educational System Core Courses if the student has fully completed either an A.A. or A.S. degree with at least a 2.00 cumulative GPA as verified by official transcript documenting Core Transfer completion.

The University of Southern Colorado also will accept the A.A. or A.S. degree from another state as fulfilling the university's lower-division general education requirements.

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 (2.00) average or better.

The university accepts up to eight semester hours of cooperative education courses in transfer. Cooperative education course work, 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 is evaluated 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 courses 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 dean of Admissions and Enrollment Services within 15 class days of receiving the evaluation. The student will receive a written response from the dean of Admissions and Enrollment Services 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 the action explained above 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 any 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 dean of Admissions and Enrollment Services.

No international student applications for admission will 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. Courses petitioned for general education credit must also be approved by the director of general education.

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 one of the following categories applies.

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 2.00 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 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, Room 319.

ADMISSION PROCEDURES

Application deadlines. The 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 enroll. Deadlines for 1993-94 are:

Fall Semester 1993	July 30, 1993
Spring Semester 1994	December 17, 1993
Summer Session 1994	April 29, 1994
Fall Semester 1994	July 29, 1994

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 address. A 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 1993-94 were as follows:

No. of hours	Resident		Total
	Tuition	Fees	
1	\$ 79	\$ 15.60	\$ 94.60
2	158	31.20	189.20
3	237	46.80	283.80
4	316	62.40	378.40
5	395	78.00	473.00
6	474	93.60	567.60
7	553	109.20	662.20
8	632	124.80	756.80
9	711	140.40	851.40
10-18	783	156.00	939.00

Tuition surcharge for each hour over 18: \$51

Nonresident			
No. of hours	Tuition	Fees	Total
1	\$ 323	\$ 15.60	\$ 338.60
2	646	31.20	677.20
3	969	46.80	1,015.80
4	1,292	62.40	1,354.40
5	1,615	78.00	1,693.00
6	1,938	93.60	2,031.60
7	2,261	109.20	2,370.20
8	2,584	124.80	2,708.80
9	2,907	140.40	3,047.40
10-18	3,228	156.00	3,384.00

Tuition surcharge for each hour over 18: \$203

OTHER SPECIAL FEES

The following are examples of special fees approved for the 1992-93 academic year. For a complete list of special fees, contact the university controller at (719) 549-2232.

Original student/faculty/staff identification card	\$5
Identification card replacement	5
Faculty/staff identification card validation	11
Fee to activate placement file-per packet	3
Parking sticker replacement	2
Returned check charge	15
Deferred payment fee (per payment)	10
Physical education fee	3
Physical education designated classes	
Water Safety	20
Scuba Diving	55
Training Room	25
Skiing	95
Life Saving	20
Applied music fee (per credit hour)	30
Musical instrument rental fee	15
Music locker fee	5
Records/Registration Fees	
Application fee	15
Credit by examination (per course)	50
Late add charge (per course)	10
Matriculation fee (new students)	30
Reinstatement fee	50
Transcript fee	2

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, 1992/93 rates)

Single (continuing residence hall student)	varies
Single (incoming student)	\$1,220
Double (continuing residence hall student)	varies
Double (incoming student)	\$816

Board (per semester)

19-meal plan	\$1,080
14-meal plan	\$1,048
10-meal plan	\$1,000

Room and Board (10-week summer semester)

Single room	\$762
Double room	\$510
19-meal plan	\$676
15-meal plan	\$658

Room and Board (5-week summer semester)

Single room	\$381
Double room	\$255
19-meal plan	\$338
15-meal plan	\$328

OPTIONAL COPIRG FEE

In the spring of 1989, students voted to establish a chapter of the Colorado Public Interest Research Group (CoPIRG), to be funded by a \$4 waivable fee. CoPIRG is a statewide, student-directed, non-partisan, non-profit organization that conducts research, advocacy, and public education on such issues as voter registration, safe drinking water, air quality, toxic waste cleanup and prevention, consumer protection and good government. CoPIRG chapters also operate at Colorado State University, the University of Northern Colorado, and Metro State College.

Students interested in becoming involved with CoPIRG projects may call 549-2198 or (309) 355-1861. The CoPIRG fee will be added to other charges automatically unless you **initial the appropriate space on your registration form to waive the fee**. If you do not wish to be charged for CoPIRG and forget to initial the appropriate space, a refund can be requested from the CoPIRG office in the Occhiato Center.

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 to 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 deadline date, 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 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 the bulletin.

DELINQUENT STUDENT ACCOUNTS

Students are subject to any or all of the following actions if they have a delinquent debt to the university:

- Administrative withdrawal
- Transcripts held
- Degree not conferred
- No future course registrations allowed
- Reasonable collection/legal costs added to the amount due

Any student who pays with a check that is returned unpaid by their bank will be subject to all of the penalties for late payment and also will be charged an additional fifteen dollar (\$15) fee.

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 grant, loan, work-study and/or scholarship funds. Students may obtain applications and other necessary forms from the Office of Financial Aid, Room 309 of the Administration building, phone (719) 549-2753.

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.

FINANCIAL AID POLICIES

Students must complete all necessary forms and submit the required documents to be considered for financial aid.

Funds are awarded with consideration for high need first, then moderate to low need on a first-come, first-serve basis.

When to apply (priority filing date). To be considered for financial assistance, students must complete the Free Application for Federal Student Aid (FAFSA). Processing of the application requires approximately 30 days. Therefore, to meet the file-completion deadline for any fall semester, students must mail the FAFSA Form by March 1 of each year.

The USC Office of Financial Aid requires a separate Financial Aid Information Form (FAIF). The FAIF, the FAFSA Need Analysis, and other required documentation must be in the financial aid office on or before the following file completion dates:

Summer	April 15
Fall - Spring	April 15
Spring	December 1

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

- 1) **must reapply each year.**

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

- 1) on financial aid suspension or academic suspension;
- 2) in default on student loans or owe refund or 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

Federal Pell Grant. A Federal Pell Grant is an award to help undergraduates pay for their education after high school. The Federal Pell Grant program describes an undergraduate as one who has not earned a bachelor's degree.

For many students, Federal 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. The period of eligibility is extended to the period required for completion of the first baccalaureate course of study.

Colorado Student Grant (CSG). The CSG is awarded to undergraduate residents on the basis of financial need. The amount of the grant cannot be greater than \$2,000 per academic year and generally will not exceed one-half the documented financial need. Funds are provided by the Colorado general assembly.

Federal Supplemental Education Opportunity Grant (FSEOG). The FSEOG is a form of non-repayable financial aid and is designed to assist undergraduate students with exceptional need, targeted to Federal Pell recipients and other exceptional need students such as non residents. Awards may not exceed \$4,000 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 range from \$200 to \$2,500 per academic year and generally will not exceed one-half of the documented financial need. The SSIGs consist of one-half state and one-half federal funds.

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 (Federal Work-study) and the state of Colorado general assembly. The university annually employs approximately 700 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 educational costs of the next academic year.

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; and
- 4) save a major portion of their earnings to assist with next year's educational expenses.

No-need work-study. The no-need work-study program is funded by the state of Colorado general assembly. 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 \$1,800. 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 the Free Application for Federal Student Aid (FAFSA). Students should not assume that they will be found ineligible for need-based financial aid. Those who are declared ineligible, however, may qualify for no-need work study.

Federal Perkins Student Loan (formerly titled National Direct Student Loan-NDSL). A Federal Perkins Loan is a low-interest (5 percent) loan to help exceptional need students pay for their post-secondary education. USC must disclose the loan disbursement and default status to a credit bureau organization.

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

- \$3,000 a year as an undergraduate if they are enrolled in a degree program, leading to a bachelor's degree;
- \$5,000 a year as graduate students enrolled in a master's degree program;
- \$15,000 aggregate if they are undergraduates working toward a bachelor's degree; or
- \$30,000 aggregate for graduate or professional study (total includes any amount borrowed under Federal 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 \$30 or \$40 per month for first time borrowers after October 1, 1992. The university may agree to a lesser amount because of extraordinary circumstance such as prolonged unemployment.

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

FEDERAL FAMILY EDUCATION LOANS

Federal Stafford Loan (formerly GSL). A Federal 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. Effective October 1, 1992, the variable rate (adjustable each July 1st) is currently 6.94 percent for new borrowers.

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 Federal 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 student can borrow up to \$2,625 the first year and \$3,500 the second year. A junior or senior can borrow up to \$5,500 each year. A graduate student can borrow up to \$8,500 a year beginning after October 1, 1993 (in some states these amounts may be less). At no time can the amount of a Federal Stafford Loan exceed the student's financial need; therefore, the amount borrowed may be less than the amounts indicated above. These changes or total amounts per year are effective July 1, 1993.

The total aggregate amount of a Federal Stafford Loan that an undergraduate may borrow is \$23,000; the total a graduate or professional student may borrow is \$65,500 (including any Federal Stafford Loan borrowed as an undergraduate student).

A Federal 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 or academic suspension are not eligible for a Federal Stafford Loan and the lender will be notified.

NOTE: Applicants for Federal Stafford Loans must complete the FAFSA (Needs Analysis).

Federal Unsubsidized Stafford. The new law authorizes a program (effective Spring 1993) of unsubsidized Federal Stafford Loans for students who do not qualify, in whole or in part, for subsidized Federal Stafford Loans (FSL). The government does not pay interest on your behalf for the unsubsidized loan. You must pay all of the interest that accrues on this loan during the time you are enrolled in school, during a grace period, and during periods of re-payment and authorized deferment. The current interest rate is 6.94 percent but is variable (which can change every July 1st).



Federal PLUS Loans. Federal PLUS loans are meant to provide additional funds for secondary educational expenses. The interest rate for Federal PLUS loans is currently 7.36 percent, adjustable every July 1st. Federal PLUS applications may be obtained through participating banks or credit unions.

Parents of dependent undergraduate students may borrow up to the cost of education minus financial aid per year 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 Federal PLUS loan on the day the loan is disbursed. Applications are processed semester by semester.

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

Federal Supplement Loan for Students (FSLs). This loan is available for independent students to help pay for the cost of higher education. The interest rate is currently 7.36 percent. Independent students can borrow \$4,000 per year for years one and two; up to \$5,000 per year for years three through five, up to an aggregate amount of \$23,000. Federal SLS borrowers begin repayment on the day of the last disbursement of loan proceeds. Principal (loan amounts) repayment may be deferred. Interest payments, if deferred, will be capitalized (added to the principal balance).

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

For additional information on Federal PLUS or FSLs 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 currently be 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 program is designed to provide recognition for outstanding academic performance and talent (art, creative writing/journalism, music, speech/theatre). Scholarships of \$1,000 are awarded to selected undergraduate U.S. citizens or resident aliens who are incoming freshmen, community or junior college transfer students or continuing students at USC. Twenty in-state tuition and fee scholarships are awarded to incoming freshmen each 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. The funds are provided by the Colorado general assembly.

USC Diversity Grant. The Diversity Grant program is designed to bring to campus and retain students from under-represented groups who contribute to a diverse educational environment. Honors Diversity Grants of \$1,000 are available to minority and handicapped students in the Honors Program. Additional USC Diversity Grants of \$1,000 will be awarded on the basis of GPA and overall qualifications. Applications are available in the financial aid office. These grants are designed to supplement other aid programs available to students. The number of awards is dependent upon the level of state funding for the program.

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. Funds are provided by the Colorado general assembly.

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.

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

- 1) The scholarship recipient is notified of the award and *must* send the donor a "thank you" for the scholarship and provide the USC Foundation office with a copy of the letter;
- 2) After the drop/add period ends, bills for tuition, fees and other charges are prepared by the university and mailed to all students;

- 3) When scholarship recipients receive their bills, they should report to the cashier to endorse checks made payable to each recipient AND the university 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 in 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 Office of Veterans Affairs.

Veteran's benefits. Programs offered by the University of Southern Colorado, with certain exceptions, are approved by the Community College and Occupational Education System for the education and training of those veterans and dependents of veterans eligible under applicable laws. A veteran or dependent planning a course of training in a special program not described in the university catalog or identified as approved for veteran's benefits should check with the certifying official before enrolling in such a program, if benefit assistance is desired.

Veterans and dependents who plan to apply for Veterans Administration benefits while attending the University of Southern Colorado should contact the Office of Veterans Affairs as soon as the decision to enroll is made. Two months is the normal processing time required for the Veterans Administration to establish an applicant's file. Further information may be obtained from the Office of Veterans Affairs in the Administration building, Room 319, phone (719) 549-2360/2368.

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 the 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 monies 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 10 weeks of 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	\$1,000
Colorado Student Grant	\$ 250
Federal Stafford Loan (FSL)	\$1,250
Scholarship	\$ 500
Student Contribution	500
Total	\$3,500

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

Total tuition/fees	\$ 916.60
due for 5 weeks	\$ 550.00 (60% due)
Total refund adjustment	\$ 366.60

The \$366.60 is refunded to the federal and state financial aid programs, not to Jennifer. In this example, Jennifer earned the remainder 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 tenth 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 tenth week.

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

Effective October 1, 1992, USC will credit refunds in the following order:

- a) to outstanding balances on loans from the Federal Family Education Loan (FFEL) program;
- b) to outstanding balances on Federal Direct Loans;
- c) to outstanding balances on Federal Perkins Loans;
- d) to Federal Pell Grant awards;
- e) to Federal SEOG awards;
- f) to other Title IV student assistance;
- g) to state programs; and
- h) to the student.

Students who are attending USC for the first time are eligible for a "pro rata refund" if they withdraw from the university in the midst of a semester. The refund is based on a proportional formula which considers the student's date of official withdrawal. For detailed information, please contact the financial aid office.

Note: Policies subject to change without prior notice.

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 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 Occhiato 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 Occhiato 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 Occhiato 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 Occhiato 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.

STUDENT DEVELOPMENT SERVICES

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 Placement. 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.

Developmental Advising Center. The Developmental Advising Center provides services to assist students in the following ways: academic advisement for undeclared and unclassified students with course and major selection; assessment activities to identify and clarify values, interests, abilities and goals; activities that help students relate self-information to occupational and educational information; exploration of educational and vocational options; administration of reality testing; and assistance with implementation of choices and decision-making skills.

The center is staffed by a developmental assistance specialist and peer mentors who help students, via the services offered, identify life goals, and acquire skills and attitudes which promote intellectual growth and development.

Experiential Learning Center. The Experiential Learning Center offers opportunities to learn how to use experience as a primary vehicle for learning. Experiential education subscribes to the proposition that the learning process is integrally bound with the activities of everyday life - that "doing" is the fundamental component of learning. The center can serve existing and developing USC programs through offering a wide variety of outdoor and wilderness ventures designed to facilitate personal growth for participants. Programs offered by the center are the USC Outdoor Program, the W.I.L.D. Program (Wilderness Individual Leadership Development), and the USC Challenge Ropes Course.

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.

Leadership Education and Development (LEAD Program). The LEAD Program is a planned, structured approach to building and enhancing leadership and inter-personal skills of students. The purpose of the LEAD Program is to enroll and retain students with proven leadership ability in Belmont Residence Hall. The program also provides these students with opportunities to volunteer in the community, develop their leadership abilities and contribute to academic and student life at the university.

Learning Assistance Center. The focus of the center is to provide activities directed toward the improvement of learning assistance strategies for students. These activities include the following: verifying needs of students experiencing individualized problems with the problems of learning; developing individualized prescriptive plans for students and providing necessary aid and/or tutorial assistance; making advisory recommendations for the educational planning of the student, and providing workshops/seminars to assist students in upgrading their learning "skills" and solving their problems.

The center is staffed by a learning assistance specialist and academic tutors who provide the services offered based on needs assessments conducted jointly with academic units and the students.

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.

USC - District #60 Student Mentoring Program. USC-enrolled students who have been accepted as student mentors may, if they so choose, undertake activities, under faculty supervision, for the following objectives: to increase the high school graduation rates of higher risk students enrolled in District #60 schools; to increase the college admission rates of higher District #60 students, and to engage in a meaningful community service experience to promote educational and personal growth by USC student mentors.

Women's Programs Center. Many adults and re-entry students use the services of the Women's Programs Center, which provides 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-age 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 meet key academic and administrative personnel, learn about university policy, receive academic advising and register for classes. Orientation dates and times are listed in the *University Calendar* in this catalog and in the semester bulletin. All new and transfer students are urged to attend one orientation session.

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 160 in the Occhiato 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 Occhiato Center, Room 002.

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 a 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 Occhiato 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 purposes are 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. 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 Collegiate Athletic Association Division II, and the Colorado Athletic Conference. USC sponsors the following intercollegiate sports:

Men: basketball, baseball, soccer, wrestling, golf and tennis;

Women: volleyball, basketball, softball, 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 administered by the Veterans Administration while attending USC must report to the Office of Veterans Affairs as soon as the decision is made to attend the university.

JOSEPH OCCHIATO CENTER

During the academic year, the Joseph Occhiato 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 Occhiato 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 I.D. 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 \$24 per year, \$12 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 Occhiato 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

The University of Southern Colorado expects the members of its community to observe the laws of the city of Pueblo, the state of Colorado, and the federal government; to respect other members of the community, their rights, and their privileges. Students, non-students, faculty, and staff members of USC, upon entrance to the university, neither gain nor lose any of their rights or responsibilities of citizenship. As a community, USC has the obligation to establish those regulations that best serve and protect its integrity as an institution of higher learning. Activities which will render students or non-students subject to disciplinary action are as follows:

- 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 educational mission or objectives;

- 2) attempted or actual theft and/or damage to property of the university or of a member or guest of the university community;
- 3) unauthorized entry into or use of university or university-controlled facilities or property;
- 4) failure to comply with directions of university officials acting in the performance of their duties;
- 5) unauthorized possession, duplication or use of keys to any university premises or unauthorized entry to or use of university premises;
- 6) violation of the university's and/or residence hall's regulations and rules related to the use, possession or consumption of alcoholic beverages;
- 7) use, sale, distribution or possession of drugs, controlled substances, barbiturates, etc., not authorized by a physician or expressly permitted by law;
- 8) violation of published university, campus or residence hall policies, rules or regulations;
- 9) hazing, defined as an act which endangers the mental or physical health or safety of a student, or which destroys or removes public or private property, for the purpose of initiation, admission into, affiliation with, or as a condition for continued membership in, a group or organization;
- 10) disorderly conduct or loud, indecent or obscene conduct on university or university-controlled property or at university-sponsored functions;
- 11) physical or verbal abuse, threats, harassment, coercion or intimidation of anyone on university-controlled premises or at university-sponsored functions or any conduct that endangers or threatens to endanger the health, safety, or well-being of any person;
- 12) dishonesty, such as cheating, plagiarism, misrepresenting oneself or facts or knowingly furnishing false information to any person or agency within the university community;
- 13) 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 for personal gain or for the benefit of someone else;
- 14) forgery, alterations or misuse of any university documents, records, or instruments of identification with intent to defraud or mislead;
- 15) tampering with the election of any university-recognized student organization;
- 16) violation of university traffic or parking regulations;

- 17) intentional obstruction or disruptions or inciting others to obstruct or disrupt teaching, meetings, research, administration, disciplinary proceedings or other authorized university activities;
- 18) obstruction of the free flow of pedestrian or vehicular traffic on university premises or at university-sponsored or supervised functions;
- 19) possessing or using illegal or unauthorized firearms, explosives, dangerous chemicals, or other weapons on university-owned or controlled property;
- 20) public intoxication, use, possession, distribution or consumption of alcoholic beverages on university property, except in those areas authorized by the university and then only those types of beverages authorized by the university;
- 21) failing to show proper identification to university police officers or other university staff (acting in official capacity) when requested to do so; furnishing false information to any university official, faculty member or office;
- 22) abuse of the judicial system, including but not limited to:
 - a) failure to obey a summons of a judicial body or university official;
 - b) falsification, distortion, or misrepresentation of information before a judicial body;
 - c) disruption or interference with the orderly conduct of a judicial proceeding;
 - d) institution of a judicial proceeding knowingly without cause;
 - e) attempting to discourage an individual's proper participation in, or use of, the judicial system;
 - f) attempting to influence the impartiality of a member of a judicial body prior to and/or during the course of, the judicial proceeding;
 - g) harassment (verbal or physical) and/or intimidation of a member of a judicial body prior to, during, and/or after a judicial proceeding;
 - h) failure to comply with the sanction(s) imposed under the Standards of Conduct;
 - i) influencing or attempting to influence another person to commit an abuse of the judicial system;
- 23) failure to meet financial obligations to the university;
- 24) tampering with fire equipment in any manner; and
- 25) 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. Details of the hearing process, including the Associate Provost and disciplinary ombudsman's authority to intervene, are contained in the Standards of Conduct Handbook. The Office of Student Life and Development provides upon request the institution's **Standards of Conduct Handbook**, which contains a detailed explanation and description of institutional disciplinary philosophy, rules and regulations.

ACADEMIC 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 Science 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 course(s) [or equivalent(s)], and by the appropriate dean.

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 3.50 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.

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

Exceptions to these limits must be approved by the student's faculty adviser and department chair. Both signatures are required. Appeals may be made to the dean of the college of the student's major.

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 accepted for admission to USC or is 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; and
- 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; and

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.

Incomplete. 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.**

Grade-point average computation. The grade-point average (GPA) is calculated by totaling the number of grade points earned, based on the grading 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-points earned are 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 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; however, they are discouraged from repeating those for which a C grade or better has been earned. The first two times 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. If a student elects to repeat a course more than two times, all grades earned thereafter will be computed in the grade-point average. If a student transfers a course to USC from another institution and subsequently repeats the course at USC, only the credit and grade points earned at USC will be allowed. Students should be aware that 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 such 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 load allowable.

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 withdraws from a course before 80 percent of the course duration has passed, a grade of W will be assigned. After 80 percent of the course duration has passed, a student may not withdraw.

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 affect the student's grade-point average. Grades of W will not be accepted during finals week.

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 12th 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. To withdraw officially from the university, students must file a withdrawal form with the records office. 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 of the regular university curriculum. In some cases such

courses are required for majors. All such courses require registration, carry credit, require payment of tuition, are listed in the catalog and include a planned program of activities outlined in the course syllabus. The grading system is the same as the system used for regular courses. Supervised work-experience courses are approved for inclusion in veterans class schedules under Veterans Administration Regulation 14265.

Credit for life experience. Some students may seek 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; and
- 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 probation are encouraged to contact Counseling Services or their adviser 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 and have pre-registered for the Fall Semester will be disenrolled for that term. If a favorable appeal is reached, the student must re-register. Students 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 provost 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 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.

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. However, the grades of students shall not be affected negatively solely due to absence from class because of participation in university-sanctioned events. Such university-sanctioned activities may include, but are not limited to: inter-collegiate competition, participation on

the forensics team, and field trips. Class absence due to university-sanctioned participation does not in any way excuse students from completing class preparations, assignments, examinations, or projects.

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.

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 minimum of 128 semester hours with a cumulative grade-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) satisfactorily complete all general education requirements as explained in the following section below. Explained under the section on General Education Requirements;

- 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

For those students who entered the university prior to fall semester 1992, the general education requirements are listed in Appendix I, page 301.

For those students who entered the university fall semester 1992 and later, the general education requirement for graduation includes a total of 42 semester hours in three categories:

Skills Component	14 credits
Knowledge Component	25 credits
Upper Division Component	3 credits
TOTAL	42 credits

SKILLS COMPONENT: Students should complete the requirements included within this component as early as possible, preferably during the freshman year.

English Composition I	3 credits
English Composition II	3 credits
Speech	3 credits
Computer Usage	2 credits
Mathematics	3 credits
	14 credits

A student must complete the **Skills Component** with a minimum GPA of 2.00.

For illustrative purposes, the sub-areas of the **Skills Component** are listed below.

Literacy and Communication Skills

ENG	101	Composition I
ENG	102	Composition II
SPCOM	103	Speaking and Listening

Computing Skills

ART	104	Computer Graphic Literacy
CST	101	Computers and You
CST	103	Word Processing
MUS	105	Introduction to Music and Computers
BUSAD	160	Introduction to Computers and Information Processing

Quantitative Skills

MATH 109 Mathematical Explorations
(or a score of 23 or above on the mathematics component of the ACT)
(or a higher course with a grade C or better)

KNOWLEDGE COMPONENT: The requirements of this component are distributed among the four domains listed below. The domains include a total of eight sub-areas (K1 through K8). *Students are required to complete at least one course in each of the sub-areas.*

A. Aesthetic and Ethical Values

K ¹	Visual and Performing Arts	3 credits
K ²	Literature	3 credits

B. Understanding People

K ³	International & Multicultural Experience	3 credits
K ⁴	Historical Consciousness	3 credits
K ⁵	Health Consciousness and/or Awareness of Human Development, Experience & Behavior	3 credits

C. Economic, Political and Social Systems

K ⁶	Economic, Political and Social Systems	3 credits
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D. Science and Technology

K ⁷	Life Science*	3 or 4 credits
K ⁸	Physical Science*	3 or 4 credits
		25 credits

* A laboratory experience is required in either area K7 or K8.

UPPER DIVISION GENERAL EDUCATION REQUIREMENT: All General Education upper division requirement courses carry three credits, will be intercollegiate in nature, and will fit within a generic mold of "Education and Leadership in a Technological Society." To enroll in a General Education upper division course, a student must have junior or senior standing, and must have completed all of the skills components and at least 19 of the 25 credits required in the knowledge component.

Exemptions from **skills** and **knowledge** component requirements may have been approved for certain major or minor areas. Please refer to Appendix II, page for a complete listing of the General Education Exemptions. For current information, a student should consult with their academic adviser or the appropriate department. **No exemptions** will be allowed from the **General Education upper division requirement** for either USC or transfer students.

POLICIES PERTAINING TO GENERAL EDUCATION

Transfer Student: It is the intention of the University of Southern Colorado that transfer students be treated and processed in a manner

analogous to that given to USC continuing students. Therefore, it is intended that students who began their education prior to fall semester 1992 at another accredited institution of higher learning may opt to satisfy either the "old" or the "new" general education requirements if they have been registered continuously on a full-time basis (excluding summer school). Further it is expected that such students will enter the University with junior or senior standing. The option for a choice of general education curricula will cease for all students following the 1994 spring semester.

Those transfer students who began or "re-started" their education during or after the 1992 fall semester will comply with the policy outlined in the University Catalog in effect at the time of entry to the university.

The University of Southern Colorado accepts the general education requirements included in the Associate of Arts (A.A.) or Associate of Science (A.S.) degree from a regionally accredited two-year or four-year college as a substitute for USC's lower-division general education requirements.

In addition, USC 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 general education requirements for each student who is certified as having successfully completed that core curriculum. However, only courses with grades of C or higher will be accepted for credit in transfer.

If a student transfers from a four-year college or university in Colorado and has completed that institution's general education requirements with a minimum 2.00 grade-point average, the student will be considered to have fulfilled USC's lower-division general education requirements. However, only courses with grades of C or higher will be accepted for credit or transfer.

Readmit Students: Students readmitted to USC during the 1992-93 or 1993-94 academic years with junior or senior standing may choose to follow the general education requirements stated in the 1990-92 USC catalog. During this period, any other readmitted student may, under very extraordinary circumstances, submit a written request approved by his/her departmental adviser to the registrar, who has been designated by the provost to act on such requests.

GENERAL EDUCATION COURSE SUBSTITUTION

Substitutions, or waivers for courses fulfilling lower-division general education requirements must be approved by the director of General Education.

GENERAL EDUCATION TEST-OUT POLICY

All courses satisfying lower-division General Education requirements have a test-out procedure. Students wishing to test out of a course should contact the chair of the department offering the course. A student who successfully completes the test-out examination with a grade at the level of

B or better satisfies that particular General Education requirement. The student does not receive a grade or credit for the course; nor does the test-out appear on the student's transcript. There is no charge to the student by the university for the test-out examination.

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 one of the two options listed below, (A) or (B):

(A) Completion of the second semester of a foreign language (course number 102).

Students may test out of the course.

Completion of a foreign language course above 102 with a grade of C or better will satisfy the requirement.

(B) Completion of FL 100, Introduction to Comparative Linguistics, and ANTHR 106, Language, Thought and Culture.

Foreign students for whom English is a second language may substitute two semesters 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 2.00 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.

ACCOUNTABILITY PROGRAM

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;

- 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 and interviews; and
- 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.

Basic Educational Goals for all Undergraduates

Effective for students entering for or after 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 the 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.

Economic, Political, and Social Systems

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

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.

Assessment of Basic Educational Goals

To assess the extent to which students meet or exceed the above performance goals, the university requires that students who have completed at least 90 credit hours be interviewed relative to their assessment of basic educational goals.

To assist students in preparing to meet the performance expectations stated in the 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; and
- 2) meet their general education requirements by the end of the sophomore year, to the extent allowed by the degree program.

Educational Goals for Majors and Minors

Effective for students entering full-time for or after 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.

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

Assessment results will be disseminated by the faculty of students' major departments in accordance with departmental accountability plans; other results will be available in the Office of the Provost.

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

GRADUATION RATES

The graduation (or completion) rate is one of the most commonly cited measures of success. This is simply the percentage of a defined body of students who graduate in a specified period of time. For the purposes of this brief report, the entering cohort of interest is defined to be first-time freshmen enrolling full-time in a fall term as degree-seeking students. Full-time students consist of those students who enrolled for 12 or more hours during their initial term. The chart below provides the graduation rates for full-time students by entry cohort at the University of Southern Colorado.

USC graduation rates for full-time students:

	1984	1985	1986	1987	1988
Graduating in 4 years	8.0%	10.7%	12.3%	9.8%	9.1%
Graduating in 5 years	19.1%	22.1%	27.5%	22.4%	—
Graduating in 6 years	24.3%	27.0%	32.7%	—	—

**THE COLLEGE OF APPLIED SCIENCE
AND ENGINEERING TECHNOLOGY**

Dr. Ray L. Sisson, dean

Academic Departments	Majors	Minors
Engineering	Industrial Engineering (BSIEN) Systems Engineering (MS) Engineering Transfer Program	
Engineering Technology	Civil Engineering Technology (BSCET) Electronics Engineering Technology (BSEET) • Computer Engineering Technology Mechanical Engineering Technology (BSMET)	
Industrial Technology	Automotive Parts and Service Management (BS) Computer Science Technology (BS) Industrial Science Technology (BS) • Teaching IST • Facilities Technology	Automotive Parts and Service Management Computer Information Systems Computer Science Industrial Science and Technology (Teaching Option)

• Options within a degree program

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 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. The BSIEN degree program is accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET).

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 (TAC) of the Accreditation Board for Engineering and Technology (ABET). 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 unequalled combination.

The computer science technology degree program emphasizes computer information systems.

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.

ENGINEERING DEPARTMENT

CHAIR: Carrasco
FACULTY: Massey, Mata, Mills, Sarper, Sisson

The industrial engineering major leads to a bachelor of science in industrial engineering (BSIEN) degree. This program is accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET). The department also provides courses for the first two years of other engineering disciplines for potential transfer students, 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 and quality specialists who deal with the human aspects of work in addition to the advanced technologies of computer software and production-related hardware.



The department also offers the master of science in systems engineering. For more information, 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

- To provide students with high-quality instruction in industrial engineering which is broad-based and strongly rooted in mathematics, physical science and engineering science.
- To prepare graduates in industrial engineering to function effectively in the workplace and make immediate contributions to the efficient and effective operation of manufacturing industries, service organizations and governmental agencies.
- To maintain accreditation by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET).

Expected Student Outcomes

General Requirements

- Graduates are required to complete an approved program of study with a cumulative GPA of 2.00 or better in their major courses.
- Students transferring into industrial engineering (IE) from other universities and/or departments must have a minimum overall GPA of 2.50. Students transferring into IE from the departmental transfer program must be in good academic standing at the time of the transfer request.
- Students attempting required industrial engineering courses are expected to have completed all prerequisite courses with a minimum grade of C.
- Graduates are required to demonstrate the ability to formulate mathematical models, develop and use computer solutions as appropriate, collect and statistically analyze data, and prepare both written and oral reports of their analyses.

Specific Requirements for the Industrial Engineering Major

EN Courses		Titles	Credits
EN	103	Introduction to Engineering	2
	105	FORTRAN	3
	107	Engineering Graphics	2
	211	Engineering Mechanics I	3
	212	Engineering Mechanics II	3
	231/231L	Circuit Analysis/Lab	5
	315	Intro to Indust & Sys Engineering	3
	321	Thermodynamics	3
	324/324L	Mechanics of Materials/Lab	4

340	Human Performance Engineering	4
342	Manufacturing Processes	4
343	Engineering Economy	3
420	Simulation & Stochastic Processes	4
440	Safety Engineering	4
443	Quality Control & Reliability	3
471	Operations Research	3
473	Production & Computer Aided Engr	3
475	Systems Analysis and Design	3
477	Operations Planning and Control	3
488	Indust Engineering Design Projects	3
	TOTAL	65

Other Required Courses

MATH	126	Calculus and Analytic Geometry I	5
MATH	224	Calculus and Analytic Geometry II	5
MATH	256	Probability for Engineers and Scientists	3
MATH	207	Matrix & Vector Algebra	2
MATH	337	Differential Equations I	3
MATH	356	Statistics for Engineers and Scientists	3
PHYS	221/221L	General Physics I/Lab	5
PHYS	222/222L	General Physics II/Lab	5
CHEM	121/121L	General Chemistry I/Lab	5
BIOL	280	Introduction to Biotechnology	3
	TOTAL		39

Institutional and General Education

The general education requirement for graduation includes a total of 42 semester hours in three categories. Of these 42 hours, 12 are met by courses specified in the engineering major.

Skills Component

ENG	101	Composition I	3
ENG	102	Composition II	3
SPCOM	103	Speaking and Listening	3
Computer Usage		(EN 103 substituted)	0
Mathematics		(Waived)	0
Knowledge Component			18

(As listed on page 301, K¹ through K⁶) (K⁷ & K⁸ Waived)
Upper-Division Requirement

GENERAL EDUCATION TOTAL 30

Total Credit Hours: 134

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 engineering. Consequently, the faculty support the activities of the local chapters of the Institute of Industrial Engineers (IIE) and the Society of Women Engineers (SWE), encourage student participation and promote the operation of student chapters.

Outcomes Assessment Activities

- During the final semester of study and after successfully completing necessary prerequisite courses, all industrial engineering students are required to demonstrate their ability to apply and integrate the skills learned in the IE program by producing a capstone engineering design project. This project must incorporate subject material covered in two or more of the major courses, illustrate the student's ability to do independent project work, and include written and oral reports to demonstrate the student's communication skills.
- All senior industrial engineering students are required to take the Fundamentals of Engineering (Engineer-In-Training or EIT) Exam administered by the Colorado State Board of Registration for Professional Engineers, on a regularly scheduled examination date. Students must take the exam to be eligible to graduate, although the results of the exam will not effect GPA or graduation.
- Employment, progress toward profession registration, and enrollment in graduate degree programs will be tracked to the extent possible.

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

Courses	Titles	Credits
CHEM 121/121L	General Chemistry/Lab	5
CHEM 123	Chemistry II for Engineers	2
EN 105	FORTRAN	3
EN 107	Engineering Graphics	2
ENG 101	Composition I	3
MATH 126/224	Calculus & Analytic Geometry I/II	10
PHYS 221/221L	General Physics I/Lab	5
General Education		3
HP Approved Courses		2
	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		3
	TOTAL	32

NOTE: 1) For priority consideration, transfer students should have a grade-point average of 2.50 or better with 60 semester-hour credits or more and a grade-point average of 3.00 or better with fewer 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: McNeill
FACULTY: Burton, Chen, Cheng, Greet, Hirth, Holderness, Knight, Perkins, Sathi, Slocum, Sweet, Tappen, 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 bachelor of science degree in electronics engineering technology (BSEET). The EET program prepares graduates for positions in the electronic and computer industries. The option in computer engineering technology leads to the BSEET degree with an emphasis in computer engineering technology. The program allows for combining computer hardware and software in an integrated curriculum. 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 a bachelor of science degree 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.

Departmental Goals

- To prepare graduates in the disciplines of civil, computer, electronics and mechanical engineering technology to function effectively in the engineering spectrum.

- To graduate students who can apply the theoretical foundations and skills of their discipline to solve practical engineering problems by using existing technology.
- To maintain accreditation for all programs as defined by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology.

Expected Student Outcomes

General Requirements

- Graduates are required to complete an approved program of study with a cumulative GPA of 2.00 or better in their major courses.
- Graduates are required to demonstrate skill and knowledge in the areas of quantitative analysis and science by having a cumulative GPA of 2.00 or better in the mathematics and physics courses common to all programs.
- All engineering technology majors are required to demonstrate the ability to solve problems appropriate to their discipline, to use computer techniques and to complete a final senior year technical project requiring a hardware and/or software model and an oral and written presentation.
- All engineering technology majors are required to study at least one computer language and to demonstrate their 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 design, and soil mechanics which are central to the discipline. This program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology.

CET Courses	Titles	Credits
CET 101	Intro to Civil Engineering Tech	3
102	Surveying I	3
103	Surveying II	3
115	Civil Drafting I	3
116	Civil Drafting II	3
117	Computing for CET	3
202	Statics and Dynamics	4
206	Strength of Materials	3
207	Construction Materials & Methods	3
208/208L	Concrete & Asphalt Materials/Lab	3
215	Advanced Surveying I*	3
	or	
216	Advanced Surveying II*	4

303	Construction Management	2
304	Construction Cost Estimating I	3
305	Construction Cost Estimating II	3
315/315L	Soil Mechanics Technology/Lab	3
320	Introduction to Construction Economy	1
404	Structural Steel Design	3
405	Reinforced Concrete Design	3
411/411L	Hydraulics/Lab	4
493	Senior Seminar	1
Approved CET Electives	.....	12
TOTAL		70

* Either CET 215 or CET 216 required (not both)

Other Required Courses			
ENG	305	Tech & Scientific Report Writing	3
MATH	131	Math Engineering Technology I	4
MATH	132	Math Engineering Technology II	4
MATH	231	Calculus for Engineering Tech I	3
MATH	232	Calculus for Engineering Tech II	3
PHYS	201/201L	Principles of Physics I/Lab	4
PHYS	202/202L	Principles of Physics II/Lab	4
GEOL	101/101L	Earth Science/Lab	4
A total of six credits selected from:			
ACCTG	201	Principles of Financial Accounting	3
BUSAD	220	Principles of Business Law	3
MGMT	310	Principles of Management	3
MGMT	318	Personnel Management	3
EN	343	Industrial Engineering Economy	3
TOTAL		35	

Institutional and General Education

The general education requirement for graduation includes a total of 42 semester hours in three categories.

Skills Component			
ENG	101	Composition I	3
ENG	102	Composition II	3
SPCOM	103	Speaking and Listening	3
Computer Usage (Waived)		0	
Mathematics (Waived)		0	
Knowledge Component (With Physical Science waiver)		21	
(As listed on page 301, K' through K*)		3	
Upper-Division Requirement		3	
GENERAL EDUCATION TOTAL		33	

Total Credit Hours: 138

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. This program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology.

EET Courses	Titles	Credits
EET 110/110L	Computer Applications/Lab	3
121/121L	DC Circuits/Lab	5
122/122L	AC Circuits/Lab	5
211/211L	Electronics I/Lab I	4
212/212L	Electronics II/Lab II	4
254/254L	Intro to Digital Systems/Lab	4
255/255L	Intro to Microprocessors/Lab	4
311/311L	Control Systems I/Lab I	4
351/351L	Electronics III/Lab III	4
353	Advanced C Programming	3
354/354L	Computer Architecture/Lab	4
355/355L	Advanced Microcomputer Systems	4
356/356L	Electronics IV/Lab IV	4
393	Seminar	1
412	Communication Systems	3
455/455L	Control Systems II/Lab II	4
456/456L	Design Projects/Lab	2
Approved EET electives	.....	3
TOTAL		65

Other Required Courses

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

Institutional and General Education

The general education requirement for graduation includes a total of 42 semester hours in three categories.

Skills Component		
ENG	101	Composition I .....3
ENG	102	Composition II .....3
SPCOM	103	Speaking and Listening .....3
Computer Usage (Waived) .....0		
Mathematics (Waived) .....0		
Knowledge Component with Physical Science waiver .....21 (As listed on page 301, K ¹ through K ⁹)		
Upper-Division Requirement .....3		
		GENERAL EDUCATION TOTAL 33

Total Credit Hours: 138

Specific Requirements for the EET Computer Engineering Technology Option

All EET Computer Engineering Technology option majors will be required to learn applications programming, PC support, computer architecture, database principles and the use of basic electronic laboratory procedures. Students must demonstrate such knowledge through appropriate laboratory experiences.

EET Courses	Titles	Credits
EET 110/110L	Computer Applications/Lab	3
121/121L	DC Circuits/Lab	5
122/122L	AC Circuits/Lab	5
211/211L	Electronics I/Lab	4
212/212L	Electronics II/Lab	4
254/254L	Intro to Digital Systems/Lab	4
255/255L	Intro to Microprocessors/Lab	4
354/354L	Computer Architecture/Lab	4
355/355L	Advanced Microcomputer Systems	4
456/456L	Design Projects/Lab	2
		TOTAL 39

CST Courses	Titles	Credits
CST 121	Computer Science I	4
122	Computer Science II	4
211	C Language Programming	3
270	Files Processing	3
316	Operating Systems	3
321	Advanced Data Structures	3
330	Programming Languages	3
350	Data Base Systems	3
		TOTAL 26

Other Required Courses

ENG	305	Tech & Scientific Report Writing .....3
MATH	131	Algebra/Trig for Engineering Tech I .....4
MATH	132	Algebra/Trig for Engineering Tech II .....4
MATH	207	Matrix & Vector Algebra with Appl .....2
MATH	231	Calculus for Engineering Tech I .....3
MATH	232	Calculus for Engineering Tech II .....3
PHYS	201/201L	Principles of Physics I/Lab .....4
PHYS	202/202L	Principles of Physics II/Lab .....4
OR		
CHEM	111/111L	Principles of Chemistry/Lab .....4
CST, EET, MET Approved Electives		9
		TOTAL 36

Institutional and General Education

The general education requirement for graduation includes a total of 42 semester hours in three categories.

Skills Component		
ENG	101	Composition I .....3
ENG	102	Composition II .....3
SPCOM	103	Speaking and Listening .....3
Computer Usage (Waived) .....0		
Mathematics (Waived) .....0		
Knowledge Component with Physical Science waiver .....21 (As listed on page 301, K ¹ through K ⁹)		
Upper-Division Requirement .....3		
		GENERAL EDUCATION TOTAL 33

Total Credit Hours: 134

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. This program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology.

MET Courses	Titles	Credits
MET 105/105L	Materials for Engineering Appl/Lab	4
111	Introduction to Drafting	3
112	Computer-Aided Drafting	3
202	Statics	3
203/203L	Manufacturing Processes I/Lab	4
204/204L	Manufacturing Processes II/Lab	3
206/206L	Strength of Materials	3
305	Computer Programming and Algorithms	3
311	Quality Control	3
322	Dynamics of Machinery	3
341	Thermal and Fluid Principles I	3

352/352L	Design of Machine Elements/Lab	.....3
356	Basic Design Principles	.....2
361/361L	Computer Integrated Manufacturing/Lab	...3
441/441L	Thermal & Fluid Principles II/Lab	.....3
442/442L	Design of Energy Systems/Lab	.....3
456/456L	Senior Project/Lab	.....2
460/460L	Instrumentation & Control Systems/Lab	...3
Approved MET Electives		.....3
TOTAL		57
Other Required Courses		
EET 250/250L	Basic Electronic Principles/Lab	.....4
EET 350/350L	Electronic Motors & Controls/Lab	.....4
ENG 305	Tech & Scientific Report Writing	.....3
MGMT 310	Principles of Management	.....3
MATH 131	Math for Engineering Tech I	.....4
MATH 132	Math for Engineering Tech II	.....4
MATH 231	Calculus for Engineering Tech I	.....3
MATH 232	Calculus for Engineering Tech II	.....3
BUSAD 260	Business Statistics I	.....3
PHYS 201/201L	Principles of Physics I/Lab	.....4
PHYS 202/202L	Principles of Physics II/Lab	.....4
CHEM 111/111L	Principles of Chemistry/Lab	.....4
Approved Technical Electives		.....6
TOTAL		49
Institutional and General Education		
The general education requirement for graduation includes a total of 42 semester hours in three categories.		
Skills Component		
ENG 101	Composition I	.....3
ENG 102	Composition II	.....3
SPCOM 103	Speaking and Listening	.....3
Computer Usage (Waived)		.....0
Mathematics (Waived)		.....0
Knowledge Component with Physical Science waiver		.....21
(As listed on page 301, K ¹ through K ⁸)		
Upper-Division Requirement		.....3
GENERAL EDUCATION TOTAL		33
Total Credit Hours: 139		

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

- To be eligible for graduation, all engineering technology majors are required to take a departmental examination in their discipline. The results of the examination will be used by the department in the evaluation of its programs. The results for individual students will be kept in strict confidence by the department; however, any individual student can obtain her/his results for advisory purposes. Test results will have no effect on student's GPA.
- The graduates and their employers will be surveyed as to program satisfaction and job performance during the first, third and fifth years following graduation.

INDUSTRIAL TECHNOLOGY DEPARTMENT

CHAIR: Tedrow
FACULTY: Bandy, Borton, Bottini, Carleo, Cook, Darby, Padgett, Sefcovic, Smith

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 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 professionals. Students are prepared for careers as computer programmers, systems analysts, network and database administrators. Two minors are offered within the computer science technology program. The computer information systems minor provides computer applications-related skills, to prepare graduates for employment in the region served by the university. The computer science minor teaches computer organization and methodology as techniques of program and system design.

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 related 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 students with the appropriate knowledge and skills necessary to become productive, accountable, and responsible employees upon entering the work force.
- To provide students with a comprehensive theoretical foundation, bolstered by hands-on laboratory experiences.
- To utilize professional advisory committees to advise faculty of industrial technology programs for purposes of keeping the curriculums current with industry needs.

The automotive parts and service management student will:

- Possess technical knowledge in the under-vehicle areas such as braking, steering, and suspension systems.
- Have an understanding of modern design, operation, and repair of engines and related accessory systems.
- Understand and demonstrate by testing; a knowledge of electrical, electronic computerized systems of the modern automobile.
- Possess technical knowledge and skills related to power transfer in the automobile to include automatic and manual transmissions, differentials and transferable systems.
- Have a working knowledge of automotive parts outlet management and operation.
- Be familiar with various computerized service and parts management systems.
- Possess knowledge and understanding of customer relations, automotive management styles and methods.
- Have a working knowledge of automotive-specific financial systems.

The computer science program student will:

- Demonstrate skills in applications programming, PC support and configuration, systems analysis, local-area network administration and database administration.
- Demonstrate mastery of communication skills as well as proficiency in a field of study outside the major.

The technology education (teaching) student will:

- Develop the knowledge and skills necessary to enter teaching positions in junior or senior high schools.
- Develop a basic technical vocabulary and demonstrate hands-on skills in a variety of manufacturing processes.

- Apply technical knowledge and state-of-the-art methods to solving problems in teaching technology education.
- Demonstrate competencies in understanding and completing a variety of graphic communications projects using equipment in communications.
- Demonstrate a working knowledge of the principles associated with transportation, and power and energy.
- Apply technical information and teaching methods to meet the requirements for State of Colorado Teacher Certification in Technology Education.

The facilities technology student will:

- Be able to perform facilities operations and maintenances.
- Understand and have working knowledge of commercial real estate.
- Have knowledge and appreciation of human and environmental factors.
- Be able to do planning and project management.
- Analyze and solve problems relative to facilities functions.
- Understand the procedures and processes of corporate finance.
- Be able to develop and manage a quality assessment and innovation program.
- Communicate and do critical thinking and problem-solving in facilities management.

General Requirements for the APSM Program

- Graduates of the 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 to be successful; therefore, APSM students must complete their courses with a cumulative GPA of 2.00 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	Titles	Credits
APSM 105	Intro to the Parts & Serv Indust	1
115	Automotive Engine Design & Operation	5
125/125L	Automotive Susp & Brake Systems/Lab	4
135/135L	Automotive Fuel Sys & Exhaust Ems/Lab ...	4
155	Automotive Jobbers & Dealer Parts Oper .	4
215/215L	Automotive Power Trains & Dr Lines/Lab ..	4
245/245L	Automotive Electrical Systems I/Lab	4
255/255L	Automotive Electrical Systems II/Lab	4
265	Automotive Parts Systems	4
305	Automotive Parts Service/EPA Issues	3
325	Fuels & Lube Production, Mktg & Conservation	3
335/335L	Automotive Shop Practices/Lab	5
345/345L	Advanced Automotive Systems/Lab	5
405	Personal Selling Methods & Techniques ...	4
425	Automotive Financial Systems	5
TOTAL		59

Other Required Courses

ACCTG 201	Principles of Financial Accounting	3
ACCTG 202	Principles of Managerial Accounting	3
BUSAD 302	Ethical Issues	3
CHEM 111/111L	Principles of Chemistry/Lab	4
ECON 201	Principles of Macroeconomics	3
ECON 202	Principles of Microeconomics	3
FIN 330	Corporate Financial Management	3
MGMT 310	Principles of Management	3
MGMT 318	Personnel Management	3
MGMT 468	Total Quality Management	3
MKTG 340	Principles of Marketing	3
MATH 120	Survey of Mathematics	4
TOTAL		38

Institutional and General Education

The general education requirement for graduation includes a total of 42 semester hours in three categories.

Skills Component

ENG 101	Composition I	3
ENG 102	Composition II	3
SPCOM 103	Speaking and Listening	3
Computer Usage (CST 101)	.....	2
Mathematics (Waived)	.....	0
Knowledge Component	.....	21
(As listed on page 301, K ¹ through K ⁷) (K ⁸ waived)	.....
Upper-Division Requirement	.....	3

GENERAL EDUCATION TOTAL 35

Total Credit Hours: 132

Specific Requirements for the APSM Minor

APSM 115	Automotive Engine Design & Operation	5
125/125L	Automotive Suspension & Brake Sys/Lab	4
135/135L	Automotive Fuel Sys & Exhaust Ems/Lab	4
155	Automotive Jobber & Dealer Parts Operation	4
265	Automotive Parts Systems	4
245/245L	Automotive Electrical Systems I/Lab	4
TOTAL		25

General Requirements for the CST Program

- Students majoring or minoring in computer science technology must maintain grades of C or higher in all courses offered by the department.
- Students must complete at least 128 semester hours in an approved program of study, including 48 hours in the major.
- At least 75 percent of CST upper-division credits supporting the major must be taken in residence.
- Students must complete a course planning worksheet and participate in the advisement process with a member of the CST faculty.

Specific Requirements for the CST Major

CST Courses	Titles	Credits
CST 121	Computer Science I	4
130	Programming Methodology	1
131	COBOL Programming I	3
150/150L	Micro Computer Software Appl/Lab	3
211	C Programming Language	3
240	Systems Analysis and Design I	3
301/301L	Local Area Network Concepts/Lab	3
331	Professional Programming Projects	3
341	Systems Analysis and Design II	3
350	Data Base Systems	3
385	PC Architecture & System Software	3
493	Seminar	1

Language Specialization Course (CST 231 COBOL II

or		
CST 253 Advanced C Language)	.....	3
Lower-division CST Electives	.....	7
Upper-division CST Electives	.....	5
TOTAL		48

Other Required Courses

ACCTG 201	Principles of Financial Acctg	3
ENG 305	Tech and Scientific Report Writing	3
MGMT 310	Principles of Management	3
TOTAL		9
MATH 121	College Algebra	4
or		

MATH	124	Precalculus Math	5
or			
MATH	131	Algebra/Trig for Engineering Tech I	4
MATH	132	Algebra/Trig for Engineering Tech II	4
MATH	156	Introduction to Statistics	3
TOTAL			4-8

Institutional and General Education

The general education requirement for graduation includes a total of 42 semester hours in three categories.

Skills Component			
ENG	101	Composition I	3
ENG	102	Composition II	3
SPCOM	103	Speaking and Listening	3
Computer Usage (CST 101)			2
Mathematics (Waived)			0
Knowledge Component			25
(As listed on page 301, K ¹ through K ⁹)			
Upper-Division Requirement			3
GENERAL EDUCATION TOTAL			39

FREE ELECTIVES	8
APPROVED MINOR	20
Total Credit Hours: 128-132	

Specific Requirements for the CIS Minor

CST Courses	Titles	Credits	
CST	121 Computer Science I	4	
	150/150L Microcomputer Software Appl/Lab	3	
	240 Systems Analysis & Design I	3	
	301/301L LAN Concepts/Lab	3	
CST Elective Language Course (Choose from COBOL or C Language)		3	
CST Electives (includes three hours upper division)		6	
TOTAL			22

Specific Requirements for the CS Minor

CST Courses	Titles	Credits	
CST	130 Programming Methodology	1	
	121 Computer Science I	4	
	122 Computer Science II	4	
CST Electives (includes six hours upper division)		11	
TOTAL			20

General Requirements for the IST Program

- Graduates of this program are required to complete an approved curriculum with a cumulative GPA of 2.50 or better for the Teaching Option and 2.00 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 Center for Teaching and Learning at 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 2.00 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 to 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)

Courses	Titles	Credits	
APSM	225 Power Energy Technology	3	
EET	250 Basic Electronics Principles	4	
IST	101 Woods Technology	3	
IST	120 Introduction to IST	2	
IST	121 Industrial Materials Technology	3	
or			
IST	122 Building Materials	3	
IST	205 Issues & Trends in Technology	2	
IST	206 Commercial & Residential Construction	3	
IST	303 Communication Systems Technology	3	
IST	304 Transportation Technology	3	
IST	320 Industrial Manufacturing I	3	
IST	331 Industrial Manufacturing II	3	
IST	375 Plant Layout/Organization	3	
IST	377 Curriculum Dev & Eval in IST	3	
IST	401 Production Systems	3	
IST	455 Methods/Tech of Teaching IST	3	
IST	457 Industrial Safety	3	
MET	111 Technical Drafting	3	
MET	112 Computer-Aided Drafting	3	
IST Electives		6	
TOTAL			59

Other Required Courses

BIOL	121	Environmental Conservation	3
CHEM	111/111L	Principles of Chemistry/Lab	4
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
MATH	131	Algebra/Trig for Engineering Tech I	4
MATH	132	Algebra/Trig for Engineering Tech II	4
PHYS	201/201L	Principles of Physics/Lab	4
PSYCH	100	General Psychology	3
PSYCH	151	Human Development	3
RDG	425	Teaching Reading in Content Areas	2
			TOTAL 55

Institutional and General Education

The general education requirement for graduation includes a total of 42 semester hours in three categories.

Skills Component

ENG	101	Composition I	3
ENG	102	Composition II	3
SPCOM	103	Speaking and Listening	3
Computer Usage (CST 101)			2
Mathematics (Waived)			0

Knowledge Component

(As listed on page 301, K¹, K², K³, K⁴, K⁵) (K⁵, K⁷, K⁸ Waived)

Upper-Division Requirement

GENERAL EDUCATION TOTAL 29

Total Credit Hours: 143

Specific Requirements for the IST Major (Facilities Technology Option)

Courses	Titles	Credits	
CET	304	Construction Cost Estimating	3
CET	314	Comm Architectural Drafting II	3
IST	120	Introduction to IST	2
IST	122	Building Materials	3
IST	135	Period & Modern Furniture Design	3
IST	205	Issues in Technology	2
IST	206	Commercial & Residential Construction	3
IST	332	Facilities Management I	3
IST	333	Facilities Management II	3
IST	362	Building Systems	3
IST	375	Plant Layout/Organization	3
IST	457	Industrial Safety	3
IST	459	Facilities Supervisor	3
IST	493	Seminar	3

IST	496	Cooperative Education Placement	3
IST Electives			6
MET	111	Technical Drafting	3
MET	112	Computer-Aided Drafting	3
			TOTAL 55

Other Required Courses

ACCTG	201	Principles of Financial Acctg	3
ACCTG	202	Principles of Managerial Acctg	3
BIOL	121	Environmental Conservation	3
BUSAD	260	Business Statistics I	3
BUSAD	302	Ethical Issues & Legal Envir of Bus	3
CHEM	111/111L	Principles of Chemistry/Lab	4
ECON	201	Principles of Macroeconomics	3
ECON	202	Principles of Microeconomics	3
MGMT	310	Principles of Management	3
MGMT	311	Production/Operation Management	3
MGMT	468	Total Quality Management	3
MATH	121	College Algebra	4
PHYS	201/201L	General Psychology	4
			TOTAL 42

Institutional and General Education

The general education requirement for graduation includes a total of 42 semester hours in three categories.

Skills Component

ENG	101	Composition I	3
ENG	102	Composition II	3
SPCOM	103	Speaking and Listening	3
Computer Usage (CST 101)			2
Mathematics (Waived)			0

Knowledge Component

(As listed on page 301, K¹, K², K³, K⁴, K⁵) (K⁵, K⁷, K⁸ Waived)

Upper-Division Requirement

GENERAL EDUCATION TOTAL 29

Total Credit Hours: 129

Specific Requirements for the IST Minor (Teaching Option)

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

Co-curricular Requirements

In all programs, the faculty support and encourage students to have co-curricular experiences that complement and reinforce the curricular experiences by participation in student organizations, clubs, employment or other activities related to these programs.

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 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.



THE COLLEGE OF HUMANITIES AND SOCIAL SCIENCES

Dr. Friederike Wiedemann, dean

Academic Departments	Majors	Minors
Art	Art (BA, BS)	Art
English/Foreign Languages	English (BA)	English
	Foreign Languages	French
	Spanish (BA)	Italian Spanish
History/Political Science/Social Science/Philosophy/Chicano Studies	History (BA)	History
	Political Science (BA, BS)	Political Science
	Social Science (BA, BS)	Social Science Philosophy Chicano Studies
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)	Anthropology
	Social Work (BSW)	Sociology
Speech Communication/Theatre	Speech Communication (BA, BS)	Speech Communication Theatre

A university has the development of the human mind at its center. Throughout history, the disciplines represented in the liberal arts developed our ways of thinking and our methods of creating, researching, and inventing. It is the mission of the College of Humanities and Social Sciences to carry this tradition forward and to contribute to our knowledge in the arts, the humanities, and the social sciences. The college reflects the polytechnic mission of the university by introducing modern technology into its disciplines and by strongly emphasizing applied activities in all the fields it represents. Thus, grounded in the humanities and committed to career-oriented education, each of the college's departments seeks to enhance its students' academic and social growth; to help them find their individual aesthetic preferences and ethical priorities; to assist them in becoming responsible citizens; to guide them as they acquire intellectual knowledge and practical skills; and to prepare them to make enlightened choices.

ART DEPARTMENT

CHAIR: Jensen
FACULTY: Audrey, Hench, Marino, Wands

The art curriculum is intended to increase the student's awareness and understanding of art and its relationship to society. The art major prepares the student to be a practicing artist, to enter graduate school for further professional education, or to teach art at the elementary level. Students may select art courses as a minor or as a means of achieving a greater sense of personal sensitivity. Students, faculty, and invited professional artists display their work in the USC Art Gallery.

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 discipline of fine art to become creative and responsible citizens with skills in studio processes and a knowledge of art history.

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.
- Art 104 Computer Graphics Literacy

Specific Requirements for the Art Major

- ART CORE

ART Courses	Titles	Credits
ART	101 or 105 and 102 - Art Survey (History)	.6
	115 and 116 - Design I & II	6
	141 and 142 - Drawing I & II	4
	110 - Art Orientation	1
	410 - Career Orientation	1
	TOTAL	18

- In addition to the Art Core the BA degree requires an additional minimum of 22 hours of art to be chosen in consultation with a faculty adviser.
- The BS degree requires an additional minimum of 30 hours of art to be chosen in consultation with a faculty adviser.
- State certification in art education requires an additional 30 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 believes 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 110). 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 35mm color slides, color prints and/or 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 makeup 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.

**HISTORY/POLITICAL SCIENCE/SOCIAL SCIENCE/
PHILOSOPHY/CHICANO STUDIES DEPARTMENT**

CHAIR: Aichele
FACULTY: Driscoll, Eagan, Grube, Nicholl, Otis, Sandoval, Wright

The programs in history, political science, social science, philosophy, and Chicano studies are intended to provide domains of study both for those who desire knowledge purely for their own personal enrichment and for those who desire to apply their knowledge toward career objectives. Students who major or minor in the fields of the department should expect to develop and refine their knowledge of other cultures and the historical and political development of the modern world. They should also expect to engage in methodical research. Other expectations of students include the ability to prepare rationally cogent papers and the ability to understand political theories, historical movements, and the connections between them.

The departmental programs not only prepare students for occupations in government, business, education, and industry, but they also are central to the university's traditional function of transmitting culture from generation to generation.

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		Titles	Credits
HIST	101	World Civilization to 1100	3
	102	World Civilization from 1100 to 1800	3
	103	World Civilization since 1800	3
	201	United States History I	3
	202	United States History II	3
	300	Historiography	3
	493	Seminar	3
History Electives			15
		TOTAL	36

Specific Requirements for the History Minor

Option I			
HIST	103	World Civilization since 1800	3
	202	United States History II	3
	211	Colorado History	2
	300	Historiography	3
History Electives			10
		TOTAL	21
Option II			
HIST	201	United States History I	3
	202	United States History II	3
	211	Colorado History	2
	300	Historiography	3
History Electives			10
		TOTAL	21
Option III			
HIST	101	World Civilization to 1100	3
	102	World Civilization from 1100 to 1800	3
	103	World Civilization since 1800	3
	300	Historiography	3
History Electives			9
		TOTAL	21

Outcomes Assessment Activities

- Demonstrated proficiency in writing coherent and accurate essays on specific topics within the discipline, as determined by the history faculty.
- 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 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.

Political Science Program

The major in political science leads to the degrees 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.

While encouraging an exposure to a number of the subfields of the discipline, three areas of emphasis are offered in the political science major: public law, comparative and international politics, and American political institutions and politics.

Program Goals

- To prepare graduates with a major in the discipline to be able to:
- Demonstrate a basic understanding of historical, philosophical 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 2.50 or higher.
- Minors must complete a minimum of 24 semester credit hours in political science (including nine credit hours in the core) with a cumulative GPA of 2.00 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.
- 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		Titles	Credits
POLSC	100	Study of Politics	3
	101	American National Politics	3
	201	Comparative Politics	3
	or 202	World Politics	3
	250	Scope and Methods in Political Science	3
	370	Political Thought	3
	493	Seminar for Majors	3
Political Science Electives		.....	18
		TOTAL	36

Specific Requirements for the Political Science Minor

POLSC	100	Study of Politics	3
	101	American National Politics	3
	201	Comparative Politics	3
	or 202	World Politics	3
Political Science Electives		.....	15
		TOTAL	24

Pre-Law Program

Students interested in attending law school should consult the department's pre-law adviser.

Outcomes Assessment Activities

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).
- 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;
- To maintain accredited status with NCSS.

Expected Student Outcomes

General Requirements

- No grade below C is acceptable in the major or minor.
- A prerequisite of a 2.50 cumulative GPA in the major is required for student teaching.

- Proficiency in writing coherent and accurate essays on specific topics within the discipline is required. Such proficiency will be demonstrated in those major courses with a specific writing component.
- Students in the elementary and secondary education tracks must demonstrate the abilities to communicate knowledge in various areas of the discipline, to demonstrate information contained within the disciplines, and to coherently organize the information and to work in group situations.

Specific Requirements for the Social Science Major

	Credits
General Track	
Social Science Core	27
Specialty Core	24
TOTAL	51
International Relations Track	
Social Science Core	24
Specialty Core	27
TOTAL	51
Public Administration Track	
Social Science Core	22
Specialty Core	30
TOTAL	52
Elementary Education Track	
Social Science Core	48
Secondary Education Track	
Social Science Core	41
Specialty Core	10
TOTAL	51

Courses must be chosen in consultation with a social science adviser. For teaching endorsement requirements, see the *Center for Teaching and Learning* section of this catalog.

Specific Requirements for the Social Science Minor

- Completion of 24 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;
- Proficiency in writing coherent and accurate essays 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.

Philosophy Program

The minor in philosophy complements majors and careers in politics, law, literature, health care, business, technologies, and the liberal arts.

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

Students who wish to minor in philosophy must complete a minimum of 21 credit hours of approved philosophy courses with grades averaging C or better.

Specific Requirements for the Philosophy Minor

PHIL Courses		Titles	Credits
PHIL	101	Intro to Problems in Philosophy	
	or 200	Plato and the Greeks	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	
	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.

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 American continents 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;
- To offer individually designed minors in support of students' majors.

Expected Student Outcomes

General Requirements

- Students in Chicano Studies courses will display an adequate and measurable knowledge of the subject matter within the course.
- Students in Chicano Studies courses will develop an understanding of the relationships of ethnic groups within American society by viewing the academic study of Chicanos as a paradigm for the study of other ethnic groups.
- Students must earn a C or better in all courses applicable to the minor.

Specific Requirements for the Chicano Studies Minor

Twenty-one hours: twelve required, nine elective. The student will choose three of the first four classes, and the seminar.

CS Courses		Titles	Credits
CS	101	Introduction to Chicano Studies	3
	136	The Southwest United States	3
	246	History of Mexico	3
	291	Special Topics	3
	and 493	Seminar in Chicano Studies	3
		Electives	9
		TOTAL	21

Electives may be selected from Chicano Studies courses, several of which are cross-listed with other departments, or by approval of the Chicano Studies coordinator, from courses in such areas as Spanish, history, psychology, sociology, and social work, among others.

CS	220	Survey of Chicano Literature	3
	230	Chicano: Social and Psych Study	3
	291	Special Topics	1-3
	303	Chicano Labor History in the U.S.	3
	335	Health in the Chicano Community	3
	489	Borderlands	3
	495	Independent Study	1-3

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 student's academic performance.
- 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 comparative analysis of grade distribution patterns.

ENGLISH/FOREIGN LANGUAGES DEPARTMENT

CHAIR: Kaplan
FACULTY: Bright, Covi, Croxton, Dille, Fogelquist, Griffin, Hochman, Illick, Morales, Senatore, C. Taylor, K. Taylor, T. Taylor, Torres, Wiedemann

English Program

The major in English leads to a degree of bachelor of arts (BA) and provides graduates with an understanding of language and literature as a basis for aesthetic, ethical, social, and academic ways of thinking, creating, and researching. Critical, analytic, and composing skills, which provide excellent preparation for professional careers such as teaching, business, media, public service, and the arts, are emphasized.

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 believes 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 40 or more semester credit hours of courses in English, 20 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

Minor requirements are 20 or more semester credit hours of course work in English, of which 12 must be upper-division. Courses must be chosen in consultation with an adviser in English.

For teaching endorsement requirements, see the *Center for Teaching and Learning* 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

- Faculty advisers meet individually with each of their students on a regular basis to help them plan their schedules and to discuss their educational and career goals. Advisers maintain an accurate and up-to-date record of each of their student's progress towards completion of the requirements for the major.
- All English majors will participate in a senior-year seminar in which vocational and professional standards will be emphasized. The senior-year seminar will synthesize all of the writing and analytical skills students will have acquired in their other English classes. Students in this class will be expected to complete a senior research project.

- During their senior year, each student majoring in English is required to take a standardized English Achievement Test which will be administered and evaluated by the department each spring semester.

Specific Requirements for the Bachelor of Arts in English with Secondary Teacher Certification

ENG Courses		Titles	Credits
ENG	121	Writer's Response*	3
	210	American Literature I	
	and/or	212 American Literature II	3-6
	221	Western World Literature I	
	and/or	222 Western World Literature II	3-6
	231	Literature of England I	
	and/or	232 Literature of England II	3-6
	240	Survey of Ethnic Literature	3
	304	Language Awareness	3
	315/316	Creative Writing	3
	352	English Syntax and Usage	3
	377	Materials and Techniques in Teaching English	3
	381	Drama of Shakespeare	3
	412	Literature for Adolescents	2
	452	History of English Language	2
	493	Senior Seminar	3
Foreign Language			6

First year Foreign Language (6 cr. hr.) **OR** Anthropology 106 (3 cr. hrs.) and Foreign Language 100 (3 cr. hrs.). For International students, only English Composition 101 and 102 sequence is necessary.

Specific Requirements for the Bachelor of Arts in English with Elementary Teacher Endorsement

ENG Courses		Title	Credits
ENG	210	American Literature I	
	and/or	212 American Literature II	3-6
	221	Western World Literature I	
	and/or	222 Western World Literature II	3-6
	231	Literature of England I	
	and/or	232 Literature of England II	3-6
	240	Survey of Ethnic Literature	3
	304	Language Awareness	3
	315/316	Creative Writing	3
	351	Children's Literature	2
	352	English Syntax and Usage	3
	381	Drama of Shakespeare	3
	452	History of the English Language	2
	493	Senior Seminar	3
Foreign Language			6

First year foreign language (6 cr. hrs.) **OR** Anthropology 106 (3 cr. hrs.) and Foreign Language 100 (3 cr. hrs.). For International students, only the English Composition I and II sequence is necessary.

Specific Requirements for the Bachelor of Arts in English

ENG Courses		Title	Credits
ENG	121	Writer's Response*	3
	210	American Literature I	
	or	212 American Literature II	3
	221	Western World Literature I	
	or	222 Western World Literature II	3
	231	Literature of England I	
	or	232 Literature of England II	3
	240	Survey of Ethnic Literature	3
	352	English Syntax and Usage	3
	381	Drama of Shakespeare	3
	315	Creative Writing	
	or	316 Creative Writing	3
	493	Senior Seminar	3
Foreign Language			6

First year foreign language (6 cr. hrs.) **OR** Anthropology 106 (3 cr. hrs.) and Foreign Language 100 (3 cr. hrs.). For International students, only English Composition I and II sequence is necessary.

* English majors can take this class instead of English Composition 102

English minor

The course paper(s) prepared in upper-division English courses 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, and for careers in international organizations, government and business.

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 minor 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		Titles	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	Adv Spanish Grammar & Conversation	3
	302	Adv Spanish Composition & Conversation	3
SPANISH ELECTIVES			14
TOTAL			46

Specific Requirements for the Spanish Major (Bilingual Emphasis)

SPN	101	Beginning Spoken Spanish I	5
SPN	102	Beginning Spoken Spanish II	5
SPN	201	Spanish Grammar & Composition I	3
SPN	202	Spanish Grammar & 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	Adv Spanish Grammar and Conversation	3
SPN	451	Studies in Spanish Linguistics	2
FL	100	Intro to Comparative Linguistics	3
FL	388	Materials and Tech in Teaching FL	2
ENG	222	Western World Literature	3
ENG	304	Language Awareness	3
ENG	340	Advanced Composition	3
ENG	351	Children's Literature	2
ENG	352	English Syntax and Usage	3
TOTAL			50

Other Required Courses (Both Emphases)

ENG	121	The Writer's Response	
or			
ENG	130	Introduction to Literature	3
HIST	101	World Civilization to 1100	
or			
HIST	102	World Civilization from 1100 to 1800	3
TOTAL			6

Specific Requirements for the Spanish Minor

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 *Center for Teaching and Learning* 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.

INTERDISCIPLINARY STUDIES PROGRAM

FACULTY: Ryan

The university Honors Program, which offers a minor, provides intellectually invigorating challenges for academically talented students. In small, interdisciplinary seminars, students explore the natural and 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.

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 24 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	Titles	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 juniors 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; community service projects; 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 one formal presentation;
- 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: Orman
FACULTY: Anderson, Binkly, Ebersole, Miller, Pavlik

The mass communications department supports the polytechnic role and mission of the university by its introduction and use of technology, while maintaining deep traditional ties within the College of Humanities and Social Sciences. The department offers a pragmatic and professionally oriented program aimed at preparing majors for successful careers in the media and related areas while fostering the essential ethical and aesthetic foundations to make those careers meaningful.

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.

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. This central pool of materials that describes the detailed expectations and accountability elements for the mass communications major.
- The mass communications department believes that grades are valid quantitative indicators of student performance. Students' GPAs 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 2.50 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	Titles	Credits
MACOM 101	Media and Society	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
493	Mass Media Seminar	3
TOTAL		24

Specific Requirements for the Emphasis in Telecommunications

MACOM 222	Broadcast News Writing	3
226	Intro to TV Production	4
425	Audience Research Methods	3
MACOM DIRECTED ELECTIVES		10
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 Assessment 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 indicators of success.

MUSIC DEPARTMENT

CHAIR: Beck

FACULTY: Brewer, Cedrone, Chi, Duncan, Markowski, Muller

It is the mission of the music department to instill in students an understanding of both traditional and technological musical approaches as a basis for aesthetic, ethical, social, academic and cultural ways of thinking, creating/composing, improvising, performing and researching. The major leads to a degree of bachelor of arts (BA) with emphasis in music theory (both traditional and jazz), music performance or music education (K-12). Relevant skills, which provide excellent preparation for professional careers in teaching, music industry, performance, composition, multi-media and music technology, are emphasized. The department is accredited by the National Association of Schools of Music.

Departmental Goals

- To educate the student in the fields of music theory, history and technology 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. These 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. The direct application of music technology to teaching and learning music is an example of such a current trend.

Expected Student Outcomes

General Requirements

- Students are required to complete all major and minor courses with a grade of C or better and to maintain a cumulative GPA of 2.50 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 Planning 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 2.50 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 music department, 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 selected students' progress, pre-and post-testing will be maintained by the music department.

Specific Requirements for the Music Major

MUS Courses	Titles	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; Conducting II, Instrumental	4
361/362	Applied Major	4
370-4	Major Ensemble (3 terms)	3
461	Applied Major	2
400	Arranging/Orchestration I	2
	TOTAL	62

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

Specific Requirements for the Music Education Major K-12

MUS 144	Woodwind Class	1
145	Brass Class	1
241	String Class	1
242	Percussion Class	1
246	Voice Class	1
352	Teaching Mus in the Elem School	2
377	Materials & Tech of Teaching Choral Music	2
378	Materials & Tech of Teaching Instrumental Music	2
420	Counterpoint	2
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 *Center for Teaching and Learning* section of this catalog.

Specific Requirements for the Music Performance or Theory Major

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 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	2
OR 350	Conducting II, Instrumental	2
	TOTAL	23

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 before 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: Post-Gorden
FACULTY: Cameron, R. Krinsky, S. Krinsky, Kulkosky, Levy, Madrid, Mo, Schnur, Yescavage

The bachelor's degree program in psychology is designed to prepare students for lifelong learning, thinking, and action as enlightened citizens and ethical and responsible members of the professional community. Although many employment opportunities exist for bachelor's degree holders, students who seek careers as professional psychologists should consider the continuation of their studies at the graduate level.

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. Students have the opportunity to be involved with faculty in applied research activities and/or to apply their knowledge in career-related field experiences.

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, field experience, cooperative education, work experience, or research assistantships.

Expected Student Outcomes

General Requirements

PSYCH Courses	Titles	Credits
PSYCH 100	General Psychology	3
201/201L	Introduction to Data Analysis/Lab	4
301/301L	Intro to Psych Experimentation/Lab	4
401	History and Systems of Psychology	3
PSYCHOLOGY EMPHASIS (15) AND ELECTIVES (6)		21
		TOTAL 35

Educational Psychology Emphasis (Select 15 credits)

PSYCH 220	Drugs and Behavior	2
241	Human Sexuality	2
242	Educational Psychology	2
251	Infancy, Childhood & Preadolescence	3
252	Adolescence, Adulthood & Aging	3
336/336L	Conditioning and Learning/Lab	4
337/337L	Cognitive Psychology/Lab	4
351	Psychology of Exceptional Individual	3
353	Theory & Research in Development	3
381	Principles of Psych Testing	4
465	Behavior Modification	3

Mental Health Emphasis (Select 15 credits)

PSYCH	220	Drugs and Behavior	2
	231	Psychology of Family Behavior	3
	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)

PSYCH	220	Drugs and Behavior	2
	314	Environmental Psychology	3
	315	Organizational & 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
	466	Psychology of Biofeedback	3
	495	Independent Study	1-3

Sports Psychology Emphasis Area (Select 15 credits)

PSYCH	205	Sports Psychology	2
	220	Drugs and Behavior	2
	251	Infancy, Childhood & Preadolescence	3
	252	Adolescence, Adulthood & Aging	3
	311	Theories of Personality	3
	315	Organizational & Administrative Psych	3
	331/331L	Physiological Psychology/Lab	4
	334/334L	Perception/Lab	4
	335/335L	Motivation/Lab	4
	352	Social Psychology	3
	381	Principles of Psychological Testing	4
	464	Counseling & Psychotherapy	3
	465	Behavior Modification	3
	466	Psychology of Biofeedback	3
	494/495	Field Placement/Independent Study	VAR

Specific Requirements for the Psychology Major

- Majors in psychology are required to earn a minimum grade of C in all psychology courses counting toward the major.

- The major in psychology must complete a minimum of 18 credits of upper-division coursework in psychology.
- A maximum of six credit hours of field experience and/or individual projects may be applied toward the 35 hours required for the psychology major.

Specific Requirements for the Psychology Minor

- Minors in psychology take 20 credits of psychology, which must include PSYCH 100 and nine credits of upper-division coursework. Credits in PSYCH 494 and 496 do not count toward the minor. A maximum of three credits for PSYCH 295/495 may count toward the minor if the project undertaken is research based.
- Minors in psychology are required to earn a minimum grade of C in all psychology courses counting toward the minor.

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
- 3) Individual project and evaluation
- 4) Resume including awards, honors and extra-curricular activities
- 5) GRE results
- 6) Major Field Achievement Test results
- 7) Complete transcript
- 8) A term paper or equivalent dealing with a theoretical psychological issue

SOCIOLOGY/SOCIAL WORK/ANTHROPOLOGY DEPARTMENT

CHAIR: Means
FACULTY: Baca, Forsyth, Gonzales, Green, Hughes, Keller, Solis, Wintermute, Wright

The programs in social work, sociology and anthropology are intended to provide students the opportunity to gain knowledge in the discipline areas for their own personal enrichment and to apply that knowledge to career objectives.

Social work is a professional field dedicated to helping individuals, groups, and communities meet basic human needs and enhance their lives. The generalist curriculum, which leads to the bachelor of social work (BSW) degree, prepares students for employment in public and private agencies

and community programs. The applied nature of social work practice builds upon a strong liberal arts base. Course work in the junior and senior year focuses on skill development and its application in a 440-hour field placement. Students can select placements in a wide variety of settings such as hospitals, corrections facilities, child welfare agencies, community agencies, and mental health agencies, to name a few. The program also prepares students for admission to graduate programs, many of which offer USC graduates advanced standing or equivalent credit of up to one year. The program is accredited by the Council on Social Work Education.

The program also offers a collaborative MSW degree with Colorado State University, with a specialization in advanced generalist practice in rural and transitional communities. Further information on the degree may be obtained by contacting the social work program faculty at USC.

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

As an applied program, the major prepares students to work in a wide variety of occupations, including education, government, business, industry and private human service agencies. They are employed in such areas as health care, youth services, drug rehabilitation, law enforcement, corrections, probation, and counseling. The sociology degree is an applied degree, offering students an emphasis in one of three areas: (1) criminology, (2) aging, health and sexuality, and (3) general sociology.

The major in sociology leads to the bachelor of arts (BA) and the bachelor of science (BS). The BS is designed for those pursuing an applied, career-oriented program, while the BA requires a foreign language. Both degrees prepare students for graduate studies and applied careers.

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 to life experiences.

Social Work Program Goals

The primary goals of the social work major are to:

- prepare students for entry-level professional social work practice;
- prepare students for graduate-level social work education;
- 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 2.00 and a minimum GPA of 2.50 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 a minimum of 46 semester credit hours in social work courses (see specific courses listed below).
- Majors are required to spend at least 440 hours of supervised field experience (included in credit hours stated above).
- Majors are required to earn at least a cumulative 2.50 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		Titles	Credits	
SW	100	Introduction to Social Work	3	
SW	201	Human Behavior & Social Environment I	3	
SW	or 151	Intro to Human Development	3	
SW	202	Human Behavior & Social Environment II	3	
SW	210	Techniques of Analysis	3	
SW	320	Human Diversity in Practice	3	
SW	322	Social Work Intervention I	3	
SW	323	Social Work Intervention II	3	
SW	324	Social Work Intervention III	3	
SW	350	Social Welfare Policy & Program Eval	3	
SW	420	Theories of Social Work	3	
PSYCH	or 311	Theories of Personality	3	
SW	481	Field Seminar I	3	
SW	482	Field Seminar II	3	
SW	488	Field Placement I	5	
SW	489	Field Placement II	5	
			TOTAL	46
Electives:				
SW	105	Understanding Human Diversity	3	
	460	Social Work Seminar	3	
	490	Special Projects	3	
	491	Special Topics	3	
	495	Independent Study	3	

Other Requirements

SOC	102	Human Social Behavior	3
PSYCH	100	General Psychology	3
		A course covering Chicano Studies	3
		A course covering Human Biology	2-3
		An economics or political science course	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.
- Periodic 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.

Sociology Program Goals

- Graduates will be able to compare and contrast the major theoretical perspectives that inform modern sociological analysis.
- Graduates will be able to apply 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 sociology, 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 methodologies 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 emphasis areas;
- No grade below a C in sociology courses is acceptable for the major or the minor; and
- Completion of at least 36 credit hours in approved sociology courses.

Specific Requirements for the Sociology Major

SOC Core Courses	Titles	Credits
SOC 102	Human Social Behavior	3
210	Techniques of Analysis	3
310	Social & Cultural Theory	3
TOTAL		9

Criminology Emphasis

SOC	Titles	Credits
203	<i>Required:</i> Criminal Justice System	3
304	Crime and Delinquency	3
405	Sociology Of Law	3
or 420	Advanced Criminology Theory	3
		Electives to be chosen from among:
201	Social Problems (3)	3
204	Community Corrections (3)	3
305	Crime and Women (3)	3
351	Social Deviance (3)	3
353	Penology (3)	3
356	Social Stratification (3)	3
407	Family Violence (3)	3
409	Victimization (3)	3
410	Structural & Elite Crime (3)	3
420	Criminological Theory (3)	3
or 405	Sociology of Law (3)	3
432	Organizational Theory (3)	3
492	Research Methods (3)	3
494	Field Experience (3-9)	3
		Other approved course (3)
TOTAL		27

Aging, Health & Sexuality Emphasis

SOC	Titles	Credits
401	<i>Required:</i> Health, Culture and Society	3
402	Aging, Culture and Society	3
403	Human Sexuality and Social Behavior	3

	Electives to be chosen from among:.....	18
201	Social Problems (3)	
206	Sociology of Gender (3)	
250	Sacred in Culture (3)	
252	Culture and Personality (3)	
407	Family Violence (3)	
352	Social Psychology (3)	
404	Poverty (3)	
492	Research Methods (3)	
494	Field Experience (3-6)	
	Other approved courses.....	3-6
	TOTAL	27

Corrections Emphasis
See faculty adviser

General Emphasis

Based upon student interest, in addition to core requirements, students will select at least 27 credit hours of sociology courses, which may include six hours from anthropology. Courses must be approved by the adviser. At least 12 hours must be upper division, 300/400-level courses.

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 102 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 complete 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 standardized national achievement test.
- 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.

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 sub-cultural 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.

SPEECH COMMUNICATION AND THEATRE DEPARTMENT

CHAIR: O'Leary
FACULTY: Benton, Epstein, Plonkey, Sherman

The department of speech communication and theatre aims to enhance students' knowledge and skills of verbal expression: to acquaint students with significant works of rhetoric and drama; to cultivate their aesthetic appreciation for discourse and for drama; and to develop skill in analyzing, composing, expressing, interpreting, and evaluating discourse and dramatic art. Teaching and speech pathology are two careers that normally grow out of the major, which also is suitable for employment emphasizing communication skills.

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, or theatre will receive the BA degree.

Students in speech communication participate actively in extracurricular activities closely integrated with the academic curriculum. Open to all stu-

dents, 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 which provides experience in technical theatre, 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 103, Speaking and Listening, or its equivalent, is a prerequisite for all courses above the 100-level.

Speech Core Courses	Titles	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	103	Speaking & Listening	3
	115	Speech Activity I	1
	212	Argumentation	2
	221	Interpersonal Communication	3
	241	Organizational Communication	3
	242	Interview & Conference Techniques	3
	250	Intro to Communication Disorders	2
	260	Lang Acquisition and Linguistics	3
	312	Persuasion	2-3
	315	Speech Activity II	1
	376	Directing Speech Activities	2
	377	Speech Education Methods	2
	MACOM	101	Media and Society .....	3
TOTAL			30-31

For teaching endorsement requirements, see the *Center for Teaching and Learning* 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 Disorders	2
	260	Language Acquisition & Linguistics	3
	324/324L	Anatomy of the Head, Neck & Chest/Lab ..	3
	351	Articulation Disorders	2
	352	Voice Disorders	2
	353	Stuttering	2
	361	Phonetics	2
	365	Basic Audiology	3
	451	Aural Rehabilitation	3
	452	Diag & Methods in Speech Pathology	2
	462	Organic Disorders of Speech	3
	463	Language Disorders in Children	2
	469	Clinical Exper in Comm Disorders	1
	SPCOM ELECTIVES	.....	6
PSYCH	100	General Psychology I	3
	251	Infancy, Childhood & Preadolescence	3
	252	Pre-Adol & Adol Psychology	3
	351	Psych of the Exceptional Individual	3
BIOL	362	Intro to Psychopathology	3
	221/221L	Prin of Human Anatomy & Phys/Lab	4
	PHYS	361	Physics of Sound .....	3
TOTAL			58

Theatre Emphasis

Students must complete a minimum of 26 TH hours, as listed below, including at least one hour of Company Class each semester. At least eight of the 26 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.

TH	131	Foundations of Theatre	3
	135	Beginning Acting	3
	216	History of Theatre	3
	331	Play Direction	3
	332	Design for the Theatre	3
	168/368	Company Class	8
ENG	330	Modern European Drama	
or			
ENG	381	Drama of Shakespeare	3
		TOTAL	26

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 the 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 they 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.

Theatre Emphasis

Students must complete a minimum of 26 TH hours, as listed below, including at least one hour of Company Class each semester. At least eight of the 26 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.

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	331	Play Direction	3
	332	Design for the Theatre	3
	168/368	Company Class	8
ENG	330	Modern European Drama	
or			
ENG	381	Drama of Shakespeare	3
		TOTAL	26

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.

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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.

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- 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 the major. The evaluation will be based upon a classroom presentation.
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- A central file of syllabi, assignments, and exams, revealing how they 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.



THE COLLEGE OF SCIENCE AND MATHEMATICS

Dr. Jack A. Seilheimer, dean

Academic Departments	Major	Minors
Biology	Biology (BS)	Biology
Chemistry	Chemistry (BS)	Chemistry
Human Performance/ and Leisure Studies	Kinesiology (BS) Recreation (BS)	Kinesiology Recreation Physical Education Coaching
Mathematics	Mathematics (BA, BS)	Mathematics
Nursing	Nursing (BSN)	
Physics/Physical Science	Physics (BS)	Physics/Geology
	Master of Science in Applied Natural Science (MSANS)	

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

The college's six academic departments and master's degree program are housed in four 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 which provide students with learning opportunities to prepare themselves to live effectively in an increasingly complex science-oriented society.

BIOLOGY DEPARTMENT

CHAIR: Osborn

FACULTY: Dorsch, Farris, Herrmann, Martinez, Murray, Seilheimer, Sublette, Thomas

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 following **pre-professional programs**: pre-chiropractic, pre-forestry, pre-optometry, pre-physical therapy, pre-occupational therapy, pre-pharmacy, 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 a minimum 2.50 grade-point average is guaranteed transfer to the baccalaureate program at CSU. Grades of D and F do not transfer.

Biology majors also may 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 biology 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** is 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 medical technologists.

The **sports medicine** emphasis is an option within the biology major together with a minor in kinesiology. The emphasis requires 73 credit hours. Upon completion of the program, the student is prepared for the National Athletic Trainers Certification Test and a career as a certified athletic trainer. Graduate school options in physical therapy and sports medicine are available to graduates and will enhance their earning potential significantly.

Departmental Goals

- To prepare graduates to become productive, accountable and responsible employees upon entering the work force.
- To prepare graduates to enter graduate or professional 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 BS in biology must have at least a cumulative GPA of 2.00 in the major area. A cumulative GPA of 2.50 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 biology 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) be 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	Titles	Credits
BIOL 171	Career Planning I	1
100/100L	Principals 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	4
or 412/412L	Cellular Biology/Lab	1
471	Career Planning IV	1
493	Seminar	1
Approved Electives		22
TOTAL		48

Other Required Courses

CST 101	Computers and You	2
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
PHYS 201/201L	Principles of Physics I/Lab I	4
202/202L	Principles of Physics II/Lab II	4
MATH 121	College Algebra	4
221	Applied Calculus	5
TOTAL		39

Institutional and General Education Courses

The general education requirement for graduation includes a total of 42 semester hours in three categories.

Skills Components		
English Composition I		3
English Composition II		3
Speech		3
Computer Usage		2
Mathematics		3
Knowledge Component		
(as listed on page 301, K ¹ through K ⁶)		25
Upper-division Requirement		3
General Education Total		42

Total Credit Hours: 129

Specific Requirements for the Biology/Secondary Certification Option

BIOL 132	Human Heredity & Birth Defects	2
162	Personal Health	3
201/201L	Botany/Lab	5
202/202L	Zoology/Lab	5
206/206L	Introduction to Microbiology/Lab	4
221/221L	Prin Human Anatomy & Physiology/Lab	4

280	Biotechnology	3
353/353L	Ecology/Lab	5
377	Methods & Materials in Teaching Biol	2
471	Career Planning IV	1
493	Seminar	1
TOTAL		35

Other Required Courses

CHEM 112/112L	Intro to Organic & Biochem/Lab	4
121/121L	General Chemistry I/Lab I	5
122/122L	General Chemistry II/Lab II	5
GEOL 101/101L	Earth Science/Lab	4
PHYS 110	Astronomy	3
201/201L	Principles of Physics I/Lab I	4
202/202L	Principles of Physics II/Lab II	4
CST 101	Computers and You	2
MATH 121	College Algebra	4
221	Applied Calculus	5
PSYCH 100	General Psychology	3
151	Human Development	3
ED 210	Human Growth and Development	3
202	Foundation of Education	3
435	Classroom Management	3
460	Educational Media & Technology	3
461	Atypical Stu in Secondary School	3
488	Student Teaching Secondary	15
IST 345	Career Education	2
RDG 425	Teaching Reading in Content Areas	2
TOTAL		80

Institutional and General Education Courses

The general education requirement for graduation includes a total of 42 semester hours in three categories.

Skills Components		
English Composition I		3
English Composition II		3
Speech		3
Computer Usage		2
Mathematics		3
Knowledge Component		
(as listed on page 301, K ¹ through K ⁶)		25
Upper-division Requirement		3
General Education Total		42

Total Credit Hours: 157

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
	100/100L	Principles of Biology/Lab	4
	201/201L	Botany/Lab	5
	202/202L	Zoology/Lab	5
	206/206L	Introduction to Microbiology/Lab	4
	471	Career Planning IV	1
		TOTAL	31
Other Required Courses			
GEOL	101/101L	Earth Science/Lab	4
PHYS	110	Astronomy	3
	201/201L	Principles of Physics I/Lab I	4
CHEM	111/111L	Principles of Chemistry/Lab	4
	112/112L	Intro to Organic & Biochemistry/Lab	4
MATH	360	Elementary Concepts Math I	3
	361	Elementary Concepts Math II	3
CST	101	Computers and You	2
PSYCH	100	General Psychology I	3
	151	Intro to Human Development	3
ENG	251	Traditional Grammar Theory	2
or			
ENG	352	English Syntax and Usage	3
	351	Children's Literature	2
ED	202	Foundation of Education	3
	412	Teaching the Special Child	3
	413	Teaching Soc Studies In Elem School	2
	414	Teaching Elementary Science & Health	2
	417	Teaching Math in Elementary School	2
	435	Classroom Management	3
	460	Educational Media and Technology	3
	487	Student Teaching Elementary	15
HP	232	Advanced First Aid	2
	322	Elementary School Physical Education	2
ART	377	Prin of Elementary Art Education	1
MUS	351	Prin of Music in the Elem School	1
RDG	301	Rdg & Lang Arts in the Elem School	3
	450	Diag & Remediation of Rdg Problems	3
BBE	401	Teaching the Limited Eng Prof Stu	2
		TOTAL	84-85

Institutional and General Education Courses

The general education requirement for graduation includes a total of 42 semester hours in three categories.

Skills Components	
English Composition I	3
English Composition II	3
Speech	3
Computer Usage	2
Mathematics	3
Knowledge Component	
(as listed on page 301, K ¹ through K ⁹)	25
Upper-division Requirement	3
General Education Total	42

Total Credit Hours 157 - 158

Specific Requirements for the Biology/Chemistry Double Major

BIOL	171	Career Planning I	1
	201/201L	Botany/Lab	5
	202/202L	Zoology/Lab	5
	301/301L	General Microbiology/Lab	5
	341/341L	Vertebrate Physiology/Lab	1
or	412/412L	Cellular Biology/Lab	4
	471	Career Planning IV	1
	493	Seminar	1
Approved Electives			22
		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	2
		TOTAL	21

Institutional and General Education Courses

The general education requirement for graduation includes a total of 42 semester hours in three categories.

Skills Components	
English Composition I	3
English Composition II	3
Speech	3
Computer Usage	2
Mathematics	3
Knowledge Component	
(as listed on page 301, K ¹ through K ⁶)	25
Upper-division Requirement	3
General Education Total	42

Total Credit Hours 146

Specific Requirements for the Biology/Medical Technology Option

BIOL	171	Career Planning I	1
	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
BIOL	471	Career Planning IV	1
	472/472L	Radiation Biology/Lab	4
	482/482L	Parasitology/Lab	3
	493	Seminar	1
Approved Electives		.....	16
TOTAL			58

Other Required 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
	411	Biochemistry I	3
CST	101	Computers and You	2
MATH	124	Precalculus Math	5
PHYS	201/201L	Principles of Physics I/Lab I	4
	202/202L	Principles of Physics II/Lab II	4
TOTAL			43

Institutional and General Education Courses

The general education requirement for graduation includes a total of 42 semester hours in three categories.

Skills Components	
English Composition I	3
English Composition II	3
Speech	3
Computer Usage	2
Mathematics	3
Knowledge Component	
(as listed on page 301, K ¹ through K ⁶)	25
Upper-division Requirement	3
General Education Total	42

Total Credit Hours: 143

Specific Requirements for the Biology/Environmental Health Option

BIOL	171	Career Planning I	1
	201/201L	Botany/Lab	5
	202/202L	Zoology/Lab	5
	221/221L	Prin of Human Anatomy & Phys/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		.....	11
TOTAL			66-67

Other Required Courses

CHEM	112/112L	Intro to Organic & Biochem/Lab	4
	121/121L	General Chemistry I/Lab I	5
	122/122L	General Chemistry II/Lab II	5
CST	101	Computers and You	2
MATH	156	Introduction to Statistics	3
	221	Applied Calculus: An Intuitive Approach	
or			
MATH	126	Calculus and Analytic Geometry I	5
PHYS	201/201L	Prin of Physics I/Lab I	4
TOTAL			28

Institutional and General Education Courses

The general education requirement for graduation includes a total of 42 semester hours in three categories.

Skills Components		
English Composition I	.....	3
English Composition II	.....	3
Speech	.....	3
Computer Usage	.....	2
Mathematics	.....	3
Knowledge Component		
(as listed on page 301, K ¹ through K ⁸)	.....	25
Upper-division Requirement	.....	3
General Education Total		42

Total Credit Hours: 136-137

Specific Requirements for the Biology/Biotechnology Option

BIOL	171	Career Planning I	.....	1
	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			.....	12
TOTAL				54-55

Other Required 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
	411	Biochemistry I	.....	3
	412/412L	Biochemistry II/Lab II	.....	4
MATH	124	Precalculus Math	.....	5
	126	Calculus and Analytic Geometry I	.....	5
PHYS	201/201L	Principles of Physics I/Lab I	.....	4
	202/202L	Principles of Physics II/Lab II	.....	4
CST	101	Computers and You	.....	2
TOTAL				52

Institutional and General Education Courses

The general education requirement for graduation includes a total of 42 semester hours in three categories.

Skills Components		
English Composition I	.....	3
English Composition II	.....	3
Speech	.....	3
Computer Usage	.....	2
Mathematics	.....	3
Knowledge Component		
(as listed on page 301, K ¹ through K ⁸)	.....	25
Upper-division Requirement	.....	3
General Education Total		42

Total Credit Hours: 148-149

Specific Requirements for the Biology/Sports Medicine Option

BIOL	112	Nutrition	.....	3
	162	Personal Health	.....	3
	171	Career Planning I	.....	1
	100/100L	Principals of Biology/Lab	.....	4
	220	Medical Terminology	.....	1
	201	Botany *	.....	3
	202	Zoology *	.....	3
	223/223L	Human Physiology & Anatomy I/Lab I	.....	4
	224/224L	Human Physiology & Anatomy II/Lab II	.....	4
	301/301L	General Microbiology/Lab	.....	5
	320	Emergency Medical Technician	.....	6
	341/341L	Vertebrate Physiology/Lab	.....	4
	351/351L	Genetics/Lab	.....	4
	471	Career Planning IV	.....	1
	493	Seminar	.....	1
TOTAL				47

Other Required Courses

CHEM	111/111L	Principles of Chemistry/Lab **	.....	4
	112/112L	Intro to Organic Biochem/Lab **	.....	4
PHYS	201/201L	Principles of Physics I/Lab I	.....	4
	202/202L	Principles of Physics II/Lab II	.....	4
MATH	121	College Algebra	.....	4
	156	Introduction to Statistics	.....	3
CST	101	Computers and You	.....	2
TOTAL				25

Kinesiology Minor Total 20

* Students who intend to use this track for pre-medicine should understand that they will be required to take Biology 201L and 202L.

**Students who intend to use this track for pre-medicine should understand that a full year each of General Chemistry and Organic Chemistry is required.

Institutional and General Education Courses

The general education requirement for graduation includes a total of 42 semester hours in three categories.

Skills Components		
English Composition I	3	
English Composition II	3	
Speech	3	
Computer Usage	2	
Mathematics	3	
Knowledge Component		
(as listed on page 301, K ¹ through K ⁶)	25	
Upper-division Requirement	3	
General Education Total	42	

Total Credit Hours 135

Specific Requirements for the Professional Biology Minor

BIOL	100/100L	Principals 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 biology department actively encourages student participation in such activities.

Outcomes Assessment Activities**A) Biology Majors**

Assessment of students' 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; and
- scores from appropriate examinations such as the GRE, MCAT, DAT, ETS, College Base.

B) Biology Minors

- The faculty of the biology department believes 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: Wilkes

FACULTY: Bonetti, Druelinger, Hammer, Mahan, Proctor, Saul

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 for pre-professional areas such as pre-medicine, pre-dentistry and pre-veterinary medicine.

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 program 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 biotechnology, 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 2.00 or better in their chemistry courses.
- Proficiency in physics, math and computer science is essential for understanding and applying chemical principles; therefore, graduates must complete approved math, physics and computer science courses such that the overall GPA in those areas is 2.00 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 2.00 or better.

- 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 credit hours required at USC.
- Students will be required to successfully complete American Chemical Society exams in general chemistry, organic chemistry and analytical chemistry during the course of the chemistry degree curriculum.
- Students will be required to take an exit examination during their senior year, covering the undergraduate chemistry curriculum.
- Chemistry graduates are expected to:
 - a) understand the concept of and be able to apply the scientific method to problem solution;
 - b) understand classifications of chemical compounds, general reaction types and quantitative aspects of stoichiometry as applied to chemical reactions;
 - c) be able to apply basic knowledge of related fields such as mathematics and physics to problem solving, methods of analysis and use of numerical data in the chemical sciences;
 - d) demonstrate a knowledge of basic laboratory skills, methods and equipment used in chemistry for observation and analysis of chemical systems;
 - e) be able to read, think and write critically and review current literature in the chemical sciences; and
 - f) exhibit a comprehensive knowledge of the fundamental theories, concepts and skills necessary in the chemical sciences.

Specific Requirements

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

CHEM Courses	Titles	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 Courses

The general education requirement for graduation includes a total of 42 semester hours in three categories.

Skills Component	
English Composition I	3
English Composition II	3
Speech	3
Computer Usage	2
Mathematics	3
Knowledge Component	
(as listed on page 301, K ¹ through K ³)	25
Upper-division Requirement	3
General Education Total	42

Requirements for the specific options

Basic Chemistry Option

CHEM		Required Chemistry Core	36
323		Experimental Physical Chemistry	2
421		Advanced Inorganic Chemistry	
or 221/221L		Inorganic Chemistry/Lab	3
493		Seminar	1
		TOTAL	42

Other Required Courses

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

Institutional and General Education Courses	42
APPROVED MINOR	20
FREE ELECTIVES	9
TOTAL	71

Total Credit Hours: 136

Specific Requirements for the ACS Certified Option

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

Other Required Courses

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

Institutional and General Education	42
FREE ELECTIVES	3
APPROVED MINOR	20
TOTAL	65

Total Credit Hours: 139

Also required is a minimum of one semester of independent study consisting of a laboratory-based research project.

Specific Requirements for the Biochemistry Option

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

Other Required Courses

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

Institutional and General Education	42
Biology Minor	23
Approved Electives	6
TOTAL	71

Total Credit Hours: 137

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

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 .....42		
Free Electives .....4		
Approved Second Major .....Minimum 38		
	TOTAL	84
Total Credit Hours: 136-138		

Specific Requirements for the Engineering/Chemistry Option

Required Chemistry Core		TOTAL	36
Other Required Courses			
MATH	126	Calculus and Analytic Geometry I	5
	224	Calculus and Analytic Geometry II	5
PHYS	221/221L	General Physics I/Lab I	5
	222/222L	General Physics II/Lab II	5
CST	105	FORTTRAN	3
EN	103	Introduction to Engineering	2
	107	Engineering Graphics	2
	211	Engineering Mechanics I	3
	212	Engineering Mechanics II	3
	231/231L	Circuit Analysis I/Lab I	5
	321	Thermodynamics I	3
	324/324L	Mechanics of Materials I/Lab I	4
	342	Engineering of Manufacturing Processes	5
TWO OF THE FOLLOWING THREE COURSES:			
EN	343	Industrial Engineering Economy	3
	443	Quality Control and Reliability	3
	471	Engineering Operations Research	3
	TOTAL	56	
Institutional and General Education			42
Free Electives			3
	TOTAL	45	
Total Credit Hours: 137			

Specific Requirements for the Chemistry/Teacher Certification Option

Required Chemistry Core		36	
CHEM	221/221L	Inorganic Chemistry/Lab	3
CHEM	377	Methods & Techniques	2
CHEM	425	Environmental Chemistry	3
	TOTAL	44	

Other Required Courses

BIOL	121	Environmental Conservation	4
	161	Personal Health	3
	100/100L	Principles 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	2
MATH	221	Applied Calculus	5
or			
MATH	126	Calculus and Analytic Geometry I	5
PSYCH	100	General Psychology	3
	151	Human Development	3
ED	202	Foundations of Education	3
	435	Classroom Management	3
	460	Educational Media & Technology	3
	461	Atypical Stu in the Secondary School	2
	488	Student Teaching Secondary	15
IST	345	Career Education	2
RDG	425	Teaching Reading in Content Areas	2
		TOTAL	69-71
Institutional and General Education			42
Total Credit Hours: 155-157			
<i>Specific Requirements for the Chemistry Minor</i>			
CHEM	121/121L	General Chemistry I/Lab I	5
	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); the senior exit exam; 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 faculty will evaluate each file for advisement and reference purposes. Upon graduation, students will have access to their files when requested; however, the file will be maintained for a period of five years in order to track the careers of graduates.

HUMAN PERFORMANCE AND LEISURE STUDIES DEPARTMENT

CHAIR: Aguilar
FACULTY: Banks, Cockrell, Gregorich

The major in kinesiology leads to the degree of bachelor of science (BS). Minors in kinesiology, 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 physical education. 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, 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

- To prepare graduates to become productive, accountable and responsible employees upon entering the work force.
- To prepare graduates to enter graduate or professional 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 in teaching physical education.

Expected Student Outcomes*General Requirements*

Majors are required to:

- complete an approved program of courses which is composed of a minimum of 48 credit hours with a cumulative GPA of 2.50 or higher;
- earn a minimum grade of C in all major courses;
- complete a minor or approved area of concentration with a cumulative GPA of 2.00 or higher;
- earn a cumulative GPA of 2.00 or higher in the required English/speech communication courses;
- 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
- complete a computer-literacy course or present documented evidence of competency in computer application.

Kinesiology graduates are expected to:

- a) demonstrate understanding of the philosophy and historical basis of the kinesiology/physical education discipline;
- b) demonstrate skills and knowledge of specific activities such as team sports, individual and dual sports, dance, tumbling, perceptual motor learning, elementary activities and outdoor pursuits;
- c) exhibit knowledge of the structure and function of the human organism both at rest and during movement through developmental, anatomical, mechanical, psychological and physiological perspectives;
- d) exhibit ability to read and interpret scientific journal articles concerned with human movement and performance with an understanding of the scientific methods, statistics and design of the studies;
- e) demonstrate knowledge and apply the skills of sound pedagogical principles and techniques significant to physical education. Identify significant concepts of management in the teaching environment;

- f) display knowledge and skill related to first aid and care and prevention of injuries occurring from human movement/sport;
- g) demonstrate knowledge of elementary and secondary physical education programs including adapted physical education with respect to current research and contemporary trends; and
- h) identify knowledge and behaviors significant to coaching effectiveness along with general principles of kinesiology applicable in the athletic environment. Identify significant concepts of leadership and management relative to coaching.

Specific Requirements for the Kinesiology Major

KIN Courses	Titles	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 Fitness Activities	3
	246 S&T of Tr & Field, Bsktball & Softball	3
	247 S&T of Tumbling	1
	248 S&T of Ind & Dual Spts (Golf, Tennis, Racquetball & Badminton)	3
	249 S&T of Ropes Course Leadership	1
	322 Elementary School PE	2
	342 Training Room Methods	2
	343 Measurement & Evaluation in PE	2
	461 Program Administration in PE & RA	3
	465 Adapted PE	2

Two courses must be selected from among the following:

276	Water Safety Instructor Certification	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	48

For the teaching endorsement requirements, see the *Center for Teaching and Learning* section of this catalog.

Co-curricular Requirements

The faculty of the human performance and leisure studies department believe that graduates must have co-curricular experiences. These may be either on- or off-campus activities and may be used to develop leadership and interpersonal skills.

Outcomes Assessment Activities

In addition to the assessment which is inherent in the general requirements, each kinesiology major must prepare a portfolio which includes:

- academic transcripts, resume, and completed placement file;
- samples of research papers as well as writing proficiency from reports required in human performance and kinesiology courses;
- a record of instructor comments of peer teaching performances; and
- documentation and evidences of co-curricular activities.

Recreation Program Goals

- To prepare graduates to become productive, accountable and responsible employees upon entering the work force;
- To prepare graduates to enter graduate schools; and
- To provide students with a broad-based theoretical foundation complemented by extensive experiential learning exercises that allow individual observations, inferences and hands-on experience in the discipline of recreation.

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 2.50 or higher;
- earn a minimum grade of C in all major courses;
- complete a minor or approved area of concentration with a cumulative GPA of 2.00 or higher;
- earn a cumulative GPA of 2.00 or higher in the required English/speech communication courses;
- 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

- complete a computer-literacy course or present documented evidence of competency in computer application.

Recreation graduates are expected to demonstrate:

- knowledge of the history and philosophy of leisure, recreation and parks in western society;
- an awareness of the scope of the leisure services delivery spectrum, including public, private and non-profit sector service providers in the major specializations of leisure, recreation and parks;
- an understanding of and an ability to conduct the recreation program planning process, including client assessment, setting goals and objectives, activity analysis and selection, program management and evaluation;
- skills and understanding of the leadership functions of recreation professionals, including interpersonal communication, trust building, power and influence, interpersonal conflict and its resolution, teaching and transference, and decision making;
- an awareness of the special populations that recreation programs and resources must accommodate; the implications of programming for each population, and specific agencies and legislation currently providing for each population;
- knowledge of the principal federal and state agencies providing parks and resource-based recreation opportunities in America, including their primary management policies and challenges;
- perspectives and competencies in applying principles of management to leisure services and resources, including the organization of agencies; personnel, fiscal and risk management and marketing;
- an understanding of philosophies, history, curricular elements and settings for outdoor education in America; and
- an understanding of current trends and issues facing the profession of leisure recreation and parks, an ability to read and interpret professional journal articles, and awareness of the primary professional organizations representing the field.

Specific Requirements for Recreation Majors

HP	233	Hist & Prin PER	3
REC	340	Recreation Program Planning	3
	350	Leader & Supervision in Recreation	3
	389	Practicum	3
	480	Recreation for Special Populations	3
	481	Outdoor Recreation	3
	482	Recreation Management	3
	493	Seminar	2
	498	Internship	9

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

Allied	9
Methods	13
	TOTAL
	54

Co-curricular Requirements

The faculty of the 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, resume, and a completed placement file;
- three professional papers required in major courses which demonstrate writing proficiency; and
- documented evidence of successful participation in work, clubs, student organizations, or other activities related to the major field of study.

Program Goals for Physical Education Minor

- To provide a minor which complements a major course of study to enhance career opportunities for the graduate.
- To enhance preparation for further professional study, knowledge and activities included in physical education programs.

Expected Student Outcomes

General Requirements

Physical Education minors will:

- complete a minimum of 20 credit hours, with a cumulative GPA of 2.50 or higher in approved minor courses;
- earn a minimum grade of C in all minor courses;
- earn a cumulative GPA of 2.00 or higher in the required English/speech communication courses;
- present documented evidence of successful writing skills as indicated by written assignments in academic course work;
- have gained an understanding of the philosophical and historical base of physical education as a discipline; and
- have gained competencies related to skills, knowledge and activities included in physical education programs.

Specific Requirements for the Physical Education Minor

HP Courses		Titles	Credits
HP	232	Advanced First Aid	2
	233	History and Principles of PER	3
	322	Elementary School PE	
		or	
	378	Methods in Physical Education	2
	461	Program Administration in PE & RA	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 Fitness Activities	3
	246	Skills & Tech of T & F, Basketball & Softball	3
	247	Skills & Tech of Tumbling	1
	248	Skills & Tech of Ind & Dual Sports	3
		TOTAL	20

Co-curricular Requirements

Physical education minors 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 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 Minor

- To provide a minor which complements a major course of study to enhance career opportunities for the graduate.
- To enhance preparation for further professional study.

Expected Student Outcomes

General Requirements

Coaching minors will:

- complete a minimum of 21 credit hours, with a cumulative GPA of 2.50 or higher in approved minor courses;
- earn a minimum grade of C or higher in minor courses;
- earn a cumulative GPA of 2.00 or higher in the required English/speech communication courses; and

- present evidence of successful writing skills as indicated by written assignments in academic course work.

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.

Specific Requirements for the Coaching Minor

Courses		Titles	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 Administration In PE & RA	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

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 Minor

- To provide a minor which complements a major course of study to enhance career opportunities for the graduate.
- To enhance preparation for further professional study.

Expected Student Outcomes

General Requirements

Recreation minors will:

- complete a minimum of 20 credit hours, with a cumulative GPA of 2.50 or higher in approved minor courses;
- earn a minimum grade of C or higher in minor courses;
- earn a cumulative GPA of 2.00 or higher in the required English/speech communication courses; and
- present documented evidence of successful writing skills as indicated by written assignments in academic course work.

Specific Requirements for the Recreation Minor

Courses	Titles	Credits
REC 340	Recreation Program Planning	3
350	Leadership and Supervision in Rec	3
389	Practicum	3
481	Outdoor Recreation	3
482	Recreation Management	3

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

TOTAL 21

Co-curricular Requirements

Recreation minors 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.

Program Goals for Kinesiology Minor

- To provide a minor which complements a major course of study to enhance career opportunities for the graduate.
- To enhance preparation for further professional study.

Expected Student Outcomes

General Requirements

Kinesiology minors will:

- complete 20 credit hours, with a cumulative GPA of 2.50 or higher in approved minor courses;

- earn a minimum grade of C in all minor courses;
- earn a cumulative GPA of 2.00 or higher in required English/speech communication courses; and
- present evidence of successful writing skills as indicated by written assignments in academic course work.

Specific Requirements for the Kinesiology Minor

KIN Courses	Titles	Credits
KIN 254	Anatomical Kinesiology	2
364	Mechanical Kinesiology	2
442	Physiological Kinesiology	2
258	Maturational Kinesiology	
or		
262	Psychological Kinesiology	2
		TOTAL <u>8</u>

The student must select one of the following blocks:

Athletic Training Block

HP 232	Advanced First Aid *	2
342	Training Room Methods	2
442	Advanced Athletic Training	3
494	Field Experience	5
		TOTAL <u>12</u>

Professional Block

HP 231	CPR *	1
232	Advanced First Aid *	2
461	Program Administration in PE & RA	3
465	Adapted PE	2
494	Field Experience	4
		TOTAL <u>12</u>

Total Credit Hours for the Kinesiology Minor 20

*May substitute BIOL 320 EMT for HP 231 and HP 232

Co-curricular Requirements

Kinesiology minors must show successful co-curricular experiences that complement and reinforce the kinesiology minor.

Outcomes Assessment Activities

In addition to the evaluation inherent in the general requirements, kinesiology 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 kinesiology.

MATHEMATICS DEPARTMENT

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

The major in mathematics leads to the degrees of bachelor of arts (BA) or bachelor of science (BS). A flexible curriculum allows students to prepare for graduate school, for teaching careers, or for employment in areas that require mathematics (such as actuarial science, computer science, engineering, and statistics). Faculty advisers work individually with mathematics majors and minors to design their programs of study. A list of advisers is available in the departmental office.

Students need to be aware that many mathematics courses have prerequisites. Thus, certain courses within each program must be taken *in a particular order*.

Departmental Goals

- To provide students with high-level problem solving skills of a quantitative and statistical nature based on logical reasoning.
- To provide students with an understanding of the applications of mathematics in other areas such as computer science, economics and management, engineering, physical and life sciences.
- To prepare graduates for further study in graduate school.
- To prepare graduates for productive careers in the business world or in teaching.

Expected Student Outcomes

General Requirements

- all mathematics majors must complete the mathematics core curriculum: MATH 126, 207, 224, 307, 320, 325, 327, 350, 421, and 495. Majors are expected to complete courses in the core numbered above MATH 325 at USC;
- all majors are required to complete a senior research project under the guidance of a faculty member;
- mathematics majors and minors must complete the mathematics courses in their program with grades of C or better.
- all majors are required to complete an approved two-semester sequence in a laboratory science (BIOL 100/100L and 201/201L, or BIOL 100/100L and 202/202L, or CHEM 121/121L and 122/122L, or PHYS 221/221L and 222/222L); and
- mathematics majors must demonstrate proficiency in a computer language.

Specific Requirements for the Mathematics Major

MATH Courses	Titles	Credits
MATH 126	Calculus and Analytic Geo I	5
207	Matrix & Vector Alg with Appl	2
224	Calculus & Analytic Geo II	5
307	Intro to Linear Algebra	3
320	Intro to Mathematical Thought	3
325	Intermediate Calculus	3
327	Intro to Algebraic Systems	3
350	Probability	3
or 256	Probability for Engineers & Scientists	3
356	Stats for Engineers & Scientists	3
421	Advanced Calculus I	3
495	Independent Study (Sr research)	1
Upper-Division Electives (Excluding MATH 360, 361, 377)		9
TOTAL		40-43

Other Requirements

LABORATORY SCIENCE SEQUENCE	8
COMPUTER PROGRAMMING	3
TOTAL	11

Institutional and General Education

The general education requirement for graduation includes a total of 42 semester hours in three categories.

Skills Component	
English Composition I	3
English Composition II	3
Speech	3
Computer Usage	2
Mathematics (waived)	3
Knowledge Component	
(as listed on page 301, K ¹ through K ⁶)	25
Upper-division Component	3
General Education Total	42

Total Credit Hours: 93-96

Specific Requirements for the Mathematics/Secondary Education Endorsement

MATH 126	Calculus & Analytic Geo I	5
207	Matrix & Vector Alg with Appl	2
224	Calculus & Analytic Geo II	5
307	Intro to Linear Algebra	3
320	Intro to Mathematical Thought	3
325	Intermediate Calculus	3
327	Intro to Algebraic Systems	3
330	Intro to Higher Geometry	3

MATH	256	Probability for Engineers & Scientists	3
	or 350	Probability	3
	356	Stats for Engineers & Scientists	3
	377	Mat & Tech of Teaching	
		Secondary School Math	3
	419	Number Theory	3
	421	Advanced Calculus I	3
	463	History of Mathematics	3
	495	Independent Study (Sr research)	1
		TOTAL	46

Other Requirements

PSYCH	100	General Psychology I	3
	151	Intro to Human Development	3
ED	102	Teaching as a Career (recommended)	1
	202	Foundations of Education	3
	435	Classroom Management	3
	460	Lab in Education	3
	461	Atypical Stu in the Secondary Sch	3
	488	Student Teaching Secondary	15
IST	345	Career Education	2
RDG	425	Teaching Reading in Content Areas	2
		TOTAL	38

Institutional and General Education

The general education requirement for graduation includes a total of 42 semester hours in three categories.

Skills Component

English Composition I	3
English Composition II	3
Speech	3
Computer Usage	2
Mathematics (waived)	3

Knowledge Component

(as listed on page 301, K ¹ through K ⁸)	25
Upper-division Component	3

General Education Total 42

Total Credit Hours: 126

Specific Requirements for the Minor in Mathematics

MATH	126	Calculus and Analytic Geometry I	5
MATH	224	Calculus and Analytic Geometry II	5
An approved elective plus 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	Intro to Mathematical Thought	3
	327	Introduction to Algebraic Systems	3
	330	Introduction to Higher Geometry	3
	377	Matl & Tech of Teaching Sec Sch Math	3
		TOTAL	22

Specific Requirements for the Mathematics Endorsement Program

This program is offered to individuals who have already obtained Colorado teacher certification. The courses listed below are required in addition to those 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
	419	Number Theory	3
	463	History of Mathematics	3
Approved Computing Course			3
		TOTAL	17

Co-curricular Requirements

Students have the opportunity to broaden and reinforce their academic experience through participation in a variety of co-curricular activities. All students are encouraged to join the USC Math Club. Many students serve as tutors in the Math Learning Center.

Outcomes Assessment Activities

- Faculty advisers meet individually with students on a regular basis to help students plan schedules and to discuss the students' progress toward educational and career goals. Advisers maintain a record of each student's performance in his/her program of study.
- During the senior year, each major takes the Mathematics Field Achievement Test, the results of which give some measure of a student's achievement level in comparison with students at other schools throughout the country.
- Each mathematics major is required to complete a senior research project under the close supervision of a faculty member. Students must submit a formal written report on the results of the research. The report is to be prepared using a word processor and should not exceed 2500 words. The research report should display the student's abilities to work independently, to think logically and creatively, and to express themselves in a clear and concise fashion.

NURSING DEPARTMENT

CHAIR: Farley
FACULTY: Brown, Janos, Johnston, Nickolaus, Sabo, Steen

The major in nursing leads to a bachelor of science in nursing (BSN) degree and prepares the graduate to write the NCLEX licensing examination. Success in passing the NCLEX qualifies the graduate for entry into professional nursing practice as a generalist in a variety of health care 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. Students enter the nursing sequence in the second semester of their sophomore year and must complete courses in a specified sequence. Course work in nursing focuses on the preparation of entry-level professional nurses who are able to provide caring and competent nursing care to clients based on the utilization of the nursing process in facilitating fulfillment of human needs. Learning experiences are grounded in multi-theoretical perspectives which integrate diverse nursing roles and emphasize professional ethical accountability.

All required courses in nursing, general education, and academic minor or area 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. Nursing courses must be repeated within one academic year from the date of unsatisfactory grades. Students who are not in continuous enrollment in nursing courses must reapply for admission.

Admission to the university does not imply acceptance to the nursing major. Applications to the nursing program may be obtained in the nursing department or the Office of Admissions. Students are admitted to the nursing major based on grade-point average and successful completion of prerequisite courses. Nursing majors are assigned to a nursing faculty member for academic advisement. Requests for advanced placement through transfer or equivalent credit must be submitted in writing to the nursing department.

Registered Nurses with an associate degree or a diploma in nursing from a Colorado school or an NLN-accredited school may articulate to the baccalaureate nursing program without testing in nursing content areas. To earn the BSN degree, students complete non-nursing requirements and the equivalent of one year of full-time nursing course work.

Department Goals

- to provide quality learning experiences for nursing students which prepare graduates for practice as competent, caring, ethical and accountable entry-level professional nurses;
- to maintain approval of the Colorado State Board of Nursing and National League for Nursing accreditation;



- to maintain the program curricula congruent with the expectations of health professional employers, accreditation bodies, needs of students and the resources of the university as evidenced by program adaptations based upon review of evaluation data and recommendations of the Nursing Department Advisory Board;
- to prepare associate degree and diploma RNs for baccalaureate nursing practice consistent with the Colorado Nursing Articulation model; and
- to collaborate with local and regional health care agencies in joint projects related to education of professional nurses.

Expected Student Outcomes

General Requirements

- Practice nursing, using a human needs framework incorporating multi-disciplinary theories.
- Demonstrate competence as a beginning nurse practitioner in providing nursing care to individuals, families, groups and communities.
- Employ critical thinking utilizing the nursing process to manage client care.
- Incorporate caring (commitments, compassion, conscience, competence, confidence) into professional nursing practice.
- Integrate nursing roles for professional nurses as defined in the Colorado Nursing Articulation Model.
- Facilitate effective, purposeful communication between self and others (peers, clients and other professionals) to promote common goals in diverse health care settings.
- Evaluate the influence of the complex interactions of multiple environmental factors of the foundation of health care plans to meet the health and safety needs of individuals, families and communities.
- Demonstrate behaviors which reflect professional ethics and accountability congruent with the American Nurses' Association (ANA) Code of Ethics and Social Policy Statement and state nurse practice acts in the provision of non-discriminatory nursing care to clients.

Specific Requirements for the Nursing Major

NSG Courses	Credits	Titles	Credits
NSG 231	4	Intro to Professional Nursing	4
232/232L	6	Fundamentals of Nursing/Lab	6
270	3	Nursing Pathophysiology	3
302/302L	4	Health Assessment/Lab	4
312/312L	6	Nsg Care of Childbearing Families/Lab	6
322/322L	6	Nursing Care of the Adult I/Lab I	6
332/332L	6	Nursing Care of Children & Adol/Lab	6

351	Research in Nursing	3
382/382L	Psychiatric Nursing/Lab	6
401	Professional Issues in Nursing	2
410/410L	Nursing Care of the Adult II/Lab II	6
442/442L	Community and Family Nursing/Lab	7
451	Nursing Management	3
452/452L	Nursing Process: Synthesis/Lab	6
TOTAL		68

Registered Nurse Articulation

NSG	307	Health and Disease Systems	3
	309	Professional Nursing Practice	4
	311	Advanced Concepts in Nursing	3
	302/302L	Health Assessment/Lab	4
	351	Research in Nursing	3
	401	Professional Issues in Nursing	2
	442/442L	Community and Family Nursing/Lab	7
	451	Nursing Management	3
	452/452L	Nursing Process: Synthesis/Lab	6
TOTAL		35	

Institutional and General Education

Courses required for admission into the Nursing program.

Skills Component

English Composition I	3
English Composition II	3
Speech	3
Computer Usage	3
Math Statistics	3

Knowledge Component

Psychology 101	3
International/Multicultural Exp (K ³)	3
Human Development (K ⁴)	3
Social Systems (K ⁶)	3
Human Anatomy and Physiology/Lab (Biol 223/223L, 224/224L)	8
Principles of Chemistry/Lab (Chem 111/111L)	4
Intro to Organic & Biochemistry/Lab (Chem 112/112L)	4
Intro to Microbiology (Biol 206/206L)	4

Additional requirements for graduation

Visual and Performing Arts (K ¹)	3
Literature (K ²)	3
Historical Consciousness (K ⁴)	3
Upper Division Elective	3
Upper Division General Education III	3

General Education Total 62

Total Credit Hours: 165

Co-curricular Requirements

Nursing majors 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 Nurse Practice Act, and 2) the ANA Code of Ethics, a statement of standards and ideals for nursing;
- participate in clinical practicums in various health care facilities and work with individuals and families with a variety of health conditions. Most of the clinical practicums are off-campus. Students are responsible for personal transportation to and from health care facilities for clinical experience; and
- function within health facility policies for patient care. Students must meet institutional health requirements.

Outcomes Assessment Activities

- Assessment of clinical competencies and evaluation tools.
- Individual and class scores in the NLN Comprehensive Nursing Achievement Examination.
- A survey of employers on graduate student performance.
- Individual and class scores on National League for Nursing standardized exams.
- State Board Results (NCLEX) required of graduates prior to professional nursing practice as a registered nurse.
- Student portfolios consisting of course and clinical projects, clinical evaluations tools, research proposals and scholarly papers.

PHYSICS/PHYSICAL SCIENCE DEPARTMENT

CHAIR: Graham
FACULTY: 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 option:
Primarily for students planning graduate study toward a professional career in physics, astronomy or other related fields.

Physics/Engineering option or Electronics Engineering Technology 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 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 the 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 also are 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 2.00 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 2.00 grade-point average in physics;
- A 2.50 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; and
- 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 also is required of all majors in all options.

Specific Requirements for the Physics Option

PHYS Course	Titles	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	Adv Lab Electricity & Magnetism	1
441	Quantum Mechanics	4
480	Practicum in Lab Instruction	1
492	Research	1
493	Seminar	1
499	Thesis Research	1
TOTAL		40

Other Required Courses

MATH 126	Calculus and Analytic Geometry I	5
207	Matrix & Vector Algebra with Appl	2
224	Calculus and Analytic Geometry II	5
325	Intermediate Calculus	3
337	Differential Equations I	3
338	Differential Equations II	3
Approved Math Elective	.....	3
CHEM 121/121L	General Chemistry I/Lab I	5
122/122L	General Chemistry II/Lab II	5
CST 102	Programming w/BASIC .....	.....
or		
CST 105	FORTRAN	3
TOTAL		37

Institutional and General Education

The general education requirement for graduation includes a total of 42 semester hours in three categories. **Some exemptions exist for physics majors.**

Skills Component		
English Composition I	.....	3
English Composition II	.....	3
Speech	.....	3
Computer Usage	.....	2
Mathematics	.....	3
Knowledge Component		
(as listed on page 301, K ¹ through K ⁸)	.....	25
Upper-division Component	.....	3
General Education Total		42
Free Electives	.....	11
TOTAL		53

Total Credit Hours: 130

Specific Requirements for the Physics/Electronics Engineering Technology Option

PHYS Courses	Titles	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	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
207	Matrix and Vector Algebra with Appl	2
224	Calculus and Analytic Geometry II	5
325	Intermediate Calculus	3
337	Differential Equations I	3
CHEM 121/121L	General Chemistry I/Lab I	5
122/122L	General Chemistry II/Lab II	5
CST 105	FORTTRAN	3
EET 110/110L	Computer Applications/Lab	3
211/211L	Electronics I/Lab I	4
212/212L	Electronics II/Lab II	4
250/250L	Basic Electronic Principles/Lab	4
254/254L	Introduction to Digital/Lab	4
255/255L	Introduction to Microprocessors/Lab	4
CST 120	Introduction to Pascal	3
EET 355	Advanced Microcomputer Systems	3
TOTAL		60

Institutional and General Education

The general education requirement for graduation includes a total of 42 semester hours in three categories. **Some exemptions exist for physics majors.**

Skills Component		
English Composition I	.....	3
English Composition II	.....	3
Speech	.....	3
Computer Usage	.....	2
Mathematics	.....	3
Knowledge Component		
(as listed on page 301, K ¹ through K ⁸)	.....	25
Upper-division Component	.....	3
General Education Total		42

Total Credit Hours: 134

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
207	Matrix & Vector Algebra with Appl	2
224	Calculus and Analytic Geometry II	5
325	Intermediate Calculus	3
337	Differential Equations I	3
CHEM 121/121L	General Chemistry I/Lab I	5
122/122L	General Chemistry II/Lab II	5
CST 105	FORTTRAN	3
EN 103	Introduction to Engineering	2
107	Engineering Graphics	2
211	Engineering Mechanics I	3
212	Engineering Mechanics II	3
231/231L	Circuit Analysis I/Lab I	5
321	Thermodynamics I	3
324/324L	Mechanics of Materials/Lab	4
342	Engineering of Manufacturing Processes	4
443	Quality Control and Reliability	3
471	Engineering Operations Research	3
TOTAL		63

Institutional and General Education

The general education requirement for graduation includes a total of 42 semester hours in three categories. **Some exemptions exist for physics majors.**

Skills Component		
English Composition I		3
English Composition II		3
Speech		3
Computer Usage		2
Mathematics		3
Knowledge Component		
(as listed on page 301, K ¹ through K ⁶)		25
Upper-division Component		3
	General Education Total	42

Total Credit Hours: 137

Specific Requirements for the Physics, Biophysics, Chemical Physics, or Mathematical Physics Options

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
	207	Matrix & Vector Algebra with Appl	2
	224	Calculus and Analytic Geometry II	5
	325	Intermediate Calculus	3
	337	Differential Equations I	3
CHEM	121/121L	General Chemistry I/Lab I	5
	122/122L	General Chemistry II/Lab II	5
CST	102	Programming w/BASIC	
or			
CST	105	FORTTRAN	3
Approved electives in biology			32
or			
Approved electives in chemistry			22
or			
Approved electives in mathematics			14
		TOTAL	45-63

Institutional and General Education

The general education requirement for graduation includes a total of 42 semester hours in three categories. **Some exemptions exist for physics majors.**

Skills Component		
English Composition I		3
English Composition II		3
Speech		3
Computer Usage		2
Mathematics		3
Knowledge Component		
(as listed on page 301, K ¹ through K ⁶)		25
Upper-division Component		3
	General Education Total	42

Total Credit Hours: 119-137

Specific Requirements for the Physics, Teacher Certification Option

PHYS	110	Elementary Descriptive Astronomy	3
	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	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
	207	Matrix & Vector Algebra with Appl	2
	224	Calculus and Analytic Geometry II	5
	325	Intermediate Calculus	3
	337	Differential Equations I	3
CHEM	121/121L	General Chemistry I/Lab I	5
	122/122L	General Chemistry II/Lab II	5
GEOL	101/101L	Earth Science/Lab	4
BIOL	121	Environmental Conservation	4
	162	Personal Health	3
	191/191L	Aspects of Biology/Lab	4
CST	101	Computers and You	2
PSYCH	100	General Psychology	3
PSYCH	151	Intro to Human Development	
or			
ED	210	Human Growth & Dev for Educators	3
	202	Foundation of Education	3

	435	Classroom Management	3
	460	Educational Media & Technology	3
	461	Atyp Students in the Secondary School	3
	488	Student Teaching Secondary	15
IST	345	Career Education	2
RDG	425	Teaching Rdg in Content Areas	2
		TOTAL	82

Institutional and General Education

The general education requirement for graduation includes a total of 42 semester hours in three categories. **Some exemptions exist for physics majors.**

Skills Component			
		English Composition I	3
		English Composition II	3
		Speech	3
		Computer Usage	2
		Mathematics	3
Knowledge Component			
		(as listed on page 301, K ¹ through K ⁶)	25
		Upper-division Component	3
		General Education Total	42

Total Credit Hours: 159

Specific Requirements for the Physics/Physical Science Teacher Certification Option

PHYS	110	Elementary Descriptive Astronomy	3
	201/201L	Principles of Physics I/Lab I	4
	202/202L	Principles of Physics II/Lab II	4
		TOTAL	11

Other Required Courses

BIOL	121	Environmental Conservation	4
	162	Personal Health	3
	191/191L	Aspects of Biology/Lab	4
CHEM	121/121L	General Chemistry I/Lab I	5
	122/122L	General Chemistry II/Lab II	5
GEOL	101/101L	Earth Science/Lab	4
CST	101	Computers and You	2
MATH	221	Applied Calculus: Intuitive Approach	5
		Approved electives in chemistry or geology or physics	21-22
PSYCH	100	General Psychology	3
PSYCH	151	Introduction to Human Development	
or			
ED	210	Human Growth & Dev for Educators	3
	202	Foundation of Education	3
	435	Classroom Management	3
	460	Educational Media & Technology	3

	461	Atyp Students in the Secondary School	3
	488	Student Teaching Secondary	15
IST	345	Career Education	2
RDG	425	Teaching Rdg in Content Areas	2
		TOTAL	90-91

Institutional and General Education

The general education requirement for graduation includes a total of 42 semester hours in three categories. **Some exemptions exist for physics majors.**

Skills Component			
		English Composition I	3
		English Composition II	3
		Speech	3
		Computer Usage	2
		Mathematics	3
Knowledge Component			
		(as listed on page 301, K ¹ through K ⁶)	25
		Upper-division Component	3
		General Education Total	42

Total Credit Hours: 143-144

Specific Requirements for the Minor in Physics

PHYS	221/221L	General Physics I/Lab	5
	222/222L	General Physics II/Lab	5
	323/323L	General Physics III/Lab	5
		Approved Upper Division Electives in Physics	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
	110	Elementary Descriptive Astronomy	3
	201/201L	Principles of Physics I/Lab I	4
	202/202L	Principles of Physics II/Lab II	4
	361	Physics of Sound	3
CHEM	111/111L	Principles of Chemistry/Lab	4
	112/112L	Intro to Organic & Biochem/Lab	4
GEOL	101/101L	Earth Science/Lab	4
	123/123L	Historical Geology/Lab	4
CST	102	Programming w/BASIC	3
or			
CST	105	FORTTRAN	3
		TOTAL	24

Specific Requirements for the Minor in Geology

GEOL 101/101L	Earth Science/Lab	.....	4
Approved electives		.....	4
Upper-division electives in geology		.....	12
TOTAL			20

A minimum of seven credits for the minor in geology must be earned at USC.

Co-curricular Requirements

The department faculty believes that students should have co-curricular experiences that complement 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 in writing and orally 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 for each student which contains college grades, records of special skills acquired, senior research project results, Field Achievement Test results and a record of co-curricular activities. The portfolio will remain on file in the department and added to as additional information is obtained from student or employer.

The department faculty believes 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
- a written report on an upper-division topic agreed on by the student and the professor.

THE SCHOOL OF BUSINESS

Dr. William Askwig, dean

Academic Departments	Majors	Minors
Accounting	Accounting (BSBA)	Accounting
Business Administration/ Economics	Business/Management (BSBA) • Management • Marketing • Operations and Materials Management • Finance Economics (BSBA)	Business Administration Economics

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, excellence, and continuous improvement in all that we do.

Program Goals

Wherever possible the School of Business encourages graduates to obtain professional certification.

The School of Business graduates will be able to successfully compete for management training positions in large private firms or government units. They will have the business tools needed to be entrepreneurs. The knowledge and skills acquired with the major in management can be used in human resource and production operations management. A finance degree prepares the graduate for positions in banking, real estate and insurance. Marketing majors will be able to successfully promote and sell goods and services. The accounting degree will prepare graduates for immediate entry into business, government and as Certified Public Accountants. Economics majors are particularly well prepared to enter graduate programs in business in addition to becoming management trainees. The graduate should have a broad-based general education which accounts for

50 percent of the four-year business degree. The graduate should be able to communicate and to think logically and critically in a technological society.

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 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 is designed to prepare students to have an understanding of micro and macro economic principles, and income distribution, and to be able to apply such principles to current economic problems.

The goal of the minor in accounting is to provide financial and managerial accounting.

A cumulative GPA of 2.00 is required in the minor.

Course Waiver

The School of Business offers a "test out" course waiver for some business core courses. *The School of Business does not offer credit for life experience.*

Expected Student Outcomes

General Requirements

Pre-business core (cumulative GPA 2.00 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.

Pre-Business Core

Courses		Titles	Credits
ACCTG	201	Principles of Financial Accounting	3
ACCTG	202	Principles of Managerial Accounting	3
BUSAD	160	Computers and Information Processing	3

BUSAD	260	Business Statistics I.....	3
BUSAD	270	Business Communications	3
ECON	201	Principles of Macroeconomics	3
ECON	202	Principles of Microeconomics	3
TOTAL			21

Business core (cumulative GPA of 2.00 required)

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 also is designed to provide students with the opportunity to integrate their educational experience in business within a specific discipline and across disciplines.

BUSAD	302	Ethical Issues & Legal Env of Bus	3
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
MGMT	320	Organizational Behavior	3
MKTG	340	Principles of Marketing	3
BUSAD	475	International Business	3
BUSAD	480*	Small Business Studies	3
	or 484*	Senior Studies	3
MGMT	485	Managerial Strategies and Policies	3
TOTAL			30

* appropriate prefix

Area Requirements

- A cumulative GPA of 2.00 is required to graduate, except in accounting, where a minimum grade of C in each major course is required (except for ACCTG 201 and ACCTG 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 24 hours.

Minor Requirements

Business students who have chosen business management, economics or accounting degrees have a business administration minor.

Specific Curricular Requirements

Math 220 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 2.00 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 Institute of Management Accountants
 Student chapter of Society for Human Resource Management
 Marketing Club
 Omicron Delta Epsilon (Economics Club)
 Finance Club

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 will contain 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/or 480 Small Business Studies; 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 checkpoint, 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.

ACCOUNTING DEPARTMENT

CHAIR: Stratton

FACULTY: Bridges, Dicino, 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

Students must demonstrate the knowledge or skills:

- of financial accounting and theory and practice that includes revenue and expense recognition, valuation approaches, preparation and analysis of financial statements.
- of cost and managerial accounting that includes cost accounting, planning, evaluation allocation, and budgeting processes.
- of auditing that includes the auditor's report, audit evidence, internal controls and procedures.
- of taxation that includes the theory and practice of taxation both for individual and business.
- of accounting standard setting and the role of accounting professional organizations, government entities and the various codes of ethics in the accounting profession.

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 *Specific Curriculum 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	3
	302	Intermediate Accounting II	3
	311	Federal Income Tax	3
	320	Cost Accounting	3
	401	Advanced Financial Accounting	3
	410	Auditing	3
BUSAD	220	Business Law	3
Electives: Three hours from Accounting 300 or 400 level			3
TOTAL			24

Specific Requirements for the Minor in Accounting (Non-business students)

ACCTG	201	Principles of Financial Accounting	3
	202	Principles of Managerial Accounting	3
	301	Intermediate Accounting I	3
	302	Intermediate Accounting II	3
Electives: Nine hours from Accounting 300 or 400 level			9
TOTAL			21

Co-curricular Requirements

See School of Business requirements.

Outcomes Assessment Activities

See School of Business outcomes.

BUSINESS ADMINISTRATION AND ECONOMICS DEPARTMENT

CHAIR: Billington
FACULTY: Abebe, Ahmadian, Askwig, Browne, Chandler, Dhatt, Eisenbeis, Noreiko, Ribal, Sarver, Shah, Shirley, Taylor, Warfield, Warnock, 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

Students must demonstrate core business knowledge or skills:

- of economics, quantitative decision making, marketing, financial control and analysis and accounting.
 - of management principles used in strategic and tactical planning, setting and integrating goals and objectives, managing change, and effective operations.
 - of organization concepts including various design arrangements.
 - of the legal environment of business especially in the areas of Equal Employment Opportunity (EEO)/Affirmative Action, and the Occupational Safety and Health Administration (OSHA).
 - in using computers, including spreadsheets, word processors, and data management programs.
 - in written and oral communication, analyses and reports in appropriate business format with high quality.
 - in the financing, marketing, cultural and operational aspects of international business relations.
 - in identifying management problems and applying appropriate problem solving and decision-making techniques that include appropriate ethical considerations.
 - of human resource management to include effective practices of recruitment, training and development, appraisal, compensation, and motivation.
 - in interpersonal relationships and effective small group project management.
 - in the ability to conduct an independent research paper where the project requires the use of the knowledge and skills developed in the required courses of the emphasis area. The paper should demonstrate the student's ability to: (a) think independently, (b) synthesize ideas, and (c) think and analyze critically.
 - in the ability to develop a career plan including short- and long-term career goals, a resume and letter of application suitable for sending to perspective employers.
- Students must also demonstrate knowledge or skills that are specific to their selected emphasis area (finance, marketing, management, or operations and materials management) and:
- Understand and use appropriate emphasis area terminology, principles, and concepts.

- Use the scientific problem-solving method, analyze critical case situations specific to the emphasis area; provide reasonable recommendations and support recommendations adequately; apply relevant emphasis area theories, concepts, and techniques; and integrate the primary functional disciplines of business.

- Understand the role or the appropriate emphasis area in corporate policy and strategy development.

Students majoring in economics also must demonstrate knowledge or skills that are specific to the economics area and:

- Understand the central economic theories, both macro and micro, and the policy implications of these theories.
- Understand the macroeconomic role of fiscal and monetary policy.
- Understand market structure and the pricing and output behavior of the firm.

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 *Specific Curriculum Requirements* section).
- Completion of one of the four emphasis areas.

Specific Requirements for the Emphasis Area in Finance

Courses	Titles	Credits
ACCTG	301 Intermediate Accounting I	3
FIN	331 Managerial Finance	3
	333 Investment Analysis	3
	335 Real Estate	3
	337 Insurance	3
	431 Financial Policy Analysis	3
Electives: Six hours from selected 300-400 level courses		6
TOTAL		24

Specific Requirements for the Emphasis Area in Marketing

MKTG	341 Sales Force Management	3
	342 Promotional Strategy	3
	348 Consumer Behavior	3
	350 International Marketing	3
	440 Marketing Research	3
	441 Marketing Strategies	3
Electives: Six hours from selected 300-400 level courses		6
TOTAL		24

Specific Requirements for the Emphasis Area in Management

ECON	402 Economics of Labor	3
	410 Managerial Economics	3
MGMT	318 Personnel Management	3
	365 Management Information Systems	3
MGMT	410 Industrial Relations	3
	468 Total Quality Management	3
Electives: Six hours from selected 300-400 level courses		6
TOTAL		24

Specific Requirements for the Emphasis Area in Operations and Materials Management

MGMT	362 Purchasing and Materials Mgmt	3
	365 Management Information Systems	3
	370 Operations Planning & Control	3
	375 Management Science	3
	460 Operations Strategy	3
	468 Total Quality Management	3
Electives: Six hours in selected 300-400 level courses		6
TOTAL		24

Specific Requirements for the Minor in Business Administration (Non-business students)

ACCTG	201 Principles of Financial Acctg	3
	202 Principles of Managerial Acctg	3
ECON	201 Principles of Macroeconomics	3
	202 Principles of Microeconomics	3
FIN	330 Corporate Financial Management	3
MGMT	310 Principles of Management	3
MKTG	340 Principles of Marketing	3
TOTAL		21

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 *Specific Curriculum Requirements* section).

- Completion of the economics core (see School of Business general requirements).

Specific Requirements for the Economics Major

ECON	301	Intermediate Macroeconomics	3
	302	Intermediate Microeconomics	3
	307	Current Economic Issues	3
	330	Public Finance	3
	402	Economics of Labor	3
	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)

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.

CENTER FOR TEACHING AND LEARNING

DIRECTOR: Byrnes
FACULTY: Bartley, Beller, Datz, Genova, Gutierrez, Opitz, Ortiz, Strader, Valerio, Weinhouse

The Center for Teaching and Learning has a primary mission of preparing teachers of quality and distinction. The center is an integral component of a formal alliance between the university and Pueblo School District No. 60. The first distinguishing feature of the center is its faculty complement. Faculty include teacher education and academic discipline specialists as well as public school teachers who serve the center in a variety of roles. They participate in professional development activities, school-based applied research, teacher induction programs, faculty exchanges, student mentor projects, professional development schools, and future teacher organizations.

The second distinguishing feature of the center is our commitment to an integrated model of learning that combines theory, professional practice, critical thinking and human behavior. We focus attention on educational experiences in a variety of settings, including homes, community agencies and schools. Clear outcomes include the collaboration of faculty members, students, parents, teachers, administrators, and human service specialists to improve the quality of teaching and learning pre K-16.

Program Goals

- Prepare teachers of quality and distinction with a broad-based general education, an academic specialty, and the ability to skillfully translate theory into practice.
- Prepare students to teach effectively in their chosen areas of endorsement and to obtain Colorado teacher certification.
- Offer a curriculum which provides a scope and sequence of educational experiences designed to achieve program goals and expected student outcomes.

Expected Student Outcomes

- Students will demonstrate knowledge of subject matter, theories and principles of teaching and learning, and human development.
- Students will demonstrate the ability to plan and organize for teaching, to implement effective teaching strategies, and to evaluate those strategies in terms of student progress towards learning outcomes.
- Students will demonstrate the ability to make ethical decisions.
- Students will communicate effectively in a variety of cultural settings.
- Students will think critically about what is said, written, and accomplished in the name of education and schooling.
- Students will engage in continuous professional development.
- Students will demonstrate that they are educated persons.

Teaching Endorsement Areas

The Center for Teaching and Learning collaborates with other academic units to offer programs leading to Colorado teacher certification in the following endorsement areas:

Bilingual Education (K-6)	Mathematics (7-12)
Elementary Education (K-6)	Music (K-12)
English (7-12)	Physical Education (K-12)
Foreign Languages (7-12)	Science (7-12)
French, Spanish	Social Studies (7-12)
Industrial Education (7-12)	Speech (7-12)

Selective Entry and Retention in Teacher Education (SERTE)

Admission

Admission to the teacher education program for any endorsement area requires the following:

- 1) A B average in ENG 101 and 102. Undergraduates must earn a minimum of B in SPCOM 103. If less than a B is earned, they must take and pass the oral portion for the California Achievement Test (CAT). Post-baccalaureate students who take and pass the oral CAT will not be required to take SPCOM 103.
- 2) A grade of B or better in MATH 109 or C in a higher level mathematics course or an ACT mathematics score of 23 or better.
- 3) A minimum GPA of 2.50 for the last 30 semester hours of university course work.
- 4) Pass the required entry-level basic skills competency tests.
- 5) File an application for admission to the teacher education program which must include the following items:
 - Documented evidence of compliance with requirements 1-5.
 - Documentation of successful experiences with children or youth.
 - A writing sample.
 - A completed health clearance form.
 - Four written recommendations from faculty members.
 - Submission of an advisement sheet for the selected teaching endorsement area(s) listing all courses completed. The sheet should include transfer courses or substitutions (subject to approval by the director of the Center for Teaching and Learning).
 - Submission of an advisement sheet for the chosen academic major.
 - A written recommendation from the Division of Student Life and Development.
 - Appropriate signatures on all forms.

* Students may not enroll in any course with the prefix ED (except ED 102 and ED 202) unless they have been fully admitted to the teacher education program.

Further details about the Selective Entry and Retention in the teacher education process are described in the Teacher Education Handbook available in the USC Bookstore.

Retention

Students must pass all professional education courses including reading and bilingual education with a grade of C or better and continue to meet GPA requirements stipulated in the admission to teacher education criteria. Students also must demonstrate characteristics of teachers of quality and distinction in their field experiences and student teaching.

Student Teaching

Student teaching provides opportunities to integrate theory and practice. Prior to being approved for a student-teaching assignment, the following requirements must be met:

- 1) Completion of all methods courses.
- 2) Compliance with all admission to teacher education criteria.
- 3) A GPA of 2.50 or higher.
- 4) Grades of C or higher in all professional education courses.
- 5) Demonstration of the characteristics of teachers of quality and distinction.
- 6) Applications must be submitted a semester in advance: September 30 for spring semester assignment; February 28 for a fall semester assignment.

Teacher Certification

Applications for certification are forwarded to the Colorado Department of Education (CDE) with the institutional recommendation only after official transcripts have been received and a final review has been conducted by the coordinator of certification in the Center for Teaching and Learning.

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.

Courses		Titles	Credits
PSYCH	100	General Psychology	3
PSYCH	151	Intro to Human Development	3
	or 252	Adolescence, Adulthood & Aging	3
	or 151/252	Human Development/Adolescence, Adulthood & Aging	6
ED	202	Foundations of Education	3
ENG	251	Traditional Grammar Theory	3
	or 352	English Syntax	3
ENG	351	Children's Literature	2
MATH	360/361	Elem Concepts in Math I/II	6
HP	322	Elem School Physical Education	2
ART	377	Principles of Elementary Art Education	1
MUS	351	Prin of Music in Elem School	1
SPCOM	370	Creative Dramatics	1
RDG	301	Rdg and Language Arts in Elementary School	3
RDG	450	Diagnosis & Remediation of Rdg Problems	3
BBE	401	Teaching the Limited English Proficient 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	487	Student Teaching Elementary School	15
TOTAL			64-67

Specific Requirements for the Bilingual Elementary Teaching Endorsement

The student must complete the Spanish major (bilingual emphasis) offered by the English/foreign languages department. 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 an appropriate major as approved by CDE. In addition, the following supporting courses and professional sequence are required:

PSYCH	100	General Psychology	3
PSYCH	151	Intro to Human Development	3
	or 252	Adolescence, Adulthood & Aging	3
	or 151/252	Human Development/Adolescence, Adulthood & Aging	6
ED	202	Foundations of Education	3
IST	345	Career Education	2
RDG	425	Teaching Reading in Content Areas	2
(For K-12 endorsements, RDG 301 is required in place of RDG 425).			
ED	435	Classroom Management	3
ED	460	Educational Media and Technology	3
ED	461	Atypical Students in the Secondary	2
(For endorsement in physical education, HP 465, Adapted Physical Education, is required in place of ED 461).			
ED	488	Student Teaching Secondary	15
	or 489	Student Teaching K-12	15
TOTAL			34-39

Outcomes Assessment Activities

In the Center for Teaching and Learning, outcomes assessment is a process that documents the relationship between its stated mission, goals and objectives, and the actual outcomes of programs and activities. Assessment is multidimensional and comprehensive, in that a variety of quantitative and qualitative measures are utilized.

- Student compliance with all teacher education program standards is assessed through the Selective Entry and Retention in Teacher Education (SERTE) process. SERTE requires a GPA of 2.50 for the most recent 30 semester hours and a GPA of 2.50 in the major to qualify for a student-teaching assignment. Student teaching requires a full 15 weeks under the supervision of an experienced teacher endorsed in the student's area of preparation. All performance expectations are listed on the "Student Teacher Progress Indicator" rating form.
- Student records are maintained in the office of the Center for Teaching and Learning. Admission and Student Teaching applications are reviewed by faculty advisers, the center screening committee, and the university's Teacher Education Board twice annually. Decisions are made to accept, to accept conditionally, or reject applications. Students have the right to appeal such decisions through the university's due process procedures.

Assessment focuses on the following characteristics of teachers of quality and distinction:

- Knowledge of the academic specialty is assessed through qualitative and quantitative measures utilized in all courses.
- Knowledge and understanding of learning principles and theories are assessed through quantitative measures in pedagogy courses, field experiences, and student teaching.
- The ability to plan, organize for teaching, implement and evaluate teaching strategies is assessed by quantitative and qualitative measures in professional education courses, field experiences, and student teaching.
- Personal and professional qualities, including the ability to make ethical decisions, are assessed throughout the program. Both university and school personnel utilize formal and informal rating systems to assess those qualities.
- The ability to think critically about what is said, written, and accomplished in the name of education and schooling is assessed through written assignments, tests, classroom discussion and observation during field experiences and student teaching.

Reading Program

Reading Minor

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 and other language arts.

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 the generally accepted concepts, strategies and skills in the areas of oral language, reading readiness, emergent literacy, word recognition, 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 literature as factors in motivating growth in reading and the language arts.
- Be able to plan lessons and teach effectively using a variety of grouping techniques, including whole class, individual, ability, and cooperative.

- Be able to locate and use a variety of materials to teach reading and the other language arts. The materials include textbooks, basal readers, trade and library books, teacher-made materials, computer programs, student-generated texts, centers, newspapers, and children's literature.
- 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 develop reading and writing growth for all students.
- Be able to recognize common causes of reading and writing difficulties and administer and interpret the scores of a variety of informal and formal assessment techniques such as reading miscue inventories and norm-referenced standardized tests.
- Be able to assess writing samples for diagnosis and prescription in expression, organization, fluency, sentence and paragraph development, theme, spelling, penmanship and fluency in word processing.
- Be able to explain the need to collaborate with parents, librarians, drama and other teachers to provide an effective language arts program.

Specific Requirements

Complete the reading core with a cumulative GPA of 3.00 or better and complete the reading electives with a cumulative GPA of 2.50 or better.

Core Courses		Titles	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	2
	or 412	Literature for Adolescents	2
		TOTAL	13
Elective Courses			
RDG	360	Practicum	1-3
	431	Developing Creative Centers	1
	436	New Directions in Rdg 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 Stu in the Secondary School	3
		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 of 3.00 or better. Assessment of expected outcomes 1 through 6 are monitored by the reading director.
- Students must complete the 21-hour requirement with electives listed on the advisement sheet. The overall GPA must be 2.50 or higher.
- Students wishing to pursue the reading minor also are expected to complete a questionnaire. The questionnaires are kept on file in the reading minor director's office. They are used to plan course offerings and to document the progress of students seeking the minor.

SPECIAL ACADEMIC PROGRAMS AND SERVICES

FEDERALLY SPONSORED PROGRAMS

Minority Biomedical Research Support Program. Research opportunities in biology, chemistry and psychology are available to students interested in pursuing careers in biomedical science. Students gain hands-on experience working in modern laboratories with faculty mentors and other student researchers. Salaries and travel expenses to scientific meetings are supported by a grant from the National Institutes of Health.

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. The Upward Bound Program at the University of Southern Colorado is a pre-college program which attempts to generate skills and motivation necessary for success in education beyond high school. The criteria for acceptance into the program include low-income and potential first generation students who are enrolled in high schools seeking to prepare themselves for entry into a postsecondary education.

Eligible participants must have completed the eighth grade and be between the ages of 13 and 19, enrolled in a high school, planning to go to college, and need the services in order to fulfill their goals. Two-thirds (2/3) of the participants must be low-income and/or potential first generation college students. Participants are selected based upon recommendations from their counselors, teachers, and social agencies.

Basic skills, counseling, tutoring and skills necessary for acceptance into and success in college are provided. An intensive six-week summer program offers six credits of college courses for graduating seniors. The remaining undergraduates attend evening classes emphasizing mathematics, science, English, and writing. Applications are available at high school counselors' offices. For more information, please call 549-2750.

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 of the catalog.

American Language Academy offices are located in the Occhiato 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 head-

phones. 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 Humanities and Social Sciences.

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, Colorado Correctional Facilities in Canon City, Altus Air Force Base in Oklahoma, McGuire Air Force Base in New Jersey, 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. Such special request courses may take place either on or off campus.

The division also administers the Senior to Sophomore program in the public schools. The program enrolls eligible Pueblo high school students in dual-credit courses which are delivered by part-time university faculty on the high school campus.

The Division of Continuing Education serves as the host for graduate programs which are delivered on-site at the USC campus by Colorado State University, the University of Northern Colorado, and Adams State College.

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.

KTSC-TV

KTSC-TV, Channels 8 and 15, a non-commercial public television station licensed by the Federal Communications Commission to the university, operates as a public service under the supervision of the provost. The station broadcasts seven days a week at full power covering south/southeastern and west central Colorado, including Pueblo, Colorado Springs, Canon City, Walsenburg, the Arkansas and San Luis Valleys and also the western slope of Colorado. 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. Television production courses offered through the department of mass communications are taught at the Buell Communications Center which is the home of KTSC-TV. 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.

Programs of study may be planned with faculty in psychology, sociology, English, and social work. 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, centers and schools and are administered with the assistance of the dean of Admissions and Enrollment Services. The dean of Admissions and Enrollment Services 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 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) and offers a coordinated program with Colorado State University for a master's degree program in social work (MSW). Although the latter programs are offered on the USC campus, the actual degrees are awarded by Adams State College or Colorado State University, respectively, and graduate regulations pertaining to the degrees follow the policies of the appropriate 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 \$15 application fee. The fee is non-refundable and is not applicable toward tuition. For students previously enrolled as degree-seeking 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 elementary education/guidance and counseling consortium programs apply directly to Adams State College. Those students interested in the MSW program may apply to Colorado State University and the University of Southern Colorado.
- 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. Scores may influence the admission decision but are used primarily for advising.
- 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 also is accepted. Students who complete an undergraduate degree at an institution in the United States are exempt from this requirement.

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 — 3.00; business administration — 2.70; systems engineering — 2.80;
- 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 completion of leveling courses to correct 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 2.50 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 dean of Admissions and Enrollment Management, on recommendation of the program director, will admit the student under conditional status if the student's grade-point average is at least 2.50, but not high enough for regular admission; or if the student has not met a condition specified by the program department. Such 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 dean of Admissions and Enrollment Management will refer the student to an adviser appointed by the program director. 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 dean of Admissions and Enrollment Management and the dean of the college/school and a copy provided to the student.

When the conditions are met, the dean of Admissions and Enrollment Management will notify the student that he/she has achieved regular degree-seeking status. Students on 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 dean of Admissions and Enrollment Management 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 dean of Admissions and Enrollment Management 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 3.00 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, conditional upon 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 an 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 dean of Admissions and Enrollment Management. 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 dean of Admissions and Enrollment Management will notify the student and the program director when the student 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 3.00 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 30-32 semester hours.
- 4) Pass a final comprehensive and/or oral examination in the major area of study, if required by the program.
- 5) Submit a graduation planning sheet signed by the student's graduate adviser during the semester prior to 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. If choosing the thesis option, submit two approved copies of the thesis, one to the program director and one to the University Library.
- 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. A maximum of six semester hours of thesis or directed research course work will count toward meeting graduation requirements.
- 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 dean of Admissions and Enrollment Management. 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 3.00. Credits accepted in transfer do not apply to the GPA at USC.

GRADUATE ADVISING

Each graduate degree area has a program director appointed by the dean of the college, center, or school. The program director will serve as graduate adviser to all graduate students in the program, unless the dean of the college, center or school makes a different assignment. The adviser will assist in selecting a graduate committee for each student who chooses the thesis option. The graduate committee shall consist of at least two faculty members and is appointed by the dean of the college, center or school 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 dean of Admissions and Enrollment Management with the approval of the student's graduate adviser. The dean 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 (if applicable) and program director, to the dean of Admissions and Enrollment Management. The degree plan should be submitted no later than upon completion of 12 hours of study. A 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 dean of Admissions and Enrollment Management.

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 program director may, however, stipulate a grade point to be achieved in such undergraduate courses.

Graduate programs may include courses which are dual numbered at the senior (400) and graduate (500) level. Students registered for graduate credit shall be required to perform at the graduate level. Dual-listed courses taken for undergraduate credit will not apply toward a graduate program. 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 semester 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 dean of Admissions and Enrollment Management.

ACADEMIC STANDARDS

Graduate courses are graded in an alphabetical system with the following interpretation:

- A — Excellent performance
- B — Good performance
- C — Passing, but below expected performance
- D — Unsatisfactory performance
- F — Failing
- IN — Incomplete, no credit awarded
- S — Satisfactory
- IP — In progress
- W — Withdrawal
- NC — No credit

Students may apply no more than six semester hours of work with a grade of C toward graduation requirements. Grades of D, F, IN, U, do not fulfill graduation requirements for graduate programs.

Graduate students may repeat a maximum of six semester 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 academic standing, a graduate student's GPA must remain at 3.00 or better. If the graduate GPA falls below 3.00, 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 program director. This petition must provide a justification for continued registration. The program director shall forward its recommendation through the appropriate dean to the Office of the Provost. The provost or his designee shall make a decision on the appeal and inform the student of that decision. Decisions by the provost are final.

COMPREHENSIVE EXAMINATIONS

Graduate programs may require a final comprehensive and/or oral examination at the time of defense of the thesis or directed research project or at the completion of course work. 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 provides an option that includes a thesis or a directed research project. This option also requires 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 18 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 or 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 dean of Admissions and Enrollment Management 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 dean of Admissions and Enrollment Management. The report must be signed by all members of the graduate committee. Students must pass the oral defense to complete their thesis or directed research requirement successfully.

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, law and ethics, management, and 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 (4.00 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 GPAs 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 School of Business offers a test-out course waiver for some business core courses. The School of Business does not offer credit for life experiences.

The MBA degree will be conferred upon students who successfully complete a minimum of 36 hours of approved course work. The curriculum is composed of two options with 27 semester hours of required core courses which are taken by all candidates. Option one requires the International Business course and six semester hours of approved graduate electives in the School of Business. Option two requires six semester hours of course and directed research and three semester hours of approved graduate electives in the School of Business.

Core Courses		Credits
ACCTG	510	Managerial Accounting .....3
BUSAD	551	Business Ethics and Environment .....3
ECON	501	Managerial Economics .....3
FIN	530	Financial Management .....3
MGMT	511	Production/Operations Management .....3
	520	Management of Organizational Behavior ..3
	560	Management Information Systems .....3
	585	Management Policy and Strategy .....3
MKTG	540	Marketing Management Strategies .....3
		27

Requirements for Option I		Credits
BUSAD	575	International Business 3
Approved Electives		.....6
		9

Requirements for Option II

BUSAD	580	Business Research Methodology .....3
	592	Directed Research .....3
Approved Electives		.....3
		9

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 1992. 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 2.25 or higher for all college and university work, and a baccalaureate degree. 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 course work. Students must maintain a graduate GPA of at least 3.00, 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.

Course work 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 program requires 30 or 32 semester credit hours of approved graduate course work in either the thesis or non-thesis option. The program offers three emphasis areas—applied biological sciences, applied chemical sciences, and applied biochemical sciences.

Degree Requirements

The course of study requires four semester credits of work common to all students. Each student must select an emphasis area with a core of seven semester credits. Thirteen or twenty-one credits in elective courses are also required, depending on which option is chosen. The thesis option requires successful completion of six semester credits of thesis research (BIOL 599 or CHEM 599) and an approved thesis. The program of study for each student must be approved by a college committee.

Thesis option students are required to defend their research results before a thesis defense committee. Non-thesis option students must take a written comprehensive examination over courses taken in their program of study. A non-thesis option student must submit written evidence of her or his ability to understand and critique scientific literature.

Plan A (thesis option)		Plan B (non-thesis option)	
4	Core Courses ANS 510 ANS 520 ANS 593 (X2)	4	
7	Emphasis Core Courses Biological emphasis or Chemical emphasis or Biochemical emphasis	7	
6	Thesis research	—	
13	Approved Elective Courses	21	
30	TOTAL	32	

Course		Credit
ANS	510	Scientific Information Systems 1
	520	Health and Safety in the Laboratory 1
	593	Seminar (taken twice) 2
		4

Required Courses for Each Emphasis

Course		Credit
Biological Sciences Emphasis Core		
BIOL	540/540L	Molecular Genetics/Lab 3
	552/552L	Theory & Appl of Electron Microscopy/Lab 4
		7

Course		Credit
Chemical Sciences Emphasis Core		
CHEM	503	Polymer Chemistry 3
	529	Advanced Instrumentation 2
	550	Industrial Chemistry 2
		7

Course		Credit
Biochemical Sciences Emphasis Core		
BIOL	540/540L	Molecular Genetics/Lab 3
CHEM	512/512L	Biochemistry II/Lab 4
		7

Elective Courses

A minimum of 13 (Plan A – thesis option) or (Plan B – non-thesis option) credit hours must be selected from courses listed below.

Course		Credit
ANS	501	Ethics of Science 2
BIOL	521/521L	Histology/Lab 4
	526/526L	Plant Morphology 3
	523/523L	Embryology/Lab 4
	540/540L	Molecular Genetics/Lab 3
	541/541L	Freshwater Invertebrate Zoology 4
	543/543L	Limnology 4
	552/552L	Theory & Appl of Electron Microscopy/Lab 4
	572/572L	Radiation Biology/Lab 4
	579/579L	Ichthyology/Lab 3
	581/581L	Entomology/Lab 3
	582/582L	Parasitology/Lab 3
	583/583L	Mammalogy/Lab 3
	584/584L	Ornithology/Lab 3
	585/585L	Plant Taxonomy/Lab 3
	591	Special Topics 1-4
	595	Independent Study 1-4

CHEM	501/501L	Advanced Organic Chemistry/Lab	4
	503	Polymer Chemistry	3
	511	Biochemistry I	3
	512/512L	Biochemistry II/Lab	4
	519/519L	Instrumental Analysis/Lab	3
	521	Advanced Inorganic Chemistry	3
	525	Environmental Chemistry	3
	529	Advanced Instrumentation	2
	531	Radiochemistry	2
	550	Industrial Chemistry	2
MATH	591	Special Topics	1-4
	595	Independent Study	1-4
	544	Mathematical Methods of Applied Science	3
PHYS	531	Electricity and Magnetism	4
	541	Quantum Mechanics	4

Master of Social Work (MSW)

The University of Southern Colorado and Colorado State University cooperate to offer the Master of Social Work program. The program specialization is directed toward advanced generalist practice with a focus on rural and transitional communities. The program prepares social workers for autonomous independent practice in a variety of settings. Course work at USC is offered part-time in the evenings.

Students normally take 6-9 credit hours per semester for four semesters (two years). The third year of the program is full time and consists of a field placement in a rural or transitional community, with students periodically going to the campus of Colorado State University for intensive course work over several days. The field placement phase requires approximately 30 hours per week in agency and community placement. Three calendar years, which include approximately 60 credit hours of courses, are required for completion of the program.

Applications are accepted once a year in the spring for classes beginning the following fall. The program is fully accredited by the Council on Social Work Education (CSWE) and has WICHE designation. Applicants with a degree in social work from a baccalaureate social work program accredited by CSWE are eligible to examine out of foundation courses on a course-by-course basis. Those interested may apply to the University of Southern Colorado.

Systems Engineering (MS)

Systems engineering deals with the design and analysis of complex, human/machine systems. Systems engineers, with the "big picture" or systems viewpoint, serve as management and operations analysts, focusing on the people, materials, equipment and procedures needed for the most efficient and effective systems performance. Systems engineers analyze and evaluate systems against specified performance criteria, such

as quality, before new systems are created or old ones are modified. Systems engineering techniques can be applied in manufacturing and service industries, health care systems, governmental agencies and non-profit organizations.

The Master of Science in Systems Engineering degree program at the University of Southern Colorado provides students with practical knowledge in areas such as facilities planning, operations planning and control, economic and decision analysis, and project management. Methodologies employed by systems engineers include probability and statistics, mathematical programming, computer simulation, and human performance studies.

Degree requirements. The Master of Science in Systems Engineering degree program consists of 30 semester hours of required courses and six semester hours of elective courses or thesis credit, for a total of 36 semester hours minimum. No more than two 400-level courses may be counted for graduate credit. Courses from the approved set of electives may be substituted, if approved, for required courses for which a student can demonstrate mastery as a result of previous course work.

Admission requirements. The program is open to applicants with a quantitatively based baccalaureate degree from regionally accredited colleges or universities. Admission to the systems engineering program requires prior admission to graduate studies. Regulations governing graduate studies are contained in the Graduate Policies and Procedures Guide, available from the Office of Admissions and Enrollment Management.

Prerequisite requirements. Students will be required to demonstrate preparation for graduate study in systems engineering by completing prerequisite background courses in engineering, computer programming, 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 256 or 350)
Statistics (MATH 356 or EN/MATH 456)
Differential Equations (MATH 337)

Required Courses		Credits
EN	503	Ergonomics .....3
	504	Scheduling and Sequencing .....3
	520	Simulation and Stochastic Processes .....4
	530	Project Planning & Control .....3
	540	Advanced Engineering Economics .....3
	571	Engineering Operations Research .....3
	575	Engineering Systems Analysis and Design ..3
	577	Operations Planning & Control .....3
	591	Special Topics .....3
	593	Graduate Seminar .....2
Thesis Research or Elective Courses.....		6
Total Semester Hours		36

Elective Courses (approval required):		Credits
ACCTG	510	Managerial Accounting .....3
ECON	501	Managerial Economics .....3
EN	440	Safety Engineering .....3
	443	Statistical Quality Control .....3
	473	Computer Integrated Manufacturing .....3
	500	Logistics, Maintainability and Life-Cycle Support .....3
	501	Software Systems Engineering .....3
	565	Stochastic Systems Engineering .....3
	590	Special Projects (1-3 var)
	599	Thesis Research (1-6 var)
MATH	544	Mathematical Methods of Applied Science ..3
MGMT	560	Management Information Systems .....3

Graduate assistantships. Full-time students admitted to the program with regular status are eligible to apply for graduate assistantships. U.S. citizenship or permanent resident status is required. Graduate assistants pay in-state tuition and fees. Full-time assistantships require students to work an average of 20 hours per week and carry a stipend of \$6,800 for the academic year. Half-time assistantships require students to work an average of 10 hours per week and carry a stipend of \$3,400 for the academic year. Assistantships are renewable for a second academic year provided students perform satisfactorily in assistantship assignments, remain in good academic standing, and make satisfactory progress toward completion of their degree programs. An application for assistantship consists of a letter of interest, addressed to the department chair, which includes a statement of qualifications and the names, addresses and telephone numbers of three references. The deadline for applications is May 1 for the following academic year.

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.
- 600-620 Colorado State University courses offered at the University of Southern Colorado toward a master's degree in social work.

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).

Off-campus individual experience providing transition from classroom instruction to on-the-job experience. Supervised by instructor and job supervisor. Prerequisite: senior standing and permission of instructor.

Cross-listed courses. Courses in which students may earn credit under either of two prefixes (e.g., SOC or HIST) for the same offering.

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

Prerequisite. 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.

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. Corequisite: BIOL 191L. (F,S)

191course number
Aspects of Biologycourse title
3(3-0)number of credits (clock hours in lecture per week — clock hours in laboratory demonstration or studio experiences per week)
"Introduction to..."explanation of course content
Corequisite BIOL 191Lrequired to be taken concurrently
(F,S)taught fall and spring semesters

Note: Not all of the above information may be noted in each course. Additional symbols include:

- | | |
|--------------------------|--|
| F Taught fall semester | VAR Variable credit course |
| S Taught spring semester | L Suffix indicating lab course |
| SS Taught summer session | CE Credit by exam allowed |
| * Offered upon demand | IP Grade of IP (In Progress) available |
| # Taught 1993-94 | ## Taught 1994-95 |

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
- 599 — Thesis Research
- 600 — Master's Degree in Social Work

COURSE PREFIXES

Courses of instruction are identified by the following approved prefixes:

- | | |
|-------|--|
| ACCTG | —Accounting |
| ANS | —Applied Natural Science |
| ANTHR | —Anthropology |
| APSM | —Auto Parts and 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 |
| GENED | —General Education |
| GEOG | —Geography |
| GEOG | —Geology |
| GER | —German |
| HIST | —History |
| HP | —Human Performance and Leisure Studies |
| HUM | —Humanities |
| IS | —Interdisciplinary Studies |
| IST | —Industrial Science Technology |
| ITL | —Italian |
| LANG | —Language |
| KIN | —Kinesiology |

MACOM	—Mass Communications
MATH	—Mathematics
MET	—Mechanical Engineering Technology
MGMT	—Management
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
SPN	—Spanish
SW	—Social Work
TH	—Theatre

ACCOUNTING (ACCTG) UNDERGRADUATE COURSES

201 Principles of Financial Accounting 3(3-0)

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 220. (F,S,SS)

202 Principles of Managerial Accounting 3(3-0)

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 3(3-0)

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. (*)

301 Intermediate Accounting I 3(3-0)

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,SS)

302 Intermediate Accounting II 3(3-0)

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,SS)

311 Federal Income Tax 3(3-0)

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)

312 Corporate, Estate and Gift Tax 3(3-0)

Taxation of corporations, partnerships, estates/trusts. Analysis of mergers and dissolution of corporations. Introduction to estate/gift taxes and international taxation. Prerequisite: ACCTG 201, 202, 311. (S)

320 Cost Accounting 3(3-0)

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)

401 Advanced Financial Accounting 3(3-0)

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 3(3-0)

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. (*)

410 Auditing 3(3-0)

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,S)

430 Accounting Information Systems 3(3-0)

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 3(3-0)

A study of advanced accounting topics especially as concerns not-for-profit entities with emphasis on governmental accounting. Prerequisite: ACCTG 302. (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,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. Prerequisite: senior standing in School of Business and completion of all core courses. (F,S,SS)

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. (F,S,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) (F,S,SS)

595 Independent Study (1-3 VAR)

Individual study of a subject determined by the instructor and student with permission of the director. Prerequisite: graduate standing. (F,S,SS)

599 Thesis Research (1-6 VAR)

(IP and S/U grading) (F,S,SS)

**ANTHROPOLOGY (ANTHR)
UNDERGRADUATE COURSES****100 Cultural Anthropology 3(3-0)**

Introduction to the concepts by which anthropology understands particular lifestyles, and to the constructs by which it accounts for similarities and differences among lifestyles. (F,S)

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. (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. (F,S)

105 Introduction to Archaeology 3(3-0)

Evolution of cultures as explained through archaeological methods and theories; emphasis on the preservation and protection of the cultural environment. (*)

106 (ENG 106) Language, Thought and Culture 3(3-0)

Cross-cultural introduction to language processes in human society. (*)

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. (*)

108 Culture, Technology and Environment 3(3-0)

Comparative study of human cultures and ecological principles relating to both subsistence level and complex societies. (*)

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. (*)

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. (*)

251 World Archaeology 3(3-0)

Awareness and appreciation of cultural evolution and heritage through descriptions and interpretations of archaeological remains throughout the world. (S)

252 (SOC 252) Culture and Personality 3(3-0)

Relationship between group processes and personality factors in a cross-cultural perspective. (*)

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. (*)

310 (SOC 310) Social and Cultural Theory 3(3-0)

From classical to contemporary theory in sociology and anthropology. (*)

401 (SOC 401) Health, Culture and Society 3(3-0)

Analysis of cultural, social, and psychological factors influencing health and health-care. (*)

402 (SOC 402) Aging, Culture and Society 3(3-0)

Cultural, sociological, and psychological dimensions of aging. (*)

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. (*)

451 (SOC 451) Culture/Deviance/Psychopathology 3(3-0)

Analysis of the relationship between culture and the causes and manifestations of deviance and psychopathology. (*)

453 Southwestern Archaeology 3(3-0)

Investigations of the prehistories of diverse peoples and cultures of the Southwest. (*)

491 Special Topics (1-3 VAR)

(*)

492 (SOC 492) Research 3(3-0)

Qualitative and quantitative methods and designs in sociological research. (*)

493 Seminar (2-4 VAR)

Major principles, propositions, and concepts which establish social and cultural understanding. (*)

494 Field Experience (3-12 VAR)

Practical experience in an agency setting. Prerequisite: permission of instructor. (*)

495 Independent Study (1-10 VAR)

Directed study for students interested in specific areas of anthropological concern. Prerequisites: previous work in anthropology and permission of instructor. (*)

**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 Ab-*

stracts, *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 Visual Dynamics 3(3-0)**

Appreciation and understanding of visual experiences and techniques reflecting the cultural dynamics of creativity. (F,S*)

101 Art History Survey I 3(3-0)

Development of style, iconography and function of art from prehistoric times to the Gothic period. (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. (S,SS)

103 Art History Survey III 3(3-0)

Development of style, iconography and function of art in non-western cultures. (F,S,SS)

104 Computer Graphic Literacy 1(1-2)

Basic to all microcomputer software applications containing graphic components such as business presentations, medical molecular modeling, cartography or graphic design. (F,S*)

105 History Through Art 3(3-0)

A survey of history as a means of understanding people of the past and present through a perusal of major works of art. (F,S*)

110 Art Career Orientation 1(1-0)

Guided development of individual job objectives. (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, painting, crafts, jewelry, and fiber. (F,S,SS)

206 Art History: Contemporary 3(3-0)

Development of style and iconography of contemporary art since 1950. Prerequisite: permission of instructor. (F,S)

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)

246 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)

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)

The production of original imagery through the use of art-oriented software on microcomputers with video input. Prerequisites: art core or permission of instructor. (Repeatable once.) (F,S,SS)

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)

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)

The use of microcomputers to produce original slides or prints and animation on video tape. Prerequisite: art core or permission of instructor. (Repeatable once.) (F,S,SS)

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)

387 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 nine 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)

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 tutoring 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 1(1-0)
Introduction to the industry from viewpoint of history,

social impact, organization structure, manpower needs, and future growth. (F)

115 Automotive Engine Design and Operation 5(3-4)
Design, operation and repair techniques of current and future automotive engines. (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 4(4-0)
The complete spectrum of jobber and dealer parts department, from counter to manager operations, to include electronic cataloging, customer service, and introduction of parts computer systems. (F)

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 and Energy Technology 3(3-0)
Current uses of different forms of energy, the technology involved in generating power from various sources and the impact on society and the environment. (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 4(3-1)
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)

265 Automotive Parts Systems 4(3-2)
A study of automotive parts systems utilized by industry in distribution, inventory, basic accounting, cataloging, and business practices and procedures for parts management. Prerequisite: APSM 105 and 155. (F)

296 Cooperative Education Placement (1-5 VAR)
Supervised industrial field work. Prerequisite: freshman or sophomore standing, APSM major. (F,S)

305 Automotive Parts/Service/EPA Issues 3(3-0)
A study of automotive industry management theory, styles, equipment, communications and EPA regulations issues. Prerequisites: APSM 155 and 265. (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. (F)

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 Personal Selling Methods and Techniques 4(3-2)
Research, preparation and presentation methods and techniques for selling in the automotive milieu. Prerequisite: junior or senior standing. (F)

425 Automotive Financial Systems 5(4-2)
A study of financial systems utilized in the automotive aftermarket and original equipment business for business analysis. Prerequisites: ACCTG 202, APSM 155, 265 and 305. (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. (*)

605 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

100 Principles of Biology 3(3-0)
Introduction to basic principles common to all facets of biology. Topics include a brief history of biology, the scientific method, the diversity of life, cell structure and reproduction, and metabolism. (F,S)

100L Principles of Biology Lab 1(0-2)
To expose the student to problem-solving skills emphasizing the importance of observation and data accumulation. Corequisite: BIOL 100. (F,S)

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. (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. (CE,F,S)

121 Environmental Conservation 3(3-0)
Historical review of humankind's interrelationship with and impact on the natural environment. Basic principles of ecology and current issues relating to the use of natural resources and environmental problems. (F,S,SS)

121L Environmental Conservation Lab 1(0-2)
Optional field studies to augment BIOL 121. Corequisite: BIOL 121. (F,S,SS)

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. (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. (CE,F,S)

162 Personal Health 3(3-0)
The development of knowledge and the scientific basis for the analysis, evaluation and promotion of personal health and wellness. (F,S)

171 Career Planning I 1(0-4)
Identifying career options and creating a personalized educational program. (S/U grades) (F,S)

201 Botany 3(3-0)
Morphology, anatomy, physiology, phylogeny and ecology of the major plant groups. Prerequisite: BIOL 191 or permission of instructor. Corequisite: BIOL 201L. (CE,F,S)

201L Botany Lab 2(0-4)
Corequisite: BIOL 201. (CE,F,S)

202 Zoology 3(3-0)
Anatomy, physiology, ecology and phylogeny of major and minor invertebrate and vertebrate taxa. Prerequisite: BIOL 191 or permission of instructor. Corequisite: BIOL 202L. (CE,F,S)

202L Zoology Lab 2(0-4)
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)

220 Medical Terminology 1(1-0)
Basic prefixes, word roots, combining forms and suffixes of medical terminology and human anatomy are covered. (S)

221 Principles of Human Anatomy and Physiology 3(3-0)
Fundamentals of anatomical structures and physiological function. Corequisite: BIOL 221L. (CE,F,S)

221L Principles of Human Anatomy and Physiology Lab 1(0-2)
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. Corequisite: BIOL 223L. (CE,F)

223L Human Physiology and Anatomy Lab I 1(0-2)
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. Corequisite: BIOL 224L. (CE,S)

224L Human Physiology and Anatomy Lab II 1(0-2)
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. Prerequisite: BIOL 201 or permission of instructor. Corequisite: BIOL 262L. (CE,*)

262L Basic Horticulture Lab 1(0-2)
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. (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 (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. (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)
Prerequisite: 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. (F,S)

160 Introduction to Computers and Information Processing 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,SS)

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 220. (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. (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 responsibilities 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 business. Prerequisites: FIN 330, MGMT 310 and MKTG 340. (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. Prerequisites: senior standing and permission of instructor. (F,S,SS)

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). Prerequisites: junior or senior standing in the School of Business and permission of internship coordinator. (F,S,SS)

GRADUATE COURSES

551 Business Ethics and Environment 3(3-0)

The impact of continued social, political, economic, technological, and legal pressures upon ethical business issues and managerial decision making. Prerequisite: graduate standing. (*)

575 International Business 3(3-0)

Familiarize students with the differences in management operations domestically and internationally (the scope, activities, managerial problems and decisions) and challenges facing multinational managers/organizations. Prerequisite: graduate standing. (S)

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)

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)

595 Independent Study (1-3 VAR)

Individual study of a subject determined by the instructor and student with permission of the director. Prerequisite: graduate standing. (F,S,SS)

599 Thesis Research (1-6 VAR)
(F,S,SS)

CHEMISTRY (CHEM)

UNDERGRADUATE COURSES

101 Chemistry and Society 3(3-0)

Chemistry related to the everyday world. Drugs, food, pollution, pesticides, consumer products, energy, and home health. Principally for nonscience majors. (*)

101L Chemistry and Society Lab 1(0-2)

Laboratory is optional. Experiments to exemplify the logical steps of problem solving and explore the physical and chemical world. Corequisite: CHEM 101. (*)

111 Principles of Chemistry 3(3-0)

Fundamental laws, theories and principles of chemical reactions. Not open to chemistry majors or minors. 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. 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 112. (*)

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. 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)

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. Prerequisite: CHEM 121. Corequisite: CHEM 122L. (F,S)

122L General Chemistry Lab II 1(0-2)

Laboratory component to CHEM 122 including qualitative analysis. 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, electro-chemistry acids and bases. Prerequisites: CHEM 121 and 121L. (S)

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. Corequisite: CHEM 221L. (*)

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, properties, and industrial application. Biopolymers will also be considered. Prerequisites: CHEM 302/302L. (*)

411 Biochemistry I 3(3-0)

Chemistry of constituents of living matter, including proteins, carbohydrates, nucleic acids and lipids. An introduction to 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)

Prerequisites: 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. (F,S,SS)

136 (HIST 136) The Southwest United States 3(3-0)
This course traces the culture and historical development of the southwestern United States, including cultural contributions of the American Indian and Hispanic peoples. (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. (S)

230 Chicano: Social and Psychological Study 3(3-0)
Social and psychological forces faced in the Chicano community. (*)

246 (HIST 246) History of Mexico 3(3-0)
This course surveys the major political, economic, social and cultural developments of Mexico from pre-Columbian times to the present. (S)

291 Special Topics (1-3 VAR)
Topics in Chicano studies, identified by student/faculty interest. Prior work in Chicano studies desirable. (*)

303 Chicano Labor History in the United States 3(3-0)
Chicano experience in the American labor market from 1848 to the present. (*)

335 Health in the Chicano Community 3(3-0)
Health care traditions and current health care systems in the barrio. (*)

489 (HIST 489) Borderlands 3(3-0)
History of the Mexican cession to the U.S. from the Indian and Hispanic origins to the present. Prerequisite: CS/HIST 136 or HIST 211 or HIST 201 or HIST 202, or permission of instructor. (*)

493 Seminar (1-3 VAR)
Various problems within the realm of Chicano studies; in-depth, integrated approach. Prerequisite: CS 101. (S)

495 Independent Study (1-3 VAR)
Special topics dealing with the Chicano and society. Prerequisite: CS 101. (F,S,SS)

CIVIL ENGINEERING TECHNOLOGY (CET) UNDERGRADUATE COURSES

101 Introduction to Civil Engineering Technology 3(3-0)
Acquaints CET students with the university and the engineering profession. Laboratory application of algebra, geometry, trigonometry, and computer as used in CET. (CE,F)

102 Surveying I 3(2-2)
Beginning course in plane surveying; covers proper chaining techniques, care and use of engineering levels, differential leveling, traversing, and construction surveying. (CE,F)

103 Surveying II 3(2-2)
Introduction to land, topographic, and construction surveying. Prerequisite: CET 102, or permission of instructor. Corequisite: CET 116. (CE,S)

115 Civil Drafting I 3(0-6)
An introduction to basic drafting, AutoCAD and Structural Detail drafting. Corequisite: CET 102. (F)

116 Civil Drafting II 3(0-6)
An introduction to maps, traverses, contours, plan and profiles, cut and fills. An introduction to architectural plans, elevations and section. Prerequisite: CET 115. Corequisite: CET 103. (CE,S)

117 Computing for CET 3(2-2)
An introduction to BASIC, FORTRAN, and computer spread sheets as used to solve CET applications. Prerequisite: CET 101, or permission of instructor. (S)

202 Statics and Dynamics 4(4-0)
Theory and application of action and reaction forces and moments as applied to structures and bodies at rest and in motion. Prerequisite: MATH 132. (F)

205 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)

207 Construction Materials and Methods 3(3-0)
Properties, uses and methods of assembly of building materials as they apply to the construction industry. (F)

208 Concrete and Asphalt Materials 2(2-0)
Study of portland cement concrete and bituminous pavements. Manufacturing, mix design, placing and finishing of these materials. (S)

208L Concrete and Asphalt Lab 1(0-2)
Testing of concrete and bituminous materials according to ASTM standard testing procedures. Corequisite: CET 208. (S)

215 Advanced Surveying I 3(2-2)
Develops professional skills in surveying, electronic traversing, state plane coordinates, engineering autonomy and global positioning. Prerequisites: CET 103 and MATH 132. (F)

216 Advanced Surveying II 3(2-2)
Highway and route surveys, horizontal and vertical curves, grades, slope staking and earthwork. Prerequisites: CET 103 and MATH 132. (S)

296 Cooperative Education Placement (1-5 VAR)
Industrial cooperative education work experience under the direction 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 Management 2(2-0)
Job specifications, rights and responsibilities of contractor/owner, organization, bonding, contracts, insurance and labor relations. 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)

310 Urban Planning 3(2-2)
Introduction to regional site planning process and subdivision design including preliminary and final plat preparation. Prerequisites: CET 103 and 116. (S)

313 Architectural Drafting I 3(0-6)
Preparation of a complete set of working drawings for a modern residential building. Prerequisite: MET 116. (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 Lab 1(0-2)
Basic engineering soil field lab tests using the ASTM manual as standard guide for conducting tests. Corequisite: CET 315. (S)

320 Introduction to Construction Economy 1(1-0)
Economic and financial aspects of investments in construction projects. Prerequisite: junior standing or permission of instructor. (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 Structural Steel Design 3(3-0)
Structural steel design of beams, columns, girders and trusses to AISC standards. Prerequisite: CET 206. (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 206. (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)

411L Hydraulics Lab 1(0-2)
The laboratory practices of the use of basic hydraulic laboratory instruments to measure water pressure, head losses, and hydraulic jump. Corequisite: CET 411. (F)

412 Hydrology 3(3-0)
Hydrologic cycle including precipitation, streamflow, groundwater runoff and the preparation of hydrographs and frequency analysis. Prerequisite: CET 202. (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. (*)

416 Timber Design 3(3-0)
Fundamental principles of timber design. Prerequisite: CET 206. (S)

421 Architectural Solar Heating 3(3-0)
Passive and active solar heating of building spaces and water. Prerequisite: MATH 132 or equivalent. (S)

425 Construction Scheduling 3(3-0)
Construction project network scheduling using CPM and PERT scheduling techniques. Manual and computer solutions. Prerequisite: CET 304, or permission of instructor. (S)

491 Special Topics 1(1-6 VAR)
Prerequisite: permission of instructor. (*)

493 Seminar 1(1-0)
Seminar where students complete written technical reports and oral presentations covering previous work (other major courses, summer, etc.). Class discussion includes related professional topics (S/U grading). Prerequisites: EN 305 and senior standing. (S)

496 Cooperative Education Placement 1(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 2(1-2)
A general education computer usage skills course covering the MS/DOS operating system, WordPerfect word processing, and Lotus 1-2-3 (Quattro) spreadsheets. This is a competency-based course. (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. (F,S)

103 Word Processing 1(1-1)
A general education computer usage skills course covering the MS/DOS and WordPerfect. This course is competency based. (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)

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 structured programming methods concurrently with the syntax and semantics of the PASCAL language. (F,S)

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 130 (CIS emphasis/minor only). (F,S)

130 Programming Methodology 1(1-0)
Practical concepts of structured programming design, including functional decomposition, program debugging and use of testing tools. Prerequisite: CST 121 or equivalent. (F,S)

131 COBOL Programming I 3(3-0)
ANSI COBOL programming principles for basic business applications, including general program development, coding, execution, and debugging. Prerequisite: CST 121 or equivalent. Corequisite: CST 130. (F)

150 Micro-Computer Software Applications 2(2-0)
Micro-computer software applications extending and enhancing the concepts taught in CST 101 as well as introducing new software and concepts not used in CST 101. Prerequisite: CST 101. Corequisite: 150L. (F)

150L Micro-Computer Software Applications Lab 1(0-2)
Hands-on microcomputer laboratory instruction. Nationally prominent software packages will be used. Corequisite: CST 150. (F)

210 Introduction to Assembly Language 4(3-2)
Introductory concepts of assembler programming for instruction formats, I/O definition, arithmetic and logical operations, conditional statements, and integer data handling. Prerequisite: CST 121 or equivalent. (F,S)

211 C Programming Language 3(3-0)
A comprehensive study of the C language, emphasizing modern software design and implementation. Prerequisite: CST 121 or equivalent. (F,SS)

215 UNIX Operating System 1(1-0)
Explore UNIX features, covering command language, file system, mail, and editing. Shell language tools include pipes, filters and I/O redirection. (F)

225 Introduction to C Language Programming 3(3-0)
An introductory course for non-majors in C language programming including computation, character manipulation, top-down structured programming, sequential files, arrays, records, sorting and searching. Prerequisite: MATH 121 or 132. (S)

231 COBOL Programming II 3(3-0)
ANSI COBOL programming for business applications, including sequential disk, direct, and multi-indexed sequential access and update methods, language concepts for sort and data manipulation. Prerequisite: CST 131 (S)

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 105 or CST 121 or CST 131. (F)

253 (EET 353) Advanced C Programming 3(3-0)

An advanced course in C programming extending the concepts of CST-211. Object-oriented programming concepts using the C++ language. Advanced data structures are used. Prerequisite: CST 211. (S)

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)

280 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 150. (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. Prerequisites: sophomore standing and permission of instructor. (*)

291 Special Topics (1-5 VAR)

(*)

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)

301 Local Area Network Concepts 2(2-0)

Fundamental hardware, software, and data communication concepts necessary to understand a local area network. ARCNET, Ethernet, and Token Ring topologies and network components. Prerequisite: CST 150. Corequisite: CST 301L. (F)

301L Local Area Network Concepts Lab 1(0-2)

Hands-on laboratory experiments designed to illustrate the concepts of CST 301. Prerequisite: CST 150. Corequisite: CST 301. (F)

316 Operating Systems II 3(3-0)

Theory and design of supervisors, concepts of job tasks and data management, scheduling, queuing, multi-programming site management. Prerequisites: CST 122 or CST 211. (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. Prerequisites: 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 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 Projects 3(3-0)

Student accomplish major programming projects utilizing the COBOL, C, or C++ languages. Team programming comprises a major part of the course. Prerequisite: CST 253 or CST 231 and CST 240. (S)

341 Systems Analysis and Design II 3(3-0)

Major projects applying principles of design and analysis as developed in CST 240. Design and implementation of computer-based systems are emphasized. Prerequisite: CST 240. (F)

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 121 and CST 240. (F)

360 Digital Computer Concepts 3(3-0)

Digital techniques including binary codes, Boolean algebra, gates, flip-flops, counters, shift registers and arithmetic operations. Prerequisites: MATH 245 and CST 210. (F)

385 PC Architecture and System Software 3(3-0)

Intensive study of personal computer hardware, peripherals, and operating system technology. Course examines buses, processor cards, disk drives, video cards, MS/DOS internals and diagnostic software. Prerequisite: CST 150. (S)

401 Local Area Network Systems Administration 2(2-0)

Concepts necessary to function as a network system supervisor. Topics such as login scripts, security, directory structure, print servers, and network utilities. Prerequisites: CST 301 and 301L. Corequisite: CST 401L. (S)

401L Local Area Network Systems Administration Lab 1(0-2)

Hands-on laboratory experiments designed to illustrate the concepts of CST 401. Prerequisites: CST 301 and 301L. Corequisite: CST 401. (S)

405 Computer Graphics I 3(3-0)

Introduction to the theory and applications of computer graphics. Graphics images will be produced in two- and three-dimensional representations. Prerequisite: CST 101 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. Prerequisites: CST 321 and 330. (S)

435 Local Area Network Software Development 3(3-0)

Write C language software accessing data structures, libraries and primitives of Novell NetWare. Includes bindery objects, file structures, queue structures, communications, and NetWare Loadable Modules. Prerequisites: CST 211, 301, and 301L. (S)

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)

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)

493 Seminar 1(1-0)

Seminar concerning appropriate career topics in computer information science. Speakers may include guests, faculty or students. Student outcomes will be assessed. Required of majors. Prerequisite: senior standing. (F)

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****102 Economics and Society 3(3-0)**

An examination of current United States and world political and social problems from an economic perspective. (F,S)

201 Principles of Macroeconomics 3(3-0)

Study of fundamental principles with emphasis on macroeconomics. (F,S,SS)

202 Principles of Microeconomics 3(3-0)

Study of fundamental principles with emphasis on microeconomics. 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 its 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. Prerequisites: 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. 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. 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**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)

595 Independent Study (1-3 VAR)

Individual study of a subject determined by the instructor and student with permission of the director. Prerequisite: graduate standing. (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; focuses 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 focusing on established best practices as delineated by the National Association for the Education of Young Children (NAEYC). Prerequisite: Admission to the 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. Prerequisites: MATH 361 and 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. Prerequisites: 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, 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)

Transient Analysis 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. 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-stage 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. Operational amplifiers. 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 measurement 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, or permission of instructor. (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. Prerequisites: MATH 232 and 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 and 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 Electronics III 3(3-0)

High frequency circuit modeling, feedback amplifiers, steady state pulse response, and signal propagation at high frequencies. Prerequisite: EET 212. (F)

351L Electronics III Lab 1(0-2)

Design, construction, and testing of advanced electronic circuits. Corequisite: EET 351. (F)

353 (CST 253) Advanced C Programming 3(3-0)

An advanced course in C Programming extending the concepts of CST 211. Object-oriented programming concepts using the C++ language. Advanced data structures are used. Prerequisite: CST 211. (F,S,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. Prerequisite: EET 255 or equivalent. Corequisite: EET 354L (F,CE)

354L Computer Architecture Lab 1(0-2)

Designing, building, and testing simplified computers. Corequisite: EET 354. (F,CE)

355 Advanced Microcomputer Systems 3(3-0)

Advanced microcomputer systems, including the use and application of system development tools such as macro-assemblers and relocation utilities, and the comparative study of state-of-the-art 16/32-bit processors. 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. Corequisite: EET, 355. (S,CE)

356 Electronics IV 3(3-0)

Industrial electronics including power supplies, power amplifiers, SCRs, Triacs, opto-electronic devices, transducers, instrumentation circuits, and programmable controllers. Prerequisite: EET 351. (S)

356L Electronics IV Lab 1(0-2)

Design and application of industrial electronic circuits and systems. Corequisite: EET 356. (S)

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 an oral presentation of the proposal. Prerequisite: junior standing. (CE,S)

412 Communication Systems 3(3-0)

Conventional AM, FM and sideband analog systems, receiver and transmitter circuits, 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, compensation, root locus, bode plots, the Z transform, digital systems, frequency response techniques. 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 technical projects. 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. Prerequisites: EET 255 and 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 (EN) UNDERGRADUATE COURSES

103 Introduction to Engineering 2(2-0)

Introduction to engineering curriculum and careers. Problem solving and creativity. Spreadsheets, word processing and other computer skills. (F)

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 and 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. (*)

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 and 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 103. (F)

321 Thermodynamics I 3(3-0)

Introduction to energy equations and flows, entropy, kinetic theory and statistical mechanics. Prerequisite: PHYS 221. (F)

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. Corequisite: EN 315. Prerequisite: EN 103. (F)

342 Engineering of Manufacturing Processes 4(3-2)

Materials and processes for manufacturing including machining, casting, and forming processes; design, modeling and control. Prerequisites: EN 105, 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. Prerequisite: EN 103, 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. (*)

420 Simulation and Stochastic Processes 4(3-2)

Analysis of stochastic systems through analytical and experimental methods. Application of simulation emphasizing Monte-Carlo and discrete event modelling. Introduction to queueing theory and Markov chains. Prerequisites: EN 105, 343 and MATH 256 and 356. (S)

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 modelling 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 MATH 356. (S)

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 of systems. Prerequisites: EN 105 and MATH 356. (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 256 and EN 356. (*)

471 Engineering Operations Research 3(3-0)

Techniques for analysis and solution of problems in industrial and management systems. Linear programming, duality theory, sensitivity analysis, and network analysis techniques. Prerequisites: MATH 207 and 224. (S)

473 Production and Computer-Aided Engineering 3(2-2)

Engineering design, modelling and applications in production: automation, flowlines, robotics, numerical control, and computer usage in manufacturing. 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 340 and 471. (F)

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. Prerequisite: EN 471. (F)

488 Industrial Engineering Design Projects 3(3-0)

Application of industrial engineering principles to a design project. Prerequisites: EN 420, 471, 475 and 477. (F,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 the 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 strategem, system development life cycle and phases, system develop-

ment 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 modelling. 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 Simulation and Stochastic Processes 4(3-2)

Analysis of stochastic systems through analytical and experimental methods. Application of simulation emphasizing Monte-Carlo and discrete event modelling. Introduction to queueing theory and Markov chains. Additional work required of graduate students. Prerequisites: EN 105, 343, MATH 256 and 356. (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: EN 571 or equivalent. (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 256 and 356. (*)

571 Engineering Operations Research 3(3-0)

Techniques for analysis and solution of problems in industrial and management systems. Linear program-

ming, duality theory, sensitivity analysis, and network analysis techniques. Additional work required of graduate students. Prerequisites: MATH 207 and 224, or permission of instructor. (S)

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. (F)

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. (F)

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. Heuristic design, expert systems, 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 2(2-0)

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 Research (1-6 VAR)

Preparation of thesis to meet degree requirements. Arranged with major adviser. May be repeated (IP and S/U grading). Prerequisites: graduate standing and adviser approval. (F,S)

ENGLISH (ENG)

UNDERGRADUATE COURSES

101 Composition I 3(3-0)

Beginning course in expository writing, emphasizing skills of written expression, organization, and presentation. (F,S,SS)

102 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 101. (F,S,SS)

106 (ANTHR 106) Language, Thought and Culture 3(3-0)

Cross-cultural introduction to language processes in human society. (F*)

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)

Introduction to the three major literary genres: fiction, poetry, and drama. The main emphasis is on close reading and textual analysis. (*)

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. (F)

212 American Literature II 3(3-0)

Continuation of ENG 210; literature from 1900 to the present. (S)

221 Western World Literature I 3(3-0)

Historical and thematic study of major writers from ancient Greece to the Renaissance. (F)

222 Western World Literature II 3(3-0)

Continuation of ENG 221; literature from the Renaissance to the present. (S)

223 Modern World Literature 3(3-0)

Introduction to modern world literature and to international social, political and economic issues through literary works by authors from around the world. (*)

231 Literature of England I 3(3-0)

Literature and literary history of England from the Anglo-Saxon period to the Romantic period. (*)

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. (*)

240 Survey of Ethnic Literature 3(3-0)

This course provides an introduction to the literature of four major ethnic groups in the U.S.: Native American, African American, Chicano and Asian American. (*)

251 Traditional Grammar Theory 3(3-0)

Primarily for non-majors who wish to improve their understanding of how language works, for teacher education majors, and for English majors who want additional background for advanced language courses. Prerequisite: ENG 102. (*)

254 Science Fiction 3(3-0)

Imaginative literature of fact and fiction, reading, lectures, movies, and television. (*)

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. (*)

291 Special Topics (1-3 VAR)

(*)

304 (SPCOM 304) Language Awareness 3(3-0)

Effects of semantic and pragmatic language factors on human relationships and behavior. How language is used in our society. (*)

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 102, or permission of instructor. (F,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 102, or permission of instructor. (*)

316 Creative Writing: Fiction 3(3-0)

Introduction to creating character, situation, and overall structure, emphasis on imaginative and real-life portrayal. Prerequisite: ENG 102, or permission of instructor. (*)

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. (*)

321 American Romanticism 3(3-0)

A study of the major figures in the development of American Romanticism. Prerequisites: ENG 210 and 212, or permission of instructor. (*)

322 American Literary Realism, 1870-1910 3(3-0)

A study of the development of Realism and Naturalism in American literature during the late-19th century and the early 20th century. Prerequisites: ENG 210 and 212, or permission of instructor. (*)

323 Modern American Literature 3(3-0)

A study of major writers' themes, and developments in American literature from the 1910s to the 1960s. Prerequisites: ENG 210 and 212 or permission of instructor. (*)

330 Modern European Drama 3(3-0)

Survey of major developments in modern European drama. Prerequisite: ENG 101. (*)

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. (*)

340 Advanced Composition 3(3-0)

Advanced forms of nonfiction writing: essays, articles and reports. Prerequisite: ENG 102, 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. (*)

352 English Syntax and Usage 3(3-0)

English usage and language systems, emphasis on forms and functions of language analysis. (*)

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. (*)

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 102, or permission of instructor. (*)

412 Literature for Adolescents 2(2-0)

Literature suitable for adolescents, including classical and contemporary authors, and issues in selection and evaluation. (*)

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. (*)

440 (MACOM 440) Magazine Writing 3(3-0)

Instruction and practice in writing nonfiction magazine articles with emphasis on story research and market selection. Prerequisite: ENG 340, or permission of instructor. (*)

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 3(3-0)

English language from Anglo-Saxon period to present; emphasis on history of linguistic and structural changes. Prerequisite: ENG 251, 352, or permission of instructor. (*)

461 Careers for English Majors 1(1-0)

Identifies and explores graduate school and employment opportunities. (*)

461 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 literary figures or movements, arranged with the cooperating agencies. (*)

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. (*)

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. (*)

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 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 and BUSAD 260. (F)

333 Investment Analysis 3(3-0)

Analysis and forecasting of security markets, industry and company studies, portfolio selection and management. Prerequisite: FIN 330 and BUSAD 260. (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: FIN 330. (F)

337 Insurance 3(3-0)

Principles of insurance with emphasis on the operation and contributions of the insurance industry. Prerequisite: FIN 330. (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. Prerequisite: 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 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)**

Theory and application of investment, financing and dividend decisions to maximize stockholder wealth. Use of analytical cases to solve financial problems facing business firms. Prerequisite: graduate standing. (*)

531 International Financial Management 3(3-0)

Financial theory and practice as applied to the financial management of multinational corporations. Prerequisite: graduate standing. (*)

532 Management of Financial Institutions 3(3-0)

Policies and techniques used by financial institutions to manage liquidity, capital, credit risk, and interest-rate risk. Prerequisite: graduate standing. (*)

533 Investment Portfolio Management 3(3-0)

A rigorous analysis of theory, practice, and strategy leading to the construction, management, and evaluation of investment portfolios by individual and institutional investors. Prerequisite: graduate standing. (*)

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)

595 Independent Study (1-3 VAR)

Individual study of a subject determined by the instructor and student with permission of the director. Prerequisite: graduate standing. (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. (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 101, 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, theaters and excursions. Prerequisite: two years of college study in the language of the country or countries visited and permission of instructor. (*)

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 study of the language used for project. (*)

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. (F,S)

102 Beginning Spoken French II 4(3-2)
Students are placed by the department. Practice in oral, aural, reading and writing experiences. Prerequisite: FRN 101 OR equivalent. (F,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, theaters 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 adviser. (*)

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. (#)

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. (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. (*)

201 Economic Geography 3(3-0)

Areal variations on the earth's surface in human activities related to producing, exchanging and consuming resources. (#)

210 Cultural Geography 3(3-0)

Description, distinction and significance of cultural differentiation based upon language, religion, political organization, urbanization and population. (*)

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. (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)**

Rocks and minerals; weathering, mass-wasting, running water glaciers; and crustal structure, evolution of/and forms, oceanography, ground water, volcanism, earthquakes. Includes a laboratory. (F,S)

101L Earth Science Lab 1(0-2)

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. Prerequisite: GEOL 101. Corequisite: GEOL 123L. (S)

123L Historical Geology Lab 1(0-2)

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 of 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 and 201L, and MATH 126 or 221. (F,S)

GERMAN (GER)**UNDERGRADUATE COURSES****101 Beginning Spoken German I 4(3-2)**

Pronunciation and grammar with oral-aural training. Easy reading and conversation. (F)

102 Beginning Spoken German II 4(3-2)

Students are placed by the department. Practice in oral, aural, reading and writing experiences. Prerequisite: GER 101 or equivalent. (F,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)

Prerequisite: 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 1100 5(5-0)**

Cultural and political growth of civilizations from pre-historic times to 1100; emphasis on the unique contributions of independent cultures to world history. (*)

102 World Civilization From 1100 to 1800 5(5-0)

Cultural and political interaction of civilizations from 1100 to 1800; emphasis on common problems and goals of mankind. (*)

103 World Civilization Since 1800 3(3-0)

Cultural and political interaction of civilization since 1800; emphasis on conflict and resolution. (*)

136 (CS 136) The Southwest United States 3(3-0)

This course traces the culture and historical development of the southwestern United States, including cultural contributions of the American Indian and Hispanic peoples. (F)

201 U.S. History I 3(3-0)

United States history from founding of North American colonies to 1877 Reconstruction era. (*)

202 U.S. History II 3(3-0)

United States from 1877 Reconstruction era to contemporary era. (*)

211 Colorado History 2(2-0)

History, government and economic factors important to the settlement and development of Colorado. (*)

246 (CS 246) History of Mexico 3(3-0)

This course surveys the major political, economic, social and cultural developments of Mexico from pre-Columbian times to the present. (S)

390 Historiography 3(3-0)

Enhances student knowledge of historical profession through developing historical research skills. (*)

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. (*)

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. (*)

306 20th-Century America 3(3-0)

United States from the New Deal to the present. (*)

311 History of United States Foreign Policy 3(3-0)

United States foreign policy from the founding of the republic to the present. (*)

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. (*)

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. (*)

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. (*)

372 History of Modern China 3(3-0)

Cultural and political developments in modern China; emphasis on the interplay between Chinese tradition and western challenges. (*)

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. (*)

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. (*)

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. (*)

458 20th-Century Europe 3(3-0)

Events and personalities from World War I to the present. (*)

489 (CS 489) Borderlands 3(3-0)

History of the Mexican cession to the United States from its Indian and Hispanic origins to the present. Prerequisite: CS/HIST 136 or HIST 201 or HIST 202 or HIST 211, or permission of instructor. (*)

491 Special Topics (1-3 VAR)

Prerequisites: junior or senior status with adequate preparation and permission of instructor. (*)

493 (CS 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. (S)

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. (*)

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. (*)

558 20th-Century Europe 3(3-0)

Events and personalities from World War I to the present. Prerequisite: graduate standing. (*)

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. (*)

591 Special Topics (1-3 VAR)

(*)

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)

UNDERGRADUATE COURSES**101L Basketball 1(0-2)**

(*)

103L Military Fitness 2(0-2)

(*)

104L Personal Fitness 1(0-2)

(*)

105L Soccer 1(0-2)

(*)

106L Softball 1(0-2)

(*)

107L Scuba Diving 1(0-2)

(F,S)

108L Windsurfing 1(0-2)

(*)

109L Volleyball 1(0-2)

(F,S)

110L Weight Training 1(0-2)

(F,S)

113L Whitewater Boating 1(0-2)

(*)

114L Basic Mountaineering Techniques 1(0-2)

(*)

115L Skiing 1(0-2)

(*)

116L Camping 1(0-2)

(F)

117L Backpacking 1(0-2)

(F)

118L Jogging 1(0-2)

(*)

120L Rhythmic Aerobics 1(0-2)

(*)

156L Archery 1(0-2)

(*)

167L Bowling 1(0-2)

(*)

174L Tennis 1(0-2)

(*)

175L Racquetball 1(0-2)

(*)

176L Advanced Life Saving 1(0-2)

Prerequisite: swimming pre-test. (*)

180L Intercollegiate Volleyball 2(0-4)

(F)

181L Intercollegiate Soccer 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)

(S)

186L Intercollegiate Tennis I 2(0-4)

(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. (*)

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 Fitness Activities 3(3-0)

Basic skills and techniques of a total fitness program including weight training, stretching, rhythmic aerobics, water aerobics, circuit training, body composition and assessing fitness levels. (F)

246 Skills and Techniques of Track and Field, Basketball and Softball 3(3-0)

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 (3-0)

Basic skills and techniques of tennis, racquetball, badminton and golf; emphasis on teaching procedures in these activities. (S)

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)

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. (*)

276L Water Safety Instructor Certification 2(0-2)

Water safety instruction certification may be earned in this course. Prerequisite: advanced life saving. (*)

280L Intercollegiate Volleyball 2(0-4)

(F)

281L Intercollegiate Soccer 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)

(S)

286L Intercollegiate Tennis II 2(0-4)

(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: HP 289L. (F,S)

442 Advanced Athletic Training 3(3-0)
Preparation of pre-sports medicine majors to successfully complete the National Athletic Trainers Certification test. Prerequisites: BIOL 320, KIN 254, KIN 364, HP 342. (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 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. Prerequisite: KIN 254. (S)

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. (*)

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)

UNDERGRADUATE COURSES

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. (*)

INDUSTRIAL SCIENCE AND TECHNOLOGY (IST)

UNDERGRADUATE COURSES

101 Woods Technology 3(1-4)
Safe and efficient selection, utilization and maintenance of equipment to process forest products material used in construction and manufacturing. (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)

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)

121 Industrial Materials Technology 3(2-2)
Study of often-used and innovative industrial materials. Properties and application of metals, polymers, ceramics, composites and others. (F)

122 Building Materials 3(2-2)
Properties and application of popular and innovative construction materials, including ceramics, forest product materials, metals, sealants, insulations, coatings and others. (S)

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. (F,S)

135 Period and Modern Furniture Design 3(3-0)
The history and practical application of period and modern styles of furniture. (*)

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)

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)

206 Commercial and Residential Construction 3(1-4)
Concepts and procedures used to construct commercial, manufacturing and residential buildings; public works; and transportation and power systems. Prerequisite: IST 101. (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)

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. (*)

320 Industrial Manufacturing I 3(1-4)
Industrial processes and techniques. Focus on casting, material removal and plastics. Includes manufacturing systems and cost estimating. Prerequisite: IST 121 or 122. (F)

331 Industrial Manufacturing II 3(1-4)
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. Prerequisite: IST 320 (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)

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 221 or 122, 206. (*)

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. (F)

377 Curriculum Development and Evaluation in 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)

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)

455 Methods/Techniques of Teaching 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. (S)

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. 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. 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. 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 humanities and social sciences. Guest speakers and visits to museums, exhibits, and cultural events related to the course's theme. 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 humanities and social sciences. Guest speakers and visits to museums, exhibits, and cultural events related to the course's theme. 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 humanities and social sciences. Guest speakers

and visits to museums, exhibits, and cultural events related to the course's theme. Prerequisite: acceptance into university Honors Program. Corequisites: IS 104, 105. (S)

151 Introduction to Academic Life 2(2-0)

To provide an opportunity for students to learn and adopt methods to be successful in college. Critical thinking, writing, and time management are emphasized. (F,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. 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. 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. 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. 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. 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. Prerequisite: acceptance into the university Honors Program. Corequisites: IS 204, 205. (S)

291 Special Topics (1-3 VAR)

(*)

301 Junior Honors Seminar 3(3-0)

A thematic, interdisciplinary, small-group seminar dealing with scientific, technological, sociological, cultural, 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,S,SS)

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,S)

490 Special Projects 2(2-0)

Prerequisite: three hours of previous honors work and IS 301. (*)

491 Special Topics (1-3 VAR)

(*)

ITALIAN (ITL)

UNDERGRADUATE COURSES

101 Introduction to Italian I 4(3-2)

Pronunciation and grammar with oral-aural training. Easy reading and conversation. (F,S)

102 Introduction to Italian II 4(3-2)

Students are placed by the department. Practice in oral, aural, reading and writing experiences. Prerequisite: ITL 101 or equivalent. (F,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. (S)

302 Advanced Italian Grammar II 3(3-0)

Linguistic analysis, vocabulary building and composition. Prerequisite: ITL 202 or permission of instructor. (S)

361 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. (F)

362 Italian Civilization II 3(3-0)

Prerequisite: ITL 202 or permission of instructor. (S)

494 Field Experience (1-7 VAR)

Communication, lectures by writers, artists, political leaders and specialists. Visits to museums, attendance at movies, theaters 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. (S)

442 Physiological 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,SS)

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,S)

370 Operations Planning and Control 3(3-0)
Basic concepts and techniques of planning, executing and controlling of production rates and inventory levels to achieve customer satisfaction at minimum cost. Prerequisite: MGMT 311. (F)

375 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)

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)

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. (S)

460 Operations 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. Prerequisite: MGMT 311. (S)

468 Total Quality Management 3(3-0)
Concepts and techniques of quality improvement processes. Defining quality in customer satisfaction terms and improving quality of products and service through modern techniques. Prerequisite: MGMT 311. (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. Prerequisite: senior standing in the School of Business and completion of all core courses. (F,S,SS)

485 Management Policy and Strategy 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

511 Production/Operations Management 3(3-0)
Managerial perspective of operations functions, understanding of analytical tools to solve operations problems, applied operations issues, and develop decision-making skills. Cases are used. Prerequisite: graduate standing. (S)

520 Management of Organizational Behavior 3(3-0)
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. Prerequisite: graduate standing. (F)

521 Theories of Organizational Design 3(3-0)
Identification of external environments faced by organizations and theories of organizational design that enable organizations to operate more effectively within their respective environments. Prerequisite: graduate standing. (*)

523 Management of Non-Profit Organizations 3(3-0)
Examines differences among public, charitable, and private organizations regarding their external environments, goals, strategies, administrative procedures, operations, and human resource management. Prerequisite: graduate standing. (*)

560 Management Information Systems 3(3-0)
The development of a framework for understanding and analyzing use of information by organizations through computer-based systems and this framework's potential for enhancing effectiveness of managerial decision making. Prerequisite: graduate standing. (F)

567 Computer Simulation 3(3-0)
Recognition of problems suited for simulation solution, building, verifying, validating, and analyzing models using simulation software. Interpretation of simulation results. Prerequisites: BUSAD 260, MGMT 311, graduate standing, or permission of instructor. (F)

585 Management Policy and Strategy 3(3-0)
Use of the case method to examine policy formulation and strategic decision making by top management under conditions of uncertainty. Prerequisite: graduate standing. (*)

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)

595 Independent Study (1-3 VAR)
Individual study of a subject determined by the instructor and student with permission of the director. Prerequisite: graduate standing. (F,S,SS)

599 Thesis Research (1-6 VAR)
(*)

MARKETING (MKTG) UNDERGRADUATE COURSES

340 Principles of Marketing 3(3-0)
Analytical 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 planning, directing and controlling sales efforts. Organizing, recruiting, selecting, training, compensating, motivating, and evaluating. Forecasting sales, designing and allocating territories. 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)

345 Retail Management 3(3-0)
Issues in buying, maintaining inventory, displaying, designing store layouts, promoting, providing services and general merchandising of products for improving retail profitability. Prerequisite: MKTG 340. (S)

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)

350 International Marketing 3(3-0)

Effects of culture, political and legal structures on marketing. Planning for international products, services, promotion, pricing, distribution and impact of trade groups. 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. (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,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. Prerequisite: senior standing in School of Business and completion of all core courses. (F,S,SS)

490 Special Projects 1(1-6 VAR)

(*)

491 Special Topics 1(1-3 VAR)

Prerequisite: permission of instructor. (*)

495 Independent Study 1(1-3 VAR)

Prerequisite: senior standing in School of Business and permission of department chair. (F,S,SS)

496 Internship 1(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 3(3-0)**

Emphasizes an understanding of market behavior, coordination and implementation of the marketing mix with other managerial decisions, and the integration of theory through use of cases. Prerequisite: graduate standing. (S)

541 Strategic Marketing 3(3-0)

A thorough analysis of decision making in strategic marketing, in product and service industries, profit and non-profit institutions, using case analysis and readings. Prerequisite: MKTG 540. (F)

591 Special Topics 3(3-0)

(*)

592 Research 1(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)

595 Independent Study 1(1-3 VAR)

Individual study of a subject determined by the instructor and student with permission of the director. Prerequisite: graduate standing. (F,S,SS)

599 Thesis Research 1(1-6 VAR)

(*)

MASS COMMUNICATIONS (MACOM)**UNDERGRADUATE COURSES****101 Media and Society 3(3-0)**

The development, functions and effects of the mass media in relation to the individual, society and the global community. (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 101 and 102. (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)

211 Desktop Publishing 3(1-4)

To develop computer publishing and design skills with varied software packages and within PC and Mac environments, preparing students for publication design and editing careers. Prerequisite: word processing literacy. (F,S,SS)

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. (*)

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. (F,S)

224 (SPCOM 224) Broadcast Announcing 3(3-0)

Study and application of the principles of oral communication to radio and television announcing. (F,S)

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,S)

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. (*)

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. (*)

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. (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 media; emphasis on the use of creative strategy. Prerequisite: MACOM 216 and MACOM 302, 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. (*)

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. (*)

325 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 Lab (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. (*)

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 280. (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. (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 Nielsen, Arbitron, SRDS, content analysis and related data sources. (F,S)

426 TV Documentary Production 5(3-4)

Actual experience in planning, scripting and producing documentary video production on locations throughout southeastern Colorado for broadcast and public service agencies. Prerequisites: MACOM 326 and (S)

440 (ENG 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. (*)

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. (*)

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 taken for a maximum of 10 hours. 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. (*)

MATHEMATICS (MATH)**UNDERGRADUATE COURSES**

A grade of C or better is required for prerequisite courses.

099 Intermediate Algebra 4(4-0)

A course designed to broaden and deepen algebraic problem-solving skills. Topics include systems of equations, exponents, radical, complex numbers, quadratic equations, factoring polynomials, function notation and graphs (S/U grading). Prerequisite: one year of high school algebra. (F,S,SS)

109 Mathematical Explorations 3(3-0)

Emphasis on quantitative reasoning and connections between mathematics and society. Topics chosen from management science, social decision making, statistics, probability, growth models and geometry. Prerequisite: two years high school math to include one year of high school algebra. (F,S,SS)

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. (*)

121 College Algebra 4(4-0)

Solutions of algebraic equations, graphs of rational functions, exponential and logarithmic functions, systems of equations, matrices, and determinants. Prerequisite: MATH 099 or two years of high school algebra. (F,S,SS)

122 College Trigonometry 2(2-0)

Trigonometric and circular functions, identities, inverse functions, vectors, complex numbers. Prerequisite: MATH 121 or equivalent. (F,S)

124 Precalculus Math 5(5-0)

Polynomial, rational, exponential and logarithmic functions; solution of systems of equations; trigonometric, circular and certain special functions. Prerequisite: two years of high school algebra or equivalent. (F,S)

126 Calculus and Analytic Geometry I 5(5-0)

Introduction to limits, continuity, differentiation and integration with selected applications. 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. 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. Prerequisite: MATH 131. (F,S)

158 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. Prerequisite: MATH 099 or equivalent. Recommended MATH 121. (F,S,SS)

207 Matrix and Vector Algebra with Applications 2(2-0)

Systems of equations, matrix representation of systems, solution of systems, inverses, determinants, and Cramer's Rule. Vectors, scalar and cross-products, applications to two- and three-dimensional geometry. Prerequisite: MATH 124 or equivalent. Corequisite: Majors and minors should take this course concurrently with MATH 224. (F,S)

220 Quantitative Analysis for Business 3(3-0)

An algebra-based introduction to quantitative methods needed for business. Prerequisite: MATH 121 or equivalent. (F,S,SS)

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. Prerequisite: MATH 121 or equivalent. (F,S)

224 Calculus and Analytic Geometry II 5(5-0)

Differentiation and integration of trigonometric, logarithmic, and other transcendental functions. Infinite sequences and series, parametric representation of curves, and selected applications. Prerequisite: MATH 126. Corequisite: Majors and minors should take this course concurrently with MATH 207. (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. Prerequisite: MATH 132, 124, or equivalent. (F,S)

232 Calculus for Engineering Technology II 3(3-0)

Continuation of MATH 231. Prerequisite: MATH 231. (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. Prerequisite: MATH 121 or equivalent. (F)

256 Probability for Engineers and Scientists 3(3-0)

A calculus-based introduction to applied probability and stochastic processes. An intuitive study of random variables, special distributions, expectations, and limit theorems. Prerequisite: MATH 224, or permission of instructor. (S)

291 Special Topics (1-3 VAR)

Prerequisites: permission of instructor and approval of the department chair. (F,S)

307 Introduction to Linear Algebra 3(3-0)

A rigorous development of vector spaces and linear transformations. Prerequisites: MATH 207 and 224 or equivalent. (F,S)

320 Introduction to Mathematical Thought 3(3-0)

A rigorous introduction to sets, logic, mathematical proof, functions, and equivalence relations. Prerequisite: MATH 224. MATH 307 or MATH 325 recommended. (F,S)

325 Intermediate Calculus 3(3-0)

Continuation of MATH 224. Vector valued functions and multivariable calculus. Prerequisites: MATH 207 and 224. (F,S)

327 Introduction to Algebraic Systems 3(3-0)

Introduction to groups, rings, and fields and their elementary properties. Prerequisite: MATH 320, or permission of instructor. (S)

330 Introduction to Higher Geometry 3(3-0)

Euclidean, hyperbolic, finite, and transformation geometries, models, and constructions. Prerequisite: MATH 224, or permission of instructor. (S)

337 Differential Equations I 3(3-0)

First order differential equations, homogeneous and non-homogeneous 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: recommend MATH 325. (*)

342 Introduction to Numerical Analysis 3(3-0)

Numerical solutions of polynomial, differential, integral, and other equations using the computer. Prerequisites: MATH 207 and a programming language, or permission of instructor. (*)

348 Numerical Methods 3(3-0)

Linear and non-linear systems of equations, systems of differential equations and boundary value problems, rational function approximations. Prerequisites: MATH 307 and a programming language. (*)

350 Probability 3(3-0)

Introduction to probability theory and stochastic processes. Probability spaces, random variables and their distributions, exponential and Poisson processes, limit theorems and applications. Prerequisite: MATH 325. (F)

356 Statistics for Engineers and Scientists 3(3-0)

Calculus-based introduction to statistical methods. Sampling distributions, hypothesis testing, linear regression, design of experiments using ANOVA. Data analysis with Minitab. Prerequisite: MATH 256 or MATH 350. (F)

360 Elementary Concepts of Mathematics I 3(3-0)

Sets, numeration theory, whole numbers, algorithms, number theory, integers and intuitive geometry. Prerequisite: C or better in any 100 level math course. Recommend MATH 121. (F,S)

361 Elementary Concepts of Mathematics 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 3(3-0)

Instructional materials, methods, evaluation and other related topics. Prerequisite: MATH 224. (S)

411 Introduction to Topology 3(3-0)

An introduction to topological spaces, homeomorphisms, topological properties, and separation axioms. Prerequisite: MATH 320. (*)

419 Number Theory 3(3-0)

Divisibility, prime numbers, linear congruences, multiplicative functions, cryptography, primitive roots, and quadratic residues. Prerequisite: MATH 307 or MATH 320. (F)

421 Advanced Calculus I 3(3-0)

An introductory course in real analysis providing a rigorous development of the concepts of elementary calculus. Prerequisites: MATH 320 and 325. (F)

422 Advanced Calculus II 3(3-0)

Additional topics from elementary real analysis, theory of multivariable calculus, Stieltjes and line integrals. Prerequisite MATH 421. (*)

425 Complex Variables 3(3-0)

An introduction to complex function theory. Complex numbers, sequences and series, the calculus of complex functions, analytic functions, and conformal mappings. Prerequisite: MATH 325. (*)

443 Optimization Techniques 3(3-0)

Linear programming and its derivatives, network optimization and their applications to practical problems. Prerequisites: MATH 307 and knowledge of a programming language. (*)

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. (*)

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: MATH 356. (*)

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 356. (*)

463 History of Mathematics 3(3-0)

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: permission of instructor. (*)

507 Linear Algebra 3(3-0)

Vector spaces, linear transformations, matrix representation, canonical form. Prerequisite: permission of instructor. (*)

521 Intermediate Analysis 3(3-0)

Point set theory, including the Bolzano-Weierstrass and the Heine-Borel theorems, theory of differentiation and Riemann integration, and sequences and series of functions. Prerequisite: permission of instructor. (*)

527 Abstract Algebra 3(3-0)

Groups, rings, integral domains, quotient rings, ideals, fields, homomorphisms and related topics. Prerequisite: permission of instructor. (*)

530 Advanced Geometry 3(3-0)

Foundations of geometry, geometric transformations, and applications. Prerequisite: permission of instructor. (*)

541 Computers 3(3-0)

The use of the computer in mathematical investigations, including sophisticated comprehensive computer programs such as Mathematica. Prerequisite: permission of instructor. (*)

544 Mathematical Methods of Applied Science 3(3-0)
Topics in applied mathematics, including deterministic and stochastic models, programming, optimization, networks, and simulation. Prerequisite: permission of instructor. (F)

560 Elementary Statistical Methods 3(3-0)
Sampling techniques, testing of hypotheses, experimental design, analysis of variance, and regression as an aid to research in behavior, education and science. Prerequisite: permission of instructor. (*)

560 Concepts in Elementary School Mathematics (1-3 VAR)
Problems of the curriculum, methods of teaching and evaluation in the elementary school. Prerequisite: permission of instructor. (SS)

577 Concepts in Secondary School Mathematics (1-3 VAR)
Problems of teaching secondary school mathematics; the slow learner, methods, gifted students, evaluation. Prerequisite: permission of instructor. (*)

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, polymeric and composite materials. Phase diagrams, microstructure,

deformation and recrystallization; transformations and properties-structure relationships. Prerequisite: CHEM 111. (CE,S)

106L 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. (CE,F,S)

112 Computer-aided Drafting 3(1-4)
Computer-aided drafting to include geometric constructions, orthographic projections, sectioning and dimensioning. 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. (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, or permission of instructor. (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. Prerequisite: MET 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 non-destructive testing. Corequisite: MET 304. (*)

305 Computer Programming and Algorithms 3(3-0)
Scientific programming languages and techniques. Languages supported dependent on equipment on hand. Prerequisite: MATH 132 (F)

311 Quality Control 3(3-0)
A study of quality control, program planning and production analysis. Prerequisite: BUSAD 260. (S)

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 and MATH 232. (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. Prerequisites: MET 204 and MATH 132. (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 and programming 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)
Demonstrates energy technology applications. Corequisite: MET 442. (S)

451 Industrial Robotics 2(2-0)

History, basic theory, kinematics, geometry, control and application. Prerequisite: permission of instructor. (*)

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)

Principles and applications of heating, ventilating 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 co-op coordinator; junior or senior standing in MET. (F,S,SS)

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 101. 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)

105 Introduction to Music and Computers 1(1-0)

Introduction to Apple Macintosh and IBM computer hardware and software dedicated to composing, sequencing, performing and printing music. (F,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)

Significant musical compositions and their composers, placed within the historical eras in which they appear; analysis and description of music forms and terms. (F,S,SS)

119 How to Read Music 3(3-0)

Music notation in its various rhythmic and pitch patterns related to the treble and bass clefs. (F,S)

120 Jazz and Folk Music 3(3-0)

Beginning and development of jazz and folk music in the United States. (F,S)

126 Introduction to Opera 3(3-0)

A survey of operas performed by major opera companies today. (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. Prerequisites: 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. Prerequisites: MUS 201 and 201L. Corequisite: MUS 202L. (S)

202L Theory IV Lab 1(0-2.5)

Continuation of MUS 201L. Prerequisites: 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. One hour per week symposium attendance required. Prerequisite: MUS 162. (F)

262 Applied Music Major 2(0-1)

Continuation of MUS 261. One hour per week symposium attendance required. Prerequisite: MUS 261. (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(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-Classical Style. Prerequisite: MUS 118. (F)

322 Music History II 3(3-0)

A comprehensive survey of music history from the Classical 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,S)

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. One hour per week symposium attendance required. Prerequisite: MUS 262. (F)

362 Applied Music Major 2(0-1)

Continuation of 361. One hour per week symposium attendance required. Prerequisite: MUS 361. (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 I 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 Jazz 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. One hour per week symposium attendance required. Prerequisite: MUS 362. (F)

462 Applied Music Major 2(0-1)

Continuation of MUS 461. One hour per week symposium attendance required. Prerequisite: MUS 461. (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 re-

search 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****231 Introduction to Professional Nursing 4(4-0)**

Historical and theoretical basis for professional nursing practice. Introduction to the health care system, philosophy of the nursing program, the nursing process and human needs. Prerequisites: admission to BSN program. (S)

232 Fundamentals of Nursing 2(2-0)

Theory for utilization of the nursing process in meeting primary health needs of individuals. Basic nursing interventions and therapeutic communications are emphasized. Prerequisite: admission to BSN program. Corequisite: NSG 232L. Pre/Corequisite: NSG 231. (S)

232L Fundamentals of Nursing Lab 4(0-6)

Application of NSG 232. Laboratory practice assists students in developing fundamental competencies for providing basic nursing care to individual clients. Corequisite: NSG 232. (S)

270 Nursing Pathophysiology 3(3-0)

Introduction to the basic disease processes of individual body systems. Incorporates nursing assessment/diagnosis with associated intersystem diseases. Prerequisites: BIOL 206/206L, 223/223L, 224/224L, CHEM 111/111L, 112/112L. (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. (*)

302 Health Assessment 3(3-0)

Systematic assessment of individuals across the life span. Provides principles necessary to determine potential deviations from normal in evaluating the health status of individuals across a lifespan. Prerequisites: NSG 231, 232/232L, 270 or RN. Corequisite: NSG 302L. (C, F)

302L Health Assessment Lab 1(0-2)

Application of NSG 302. Provides the student with the opportunity to collect and record complete health histories and practice skills of physical assessment of individuals throughout the lifespan. Corequisite: NSG 302. (C, 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)

307 Health and Disease Systems 3(3-0)

Alterations and adaptations of individual body systems to disease processes. Prerequisites: BIOL 223/223L, 224/224L, CHEM 111/111L, 112/112L. Registered Nurse License and/or permission of instructor. (CE,F,S)

309 Professional Nursing Practice 4(4-0)

Introduces Registered Nurses to the theoretical basis for professional nursing practice and the philosophy of the nursing program family and group theories. Prerequisite: Registered Nurse license. (F,S)

311 Advanced Concepts in Nursing 3(3-0)

Concepts of professional nursing practice including nursing roles and values, group and family theory. Prerequisite: Registered Nurse license. (F,S)

312 Nursing Care of Childbearing Families 3(3-0)

Theory for nursing care of the neonate and procreative family during the perinatal period. Includes health promotion, family theory and human sexuality. Prerequisites: NSG 231, 232/232L, 270. Corequisite: NSG 312L. Pre/Corequisite: NSG 302/302L (F)

312L Nursing Care of Childbearing Families Lab 3(0-6)

Application of NSG 312. Clinical experiences emphasize use of the nursing process in meeting needs of the neonate and family during the perinatal period. Corequisite: NSG 312. (F)

322 Nursing Care of the Adult I 3(3-0)

Nursing process directed toward principles of therapeutic nursing care of adults health promotion and with common health problems. Prerequisite: NSG 231, 232/232L, 270. Corequisite: NSG 302/302L, 322L. (F)

322L Nursing Care of the Adult I Lab 3(0-6)

Application of NSG 322. Clinical experiences emphasize use of the nursing process in meeting selected needs of adult clients. Corequisite: NSG 322. (F)

332 Nursing Care of Children and Adolescents 3(3-0)

Theory for nursing care of children and adolescents. Emphasizes the nursing process related to health promotion, maintenance and restoration for the child, adolescent and family. Prerequisites: NSG 231, 232/232L, 270, 302/302L, 312/312L. Corequisite: NSG 332L. (S)

332L Nursing Care of Children and Adolescents Lab 3(0-6)

Application of NSG 332. Clinical experiences emphasize use of the nursing process in meeting health related needs of children and adolescents. Corequisite: NSG 332. (S)

351 Research in Nursing 3(3-0)

Introduction to the steps of research methodology. Analysis of research studies provides the basis for determining integration of appropriate research into nursing practice. Prerequisites: MATH 156, NSG 231, 270, 302/302L, 322/322L. (S)

372 Clinical Practicum 4(4-0)

An elective course which provides an opportunity for a concentrated clinical practicum in a variety of patient care settings. Prerequisite: completion of all junior level nursing courses. (*)

382 Psychiatric Nursing 3(3-0)

Nursing process directed toward care of individuals and families experiencing mental illness. Includes concepts of mental health, group process and group leadership. Prerequisites: NSG 322/322L, 302/302L, 312/312L. Corequisite: NSG 382L. (CE,S)

382L Psychiatric Nursing Lab 3(0-6)

Application of NSG 382. Clinical experiences emphasize all components of the nursing process in meeting the needs of individuals and families experiencing mental illness. Corequisite: NSG 382. (S)

391 Special Topics (1-5 VAR)

Prerequisite: permission of instructor. (*)

401 Professional Issues in Nursing 2(2-0)

Exploration of professional, ethical and legal issues related to professional nursing. Prerequisite: completion of all junior level nursing courses. (F)

404 Core Interventions in Nursing III 2(2-0)

Continuation of pharmacodynamics, drug classification related to concurrent nursing course content in NSG 420. Prerequisites: NSG 352/352L, 362/362L and 372, 401. Corequisites: NSG 404 and 420L. (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. Prerequisites: NSG 352 or 362, 372, and NSG 401. Corequisites: NSG 404 and 420. (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. Levels of psychiatric intervention receive special emphasis. Prerequisites: NSG 352 or 362 and 404/404L. (F)

408L Nursing and Psychological Wellness 3(0-6)

Practicum course to apply principles and techniques of psychiatric nursing concurrent with NSG 408L content. Prerequisites: NSG 362/362L or 352/352L. Corequisite: NSG 408. (F)

420 Nursing Care of the Adult II 3(3-0)

Builds on content in NSG 322. Includes complex, acute and chronic health problems of individuals and continuity of care within the health care system. Prerequisite: completion of all junior nursing courses. Corequisite: NSG 420L. (F)

420L Nursing Care of the Adult II Lab 2(0-4)

Application of 420. Students utilize expanded data base and action strategies to meet complex health needs of individuals. Includes technological skills for nursing interventions. Corequisite: NSG 420. (F)

431 Gerontological Nursing 3(3-0)

An elective theory course which focuses on nursing interventions for older adults. Prerequisite: completion of all junior level nursing courses. (F,S)

442 Community and Family Nursing 4(4-0)

Theory in application of the nursing process, public health principles and concepts related to families and communities. Prerequisite: completion of all junior level nursing courses. Corequisites: NSG 401, 442L. (F)

442L Community and Family Nursing Lab 3(0-6)

Application of NSG 442. Selected experiences in community health settings, health education and health promotion are emphasized. Corequisite: NSG 442. (F)

451 Nursing Management 3(3-0)

Theories and skills which enhance the nurse's role as leader and manager in health care and community systems. Prerequisites: NSG 401, 420/420L, 442/442L. Corequisites: NSG 452/452L. (S)

452 Nursing Process: Synthesis 3(3-0)

Synthesis of previous course work with integration of theories, research and the nursing process in meeting complex health needs of clients from diverse cultural backgrounds. Prerequisites: NSG 401, 420/420L, 442/442L. Corequisite: NSG 451/452L. (S)

452L Nursing Process: Synthesis Lab 3(0-6)

Application of NSG 452. Synthesis of process and content of nursing in managing client groups in acute and rehabilitation settings. Corequisite: NSG 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, health education, epidemiology, and referral and coordination. Prerequisites: NSG 352/352L, 408/408L, 420/420L. Corequisite: NSG 454L. (S)

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. (S)

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: permission of instructor. (F,S,SS)

495 Independent Study 1(1-6 VAR)

(*)

PHILOSOPHY (PHIL)**UNDERGRADUATE COURSES****101 Introduction to Problems in Philosophy 3(3-0)**

Some of the crucial problems in philosophy, with solutions from the major philosophers. (*)

102 Philosophical Literature 3(3-0)

Philosophical literature that focuses on such questions as what is the nature of reality, how do we know what we know, and for what kind of life should we strive. (*)

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. (*)

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. (*)

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. (*)

110 Philosophy of Religion III 1(1-0)

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. (*)

120 Non-western World Religions 3(3-0)

A study of major world religions including Buddhism, Confucianism, Hinduism, Islam, Jainism, Sikhism, Shinto, Taoism, Zoroastrianism. (*)

200 Plato and the Greeks 3(3-0)

Introduction to the realm of philosophical thinking through a study of select dialogues by Plato. Special emphasis on "The Republic." (*)

204 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. (*)

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. (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. (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. (F,S)

110 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. (F,S)

140 Conceptual Physics 3(3-0)

A conceptual approach to light, energy sources, conservation, atoms and nuclei, nuclear radiation. Emphasis on phenomena encountered in every day life and that affect public policy. (F,S)

140L Conceptual Physics Lab 1(0-2)

Optional laboratory to accompany PHYS 140. Experiments in light, solar energy, atomic and nuclear physics with emphasis on qualitative understanding of observations. Corequisite: PHYS 140. (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. Prerequisite: two years high school algebra. Corequisite: PHYS 201L. (F,S)

201L Principles of Physics I Lab 1(0-2)

Corequisite: PHYS 201. (F,S)

202 Principles of Physics II 3(3-0)

Electrostatics, electromagnetism, light, atomic and nuclear physics. Prerequisite: PHYS 201. Corequisite: PHYS 202L. (F,S)

202L Principles of Physics II Lab 1(0-2)

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. Prerequisite: high school physics or PHYS 201, or permission of instructor. Prerequisite or Corequisite: MATH 126. Corequisite: PHYS 221L. (S)

221L General Physics I Lab 1(0-2)

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. Prerequisite: PHYS 221. Corequisites: PHYS 221 and 222L. (F)

222L General Physics II Lab 1(0-2)

Corequisite: PHYS 222. (F)

291 Special Topics 1(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 Schrodinger 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(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(1-2 VAR)

Prerequisite: junior or senior standing; permission of department chair. (*)

499 Thesis Research 1(1-0)

Students write a research paper describing their own research. Prerequisite: senior standing in the department. (F,S)

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 Schrodinger 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. (S,SS)

101 American National Politics 3(3-0)

Basic processes in American politics. Principles and structure of national governments. (*)

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. (S)

105 Understanding Human Diversity 3(3-0)

Americans live in a complex and diverse society. This course examines the nature, impact and strategies for dealing with diversity in personal and social contexts. (*)

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. (F)

200 Understanding Human Conflict 3(3-0)

Study of conflict: personal, social, institutional, ethnic, and international. Conflict resolution and management will also be addressed. (*)

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. (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)

250 Scope and Methods in Political Science 3(3-0)

Introduction to the discipline of political science and its subfields as well as the basic methods and tools of research in political science. (*)

260 Power: Political and Economic Systems 3(3-0)

This course focuses on the idea of power. Included are basic concepts, philosophies, and effects of political and economic power. (*)

291 Special Topics (1-3 VAR)

Independent study involving specialized reading and research. (*)

300 Political Parties and Elections 3(3-0)

Examines the organization and function of political parties and the roles of political parties, pressure groups, and public opinion in American elections. Prerequisite: POLSC 101. (F)

305 International Relations 3(3-0)

Study of international systems and organizations. Special emphasis on the principal sources of conflict and the study of conflict management. Prerequisite: POLSC 201 or 202. (S)

320 Legal Research Methods 3(3-0)

Introduction to the basic reference materials of legal research. Use of law libraries, interpretation of statutes and judicial decisions and preparation of legal memoranda. (*)

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 and liberties of 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 Administration 3(3-0)

Role of public bureaucracy in modern society. Principles and processes of public administration, personnel management and administrative responsibility. Prerequisite: POLSC 101. (*)

340 Public Policy 3(3-0)

Introduces the process of formulation, implementation, and evaluation of public policy. Examines program development and execution in the context of political, economic, and institutional environments. Prerequisite: POLSC 101. (*)

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)

440 Area Study: Europe and The Soviet Union 3(3-0)

Introduction to the political, economic and military structures and processes of the region. (*)

445 Area Study: Latin America 3(3-0)

Introduction to the political, economic, and military structures and processes of the region. (*)

450 Area Studies: Asia and The Pacific 3(3-0)

Introduction to the political, economic and military structures and processes of the region. (*)

455 Area Study: Africa/Middle East 3(3-0)

Introduction to the political, economic and military structures and processes of the region. (*)

473 American Political Thought 3(3-0)

Development of American segment of modern political thought from colonial times to present. Interrelationship of individuals, ideas and institutions shaping modern American political responses. (*)

480 Practicum in Politics and Public Service (3-6 VAR)

For advanced students. Practical experience as interns in governmental agencies, political parties or legal offices. Prerequisite: departmental permission. (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****100 General Psychology 3(3-0)**

Overview of the field of psychology including learning, perception, motivation, emotion, heredity, personality, development, abnormal and psychotherapy. (F,S,SS)

101L General Psychology Lab 1(0-2)

Laboratory exercises utilizing active student involvement in the topics covered by General Psychology. Corequisite: PSYCH 100. (F,S)

105 Understanding Human Diversity 3(3-0)

Americans live in a complex and diverse society. This course examines the nature, impact and strategies for dealing with diversity in personal and social contexts. (*)

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. (F,S,SS)

130 Psychology of Everyday Life 2(2-0)

Application of psychological principles to everyday experiences. (F,S,SS)

151 Introduction to Human Development 3(3-0)

Survey of human development through life span. (F,S,SS)

201 Introduction to Data Analysis 3(3-0)

Introduction to descriptive and inferential statistics. Probability and hypothesis testing procedures will be considered. Parametric and nonparametric techniques will be described. Prerequisites: PSYCH 101 and two years high school algebra or equivalent. Corequisite: PSYCH 201L. (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. (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. (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. (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. (*)

222 Understanding Animal Behavior 3(3-0)

Basic comparative and ethological perspectives regarding animal behavior. Scientific techniques for observation of animal behavior are demonstrated at the Pueblo Zoo. (F,S)

231 Psychology of Family Behavior 3(3-0)

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. (F)

241 Human Sexuality 2(2-0)

Psychological and biological aspects of human sexual behavior. Prerequisites: sophomore standing and 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 100. (S)

251 Infancy, Childhood and Preadolescence 3(3-0)

Physical, social, cognitive and emotional growth of the individual from conception through preadolescence. Topics include prenatal development, language development, attachment, and sexual development. Prerequisite: PSYCH 100. (F,S)

252 Adolescence, Adulthood and Aging 3(3-0)

Physical, social, cognitive and emotional growth of the individual from adolescence through old age. Topics include identity, intimacy, relationships, intellectual functioning, and issues of aging. Prerequisite: PSYCH 100. (F,S)

295 Independent Study (1-3 VAR)

Prerequisites: psychology major or minor and 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. Prerequisites: PSYCH 100 and 201. (F,S)

301L Introduction to Psychological Experimentation Lab 1(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 100. (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 100 (S)

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 100. (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. Prerequisites: PSYCH 100, or BIOL 203 and 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 100, 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 100. 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 100. Corequisite: PSYCH 336L, or permission of instructor. (S)

336L Learning Lab 1 1(0-2)

Corequisite: PSYCH 336 (S)

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 100. (F)

337L Memory and Cognition Lab 1(0-2)

Corequisite: PSYCH 337. (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 100. (F,S,SS)

352 Social Psychology 3(3-0)

General and applied psychological principles of the individual's interaction with a group. Prerequisite: PSYCH 100, or permission of instructor. (F,S,SS)

353 Theory and Research in Development 3(3-0)

Emphasis on theoretical foundations of developmental psychology. Research strategies used in conducting developmental research. Prerequisite: PSYCH 151 or PSYCH 251 and 252. (S)

362 Introduction to Psychopathology 3(3-0)

Etiology, diagnosis and therapy of maladaptive or abnormal behaviors and mental functioning. Prerequisite: PSYCH 100. (F,S)

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. Prerequisites: PSYCH 100 and 201. (F)

401 History and Systems of Psychology 3(3-0)

The historical development of modern psychology from its roots in classical philosophy and the social, cultural, and political context within which psychological theory emerged. Prerequisites: PSYCH 100 and senior standing or permission of instructor. (F,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. Prerequisites: PSYCH 201 and 201L. (*)

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. Prerequisites: PSYCH 100 and 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. Prerequisites: PSYCH 100 and 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. Prerequisites: PSYCH 100 and upper division standing. (S)

466 Psychology of Biofeedback 3(3-0)

Psychophysiological aspects in biofeedback. Theoretical and applied instrumentation and clinical use. Project and field work required. Prerequisites: PSYCH 100 and upper division standing. (F)

471 Clinical Psychology 3(3-0)

Survey of clinical psychology as a profession. Training requirements, opportunities, future directions, current research and ethical problems. Prerequisites: PSYCH 100, 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. Prerequisites: PSYCH 464 and 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. Prerequisites: PSYCH 100 and 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 100, 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 and counseling techniques recommended. Prerequisites: PSYCH 100, 362, junior or senior standing, mental health emphasis area and prior written permission of instructor of record. (F,S,SS)

495 Independent Study (1-3 VAR)

Prerequisites: PSYCH 100, psychology major and 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. Maximum of 12 credits allowed toward graduation. Prerequisites: PSYCH 100 and 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. (*)

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. (*)

526 Organizational Development 3(3-0)

Designed to provide the graduate student with experience and skills necessary to improve programs and organization. (*)

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. (*)

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. (*)

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. (*)

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. (*)

538 Elementary Counseling 3(3-0)

Designed to provide methods and techniques for elementary school counselors. (*)

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. (*)

598 Internship 3(0-3)

Designed to provide the student with actual field work experience in counseling and guidance. (*)

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, language development, emergent literacy, 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 and writing including research findings and classroom application of the reading and writing process. Prerequisite: RDG 301 or 425. (S)

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 various content areas such as mathematics, science, literature, social sciences, and industrial education. (F,S)

431 Developing Creative Centers 1(1-0)

Involves planning, developing and implementing the use of learning centers in the classroom. 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). (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 detecting and remediating 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. (SS)

542 Reading Across Cultures 2(2-0)
Techniques of adapting reading instruction for the linguistically and culturally different child. Prerequisite: graduate standing. (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. Applied 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 Recreation Program Planning 3(3-0)
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 3(3-0)
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. (S)

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)

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)

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 and clinical recreation services for the mentally retarded, law offenders, psychologically impaired, sensory impaired, physically disabled, disadvantaged or aging. Prerequisite: permission of instructor. (F)

481 Outdoor Recreation 3(3-0)
Examination of the outdoor recreation experience, the organization of resource-based recreation management and key outdoor recreation policy issues. Prerequisite: permission of instructor. (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. Prerequisite: permission of instructor. (F)

491 Special Topics (1-5 VAR)
(*)

493 Seminar 2(2-0)
Advanced in-depth examinations of contemporary issues in leisure/recreation. Includes student-led discussions, in-depth term projects and comprehensive examinations. Interview and resumé preparation are emphasized. Prerequisite: REC 340. (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. (F)

102 Introduction to Russian II 3(3-0)
Students are placed by the department. Practice in oral, aural, reading and writing experiences. (F,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 ca-

reer 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. (S)

208 Afro-American Heritage 3(3-0)
Analysis of black cultural experiences from African origins and civilization to the present. (F)

209 Blacks in America Today 2(2-0)
Analysis of blacks in today's milieu including problem areas and contemporary issues. (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. (*)

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. (*)

493 Seminar 2(2-0)
Various problems within the realm of social science utilizing an integrated approach. For majors in broad area social science disciplines. (*)

GRADUATE 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. (*)

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. (*)

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. (*)

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. Prerequisites: SOC 101, PSYCH 100 and an approved human biology course. (F)

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. (*)

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. Prerequisites: SW 100 and 201. (*)

290 Special Projects (1-5 VAR)

Prerequisite: permission of instructor. (*)

320 Human Diversity in Practice 3(3-0)

Examines the history and culture, obstacles and resources of ethnic and minority groups in the United States. Identifies skills required for "ethnic competence" in practice. Prerequisites: SW 100, 201 and 202. (*)

322 Social Work Intervention I 3(3-0)

Elements of generalist social work practice with a focus on individuals. Assessment, intervention, evaluation, skill development and practice are emphasized. Prerequisites: SW 100, 201 and 202. (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. Prerequisites: program permission, SW 322, 323 and 324. (*)

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. (*)

461 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. Prerequisite: permission of instructor. 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. Prerequisite: permission of instructor. Corequisite: SW 482. (S)

490 Special Projects (1-5 VAR)

Prerequisites: social work major, prior written permission of instructor of record. (*)

491 Special Topics (1-3 VAR)

(*)

495 Independent Study (1-3 VAR)

Prerequisite: permission of instructor. (*)

GRADUATE COURSES

500 Workshop (1-6 VAR) **

Topics identified by subtitles taught. (*)

501 Principles and Philosophy of Social Work 3(3-0) **

Knowledge, values, history, and philosophy of social work. Prerequisite: 18 credits of socio/behavioral sciences. (*)

510 Social Work Generalist Practice 3(3-0) **

Primary concepts, strategies and skills underlying generalist social work practice. Corequisite: SW 520. (*)

520 Social Welfare Policy Analysis 3(3-0) **

Historical concept, analysis, and impact of social welfare policy. Prerequisite: 18 credits of socio/behavioral sciences. (*)

586 Practicum (3-6 VAR) **

Supervised field experience in social work. Corequisite: SW 510. (*)

591 Special Topics (1-3 VAR) **

Topics identified by subtitles taught. (*)

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 by Colorado State University.) Corequisite: concurrent registration in SW 520. (*)

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 by Colorado State University.) Prerequisite: SW 600. (*)

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 by Colorado State University.) Prerequisite: SW 510. (*)

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 by Colorado State University.) Prerequisites: SW 510 and 610. (*)

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 by Colorado State University.) Prerequisite: SW 520. (*)

** These are Colorado State University courses offered at the University of Southern Colorado toward a master's degree in social work.

SOCIOLOGY (SOC)

UNDERGRADUATE COURSES

100 Contemporary Social Issues 3(3-0)

The examination of contemporary social issues and problems. (*)

101 Human Social Behavior 3(3-0)

The scientific study of patterns and processes of human social relations. (F,S)

105 Understanding Human Diversity 3(3-0)

Americans live in a complex and diverse society. This course examines the nature, impact and strategies for dealing with diversity in personal and social contexts. (*)

152 Marriage and Family 3(3-0)

Historical, cross-cultural and intra-cultural comparisons of family formation, interaction and dissolution. (*)

156 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. (*)

203 The Criminal Justice System 3(3-0)
Organizational features of police, courts, and corrections as subsystems of the American criminal justice system. (*)

204 Community Corrections 3(3-0)
Examination of correctional alternatives to incarceration. (*)

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. (*)

210 (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. (*)

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)

306 Crime and Women 3(3-0)
Exploration of social, cultural and political variables that create both women victims and women criminals. (*)

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. (*)

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. (*)

353 Penology 3(3-0)
Prisons in historical perspective, treatment models as they affect the incarcerated individual. Prerequisites: SOC 101 and 203. (*)

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. (*)

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. (*)

401 (ANTHR 401) Health, Culture and Society 3(3-0)
Analysis of how social, cultural, and psychological factors influence health and health care. (*)

402 (ANTHR 402) Aging, Culture and Society 3(3-0)
Cultural, sociological and psychological dimensions of aging. (*)

403 Human Sexuality and Social Behavior 3(3-0)
Sexuality and sexual conduct from a sociological and developmental perspective. (*)

404 Poverty 3(3-0)

Poverty in the United States, its measurement and extent, perpetuating conditions, lifestyle and anti-poverty programs. (*)

405 Sociology of Law 3(3-0)

Laws in Western society and criminological theory are examined. (*)

406 Sociology of Small Groups 3(3-0)

Microsociological analysis of group structure, interaction and dynamics in institutional settings in modern society. (*)

407 Family Violence 3(3-0)

The extent, seriousness, and impact of the major forms of domestic violence. (*)

408 Science, Technology, and the Future 3(3-0)

Social and structural implications of science and technology as they affect society. (*)

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 304 (*)

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 their customers. Prerequisite: SOC 304. (*)

420 Criminological Theory 3(3-0)

Examination of major theories of crime and their policy implications; focus on sociohistorical factors in theory development. Prerequisites: SOC 304 and 310. (*)

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. (*)

491 Special Topics (1-3 VAR)

Topic identified by subtitles taught. Students may enroll as often as new topics are introduced. (*)

492 (ANTHR 492) Research 3(3-0)

Qualitative and quantitative methods and designs in sociological research. (*)

493 Seminar (2-4 VAR)

(*)

494 Field Experience (3-12 VAR)

Practical on-the-job experience in an agency setting. Prerequisite: senior standing or permission of instructor. (S)

495 Independent Study (1-10 VAR)

Prerequisites: previous work in sociology and permission of instructor. (*)

SPANISH (SPN)

UNDERGRADUATE COURSES

101 Beginning Spoken Spanish I 5(5-0)

Oral proficiency development, also some reading and writing; introduction to Hispanic culture. (F,S)

102 Beginning Spoken Spanish II 5(5-0)

Students are placed by the department. Practice in oral, aural, reading and writing experiences. 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 permission 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. 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. 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. 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. No prerequisite when class is conducted in English. (*)

451 Studies in Spanish Linguistics I 2(2-0)
Analysis of phonology and other language patterns crucial to teaching and learning Spanish as a second or foreign language. Prerequisite: two years college Spanish, or permission of instructor. (F)

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 and specialists. Visits to museums, attendance at movies, theaters and excursions. Prerequisite: two years of college Spanish and permission of instructor. (F,S)

495 Independent Study (1-3 VAR)
Specific themes which address particular problems of literature or culture. May be repeated for credit with approval of major advisor. Prerequisite: two years of college Spanish. (F,S)

SPEECH COMMUNICATION (SPCOM)

UNDERGRADUATE COURSES

103 Speaking and Listening 3(3-0)
Introduces principles of speaking and listening with emphasis on exposition and its application to public speaking. (F,S,SS)

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)

116 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 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. (*)

212 Argumentation 2(2-0)
Argumentation focuses on the methods advocates employ to make rational decisions and to win assent to others' statements. Particular emphasis on the nature and skills of reasoned discourse. (*)

216 Intermediate Sign Language 3(3-0)
Study and application of the American Sign Language, including conversational skills, gestures and deaf cultures. Prerequisite: SPCOM 116, or permission of instructor (S)

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. (*)

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. (*)

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. (*)

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. (*)

250 Introduction to Communication Disorders 2(2-0)
Survey course about major communicating disorders. Emphasis on classification and descriptions. Covers certification requirements, licensure and professional opportunities. (S)

260 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)

261 Voice and Diction 3(3-0)
Voice improvement course for teachers, actors, broadcasters, professional speakers. Emphasis on breath support, phonation, resonance, articulation and pronunciation. Individual attention stressed. (F)

291 Special Topics (1-3 VAR)
(*)

295 Independent Study (1-3 VAR)
Prerequisite: permission of instructor. (*)

304 (ENG 304) Language Awareness 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. (*)

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) Dissection 1(0-2)
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 structures 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)

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. (*)

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****101 Summer Theatre Practicum (1-9 VAR)**

A workshop in producing plays in the summer stock situation. Four, five, or six productions are presented during the eight-week summer theatre term. Prerequisite: permission of theatre director. (SS)

111 Theatre Appreciation 3(3-0)

A course emphasizing the understanding of theatre art from the audience's point of view. (*)

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. (*)

135 Beginning Acting 3(3-0)

An introduction to the principles of acting for stage and screen. (*)

168 Company Class (1-3 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. (*)

216 History of Theatre 3(3-0)

An overview of the major historical eras, plays, playwrights and other contributing artists in Western Theatre. (*)

236 Acting Problems 3(3-0)

Exploration of a major concern for the actor such as characterization, dialects, acting styles, film and TV acting. May be repeated for credit. Prerequisite: TH 135 or equivalent. (*)

291 Special Topics (1-3 VAR)

(*)

301 Summer Theatre Practicum (1-9 VAR)

A workshop in theatre production. Four to six plays are presented during an eight-week summer stock season. Prerequisite: permission of theatre director. (SS)

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. (*)

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. (*)

368 Company Class (1-3 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. Prerequisite: junior or senior standing. (*)

378 Creative Dramatics 1(1-0)

Classroom techniques in dramatics for the teacher. (F,SS)

491 Special Topics (1-3 VAR)

(*)

GRADUATE COURSES**570 Creative Dramatics 1(1-0)**

Graduate-level creative dramatics for the classroom teacher. Prerequisite: graduate standing. (*)

591 Special Topics (1-3 VAR)

(*)

APPENDIX I

**PRIOR TO FALL 1992
GENERAL EDUCATION REQUIREMENT COURSES**

Students who entered the university prior to fall semester, 1992, may satisfy general education requirements from the following list of courses. Courses that appear in bold type are no longer offered.

**Group I
(Humanities)**

Subgroup

A	ART	100, 101, 102, 103, 105
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, 223, 231, 232, 240, 254, 260
D	MACOM	101, 102 , 215
E	MUSIC	101, 118, 119, 120, 126
F	PHIL	100 , 101, 102, 103, 108, 109, 110, 120, 121 , 122 , 123 , 200, 204, 205, 220
G	SPCOM	100 , 211, 212, 221, 231, 241, 242
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	100, 101 , 101L, 105, 110, 130, 151, 211, 212, 220, 221, 231
B	ANTHR	100, 103, 105, 106, 107, 108, 251, 252
	MACOM	280
	NSG	117
	SOC	100, 101, 102 , 105, 152, 153 , 201, 202 , 203
	SOCSC	151, 208, 209, 231
C	GEOG	104, 113, 201, 210
	HIST	101, 102, 103, 185 , 201, 202, 211
	POLSC	100, 101, 102, 104 , 105, 150, 185 , 200, 201, 202, 260
	SW	100, 105, 201
D	ACCTG	210
	BUSAD	100
	ECON	101, 102, 201, 202
E	CS	101, 136, 201 , 202 , 230
F	IS	102, 105, 202, 205

**Group III
(Natural Science)**

Subgroup

A	ANTHR	104
	BIOL	100, 100L, 101, 112, 121, 121L, 132, 141, 162, 191, 191L, 201, 201L, 202, 202L, 221, 221L, 223, 223L, 224, 224L, 262, 262L
	PSYCH	120, 122, 222
B	CHEM	101, 101L, 111, 111L, 121, 121L, 122, 122L
C	CST	101, 102
	MET	111
D	EN	103
	GEOG	102, 103, 281
	GEO	101, 101L, 123, 123L
E	MATH	121, 122, 124, 126, 131, 132, 156, 207, 221, 231, 232, 245
F	PHYS	100, 110, 130, 131, 132, 133, 134, 135, 140, 140L, 201, 201L, 202, 202L, 221, 221L, 222, 222L
G	IS	103, 106, 203, 206

**BEGINNING FALL 1992
GENERAL EDUCATION REQUIREMENT COURSES
KNOWLEDGE COMPONENT**

The general education requirement for graduation includes a total of 42 semester hours in three categories.

A: AESTHETIC AND ETHICAL VALUES**K 1 VISUAL AND PERFORMING ARTS**

ART	100	Visual Dynamics
MUS	118	Music Appreciation
TH	111	Theatre Appreciation

K 2 LITERATURE

ENG	130	Introduction to Literature
ENG	223	Modern World Literature
PHIL	102	Philosophical Literature

B: UNDERSTANDING PEOPLE**K 3 INTERNATIONAL AND MULTICULTURAL EXPERIENCES**

ANTHR	100	Cultural Anthropology
ENG	240	Survey of Ethnic Literature
FRN	102	Beginning Spoken French II
GER	102	Beginning Spoken German II
ITL	102	Beginning Spoken Italian II
PHIL	120	Non-Western World Religions
POLSC	105	Understanding Human Diversity
POLSC	200	Understanding Human Conflict
PSYCH	105	Understanding Human Diversity
RUS	102	Beginning Spoken Russian II
SOC	105	Understanding Human Diversity
SPN	102	Beginning Spoken Spanish II
SW	105	Understanding Human Diversity

K 4 HISTORICAL CONSCIOUSNESS

ART	105	History Through Art
HIST	101	World Civilization to 1100
HIST	102	World Civilization from 1100 to 1800
HIST	103	World Civilization since 1800

K5 HEALTH CONSCIOUSNESS AND/OR AWARENESS OF HUMAN DEVELOPMENT, EXPERIENCE AND BEHAVIOR

BIOL	162	Personal Health
MACOM	101	Media and Society
PSYCH	100	General Psychology
PSYCH	151	Human Development
SOC	101	Human Social Behavior

C: ECONOMIC, POLITICAL AND SOCIAL SYSTEMS**K 6 ECONOMIC, POLITICAL AND SOCIAL SYSTEMS**

ECON	102	Economics and Society
GEOG	104	Urban Geography
POLSC	101	American National Politics
POLSC	260	Power: Political and Economic Systems
SOC	100	Contemporary Social Issues

D: SCIENCE AND TECHNOLOGY**K 7 LIFE SCIENCE**

BIOL	100	Principles of Biology
BIOL	100L	Principles of Biology Lab
BIOL	121	Environmental Conservation
BIOL	121L	Environmental Conservation Lab
PSYCH	222	Understanding Animal Behavior

K 8 PHYSICAL SCIENCE

CHEM	101	Chemistry and Society
CHEM	101L	Chemistry and Society Lab
GEOG	101	Earth Science
PHYS	110	Astronomy
PHYS	140	Conceptual Physics
PHYS	140L	Conceptual Physics Lab

UPPER-DIVISION COMPONENT

GEN ED	301	Ways of Knowing
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GENERAL EDUCATION CROSS-REFERENCE TABLE

Identification of "new" General Education Knowledge Component Courses (Gen. Ed. II) that may be used to satisfy "old" General Education Group I (Humanities), II (Social Sciences) and III (Natural Science) requirements.

DEPT	CRS#	TITLE	"NEW"	"OLD"
ART	100	Visual Dynamics	K ¹	I,A(H)
MUS	118	Music Appreciation	K ¹	I,E(H)
TH	111	Theatre Appreciation	K ¹	I,H(H)
ENG	130	Introduction to Literature	K ²	I,C(H)
ENG	223	Modern World Literature	K ²	I,C(H)
PHIL	102	Philosophical Literature	K ²	I,F(H)
ANTHR	100	Cultural Anthropology	K ³	II,B(SS)
ENG	240	Survey of Ethnic Literature	K ³	I,C(H)
FRN	102	Beginning Spoken French II	K ³	I,C(H)
GER	102	Beginning Spoken German II	K ³	I,B(H)
ITL	102	Beginning Spoken Italian II	K ³	I,B(H)
PHIL	120	Non-Western World Religions	K ³	I,F(H)
POLSC	105	Understanding Human Diversity	K ³	II,C(SS)
POLSC	200	Understanding Human Conflict	K ³	II,C(SS)
PSYCH	105	Understanding Human Diversity	K ³	II,C(SS)
RUS	102	Beginning Spoken Russian II	K ³	I,C(H)
SOC	105	Understanding Human Diversity	K ³	II,C(SS)
SPN	102	Beginning Spoken Spanish II	K ³	I,B(H)
SW	105	Understanding Human Diversity	K ³	II,C(SS)
ART	105	History through Art	K ⁴	I,A(H)
HIST	101	World Civilization to 1100	K ⁴	II,C(SS)
HIST	102	World Civilization from 1100 to 1800	K ⁴	II,C(SS)
HIST	103	World Civilization from 1800	K ⁴	II,C(SS)
BIOL	162	Personal Health	K ⁵	III,A(NS)
MACOM	101	Media and Society	K ⁵	I,D(H)
PSYCH	100	General Psychology	K ⁵	II,A(SS)
PSYCH	151	Human Development	K ⁵	II,A(SS)
SOC	101	Human Social Behavior	K ⁵	II,B(SS)
ECON	102	Economics and Society	K ⁶	II,D(SS)
GEOG	104	Urban Geography	K ⁶	II,C(SS)
POLSC	101	American National Politics	K ⁶	II,C(SS)
POLSC	260	Power: Political and Economic Systems	K ⁶	II,C(SS)
SOC	100	Contemporary Social Issues	K ⁶	II,B(SS)
BIOL	100	Principles of Biology	K ⁷	III,A(NS)
BIOL	100L	Principles of Biology Lab	K ⁷	III,A(NS)
BIOL	121	Environmental Conservation	K ⁷	III,A(NS)
BIOL	121L	Environmental Conservation Lab	K ⁷	III,A(NS)
PSYCH	222	Understanding Animal Behavior	K ⁷	III,A(NS)
CHEM	101	Chemistry and Society	K ⁸	III,B(NS)
CHEM	101L	Chemistry and Society Lab	K ⁸	III,B(NS)
GEOG	101	Earth Science	K ⁸	III,D(NS)
PHYS	110	Astronomy	K ⁸	III,F(NS)
PHYS	140	Contemporary Physics	K ⁸	III,F(NS)
PHYS	140L	Contemporary Physics Lab	K ⁸	III,F(NS)

APPENDIX II

GENERAL EDUCATION EXEMPTIONS

COLLEGE OF APPLIED SCIENCE AND ENGINEERING TECHNOLOGY

DEPARTMENT	EXEMPTION AREA			CREDIT HOURS
	COMPONENT	DOMAIN	SUB-DOMAIN	
CET MAJOR	SKILLS (I)	COMPUTER USAGE (C) SCIENCE & TECHNOLOGY (D)		2
	KNOWLEDGE (II)		K ⁶ PHYSICAL SCIENCE	4
EET MAJOR	SKILLS (I)	COMPUTER USAGE (C) SCIENCE & TECHNOLOGY (D)		2
	KNOWLEDGE (II)		K ⁶ PHYSICAL SCIENCE	4
MET MAJOR	SKILLS (I)	COMPUTER USAGE (C) SCIENCE & TECHNOLOGY (D)		2
	KNOWLEDGE (II)		K ⁶ PHYSICAL SCIENCE	4
INDUSTRIAL ENGINEERING MAJOR	KNOWLEDGE (II)	SCIENCE & TECHNOLOGY (D)	K ⁶ PHYSICAL SCIENCE	4
			K ⁷ LIFE SCIENCE	3
IST-TEACHING OPTION	KNOWLEDGE (II)	SCIENCE & TECHNOLOGY (D)	K ⁶ PHYSICAL SCIENCE	4
INDUSTRIAL TECH APSM MAJOR	KNOWLEDGE (II)	SCIENCE & TECHNOLOGY (D)	K ⁶ PHYSICAL SCIENCE	4
			K ⁷ LIFE SCIENCE, IF A COURSE IN LIFE SCIENCE IS TAKEN	3
INDUSTRIAL TECH FACILITIES MAJOR	KNOWLEDGE (II)	SCIENCE & TECHNOLOGY (D)	K ⁶ PHYSICAL SCIENCE	4

COLLEGE OF HUMANITIES AND SOCIAL SCIENCES

DEPARTMENT	EXEMPTION AREA			CREDIT HOURS
	COMPONENT	DOMAIN	SUB-DOMAIN	
ENGLISH MAJOR	KNOWLEDGE (II)	AESTHETIC & ETHICAL VALUES (A)	K ⁷ LITERATURE	3
FOREIGN LANGUAGE MAJOR	KNOWLEDGE (II)	UNDERSTANDING PEOPLE (B)	K ³ INTERNATIONAL & MULTICULTURAL EXPERIENCES	3

COLLEGE OF SCIENCE AND MATHEMATICS

DEPARTMENT	EXEMPTION AREA			CREDIT HOURS
	COMPONENT	DOMAIN	SUB-DOMAIN	
BIOLOGY MAJOR	KNOWLEDGE (II)	SCIENCE & TECHNOLOGY (D)	K ⁷ LIFE SCIENCE K ⁶ PHYSICAL SCIENCE	7
BIOLOGY MINOR	KNOWLEDGE (II)	SCIENCE & TECHNOLOGY (D)	K ⁷ LIFE SCIENCE	4
CHEMISTRY MAJOR	SKILLS (I)	COMPUTER USAGE (C) SCIENCE & TECHNOLOGY (D)	(NOT WORD PROCESSING)	1
	KNOWLEDGE (II)		K ⁶ PHYSICAL SCIENCE	4
CHEMISTRY MINOR	KNOWLEDGE (II)	SCIENCE & TECHNOLOGY (D)	K ⁶ PHYSICAL SCIENCE	4
GEOLOGY MINOR	KNOWLEDGE (II)	SCIENCE & TECHNOLOGY (D)	K ⁶ PHYSICAL SCIENCE	4
MATHEMATICS MAJOR	SKILLS (I)	COMPUTER USAGE (C) SCIENCE & TECHNOLOGY (D)	(NOT WORD PROCESSING)	1
	KNOWLEDGE (II)		K ⁷ LIFE SCIENCE OR K ⁶ PHYSICAL SCIENCE	4
NURSING MAJOR	KNOWLEDGE (II)	SCIENCE & TECHNOLOGY (D)	K ⁷ LIFE SCIENCE K ⁶ PHYSICAL SCIENCE	7
ALL PHYSICS & PHYSICAL SCIENCE MAJORS EXCEPT TEACHING OPTION	SKILLS (I)	COMPUTER USAGE (C) SCIENCE & TECHNOLOGY (D)	(NOT WORD PROCESSING)	1
	KNOWLEDGE (II)		K ⁶ PHYSICAL SCIENCE	4
PHYSICS MAJOR BIOPHYSICS OPTION	KNOWLEDGE (II)	SCIENCE & TECHNOLOGY (D)	K ⁷ LIFE SCIENCE	3
PHYSICS, PHYSICAL SCIENCE MAJORS	SKILLS (I)	COMPUTER USAGE (C) SCIENCE & TECHNOLOGY (D)	(NOT WORD PROCESSING)	1
	KNOWLEDGE (II)		K ⁶ PHYSICAL SCIENCE	4

SCHOOL OF BUSINESS

DEPARTMENT	EXEMPTION AREA			CREDIT HOURS
	COMPONENT	DOMAIN	SUB-DOMAIN	
ALL MAJORS	KNOWLEDGE (II)	ECONOMIC, POLITICAL & SOCIAL SYSTEMS (C)	K ⁶	3

UNIVERSITY PERSONNEL 1993-94

STATE BOARD OF AGRICULTURE

A. Gary Ames	Denver
Jeff Ball (1)	Durango
Duane C. Boes (2)	Ft. Collins
Owen "Brad" Butler	Denver
Wiley Y. Daniel	Denver
James R. Isgar	Hesperus
Patricia D. Kelly	Pueblo
Chuck Mabry	Ft. Collins
Romaine Pacheco	Denver
Roger Peters (1)	Durango
Walter L. Price	Boulder
John R. Stulp, Jr.	Lamar
Ron Vigil (3)	Pueblo
Craig Welling (2)	Ft. Collins
Will Wright (3)	Pueblo

(1) Representatives from Fort Lewis College

(2) Representatives from Colorado State University

(3) Representatives from the University of Southern Colorado

COLORADO STATE UNIVERSITY SYSTEM

Albert C. Yates, chancellor and president, Colorado State University
 Frank Armijo, vice chancellor for academic affairs, CSUS
 John Bliss, vice chancellor for administrative affairs, CSUS

ADMINISTRATIVE OFFICES**OFFICE OF THE PRESIDENT**

Robert C. Shirley, president
Stephen D. Bronn, executive director of Planning and Budgets
Andrew Cornelius, director of Affirmative Action
Robert Mason, director of University Computing
William T. Ward, director of Development and Alumni Relations
David F. Trujillo, director of Community and Special Projects

OFFICE OF THE PROVOST

Bruce F. Grube, provost
J. Michael Ortiz, associate provost
William J. Askwig, dean, School of Business
Lawrence W. Byrnes, director, Center for Teaching and Learning
Dan DeRose, director, Athletics
Richard Hill, dean, Student Life and Development
Beverly Moore, director, University Library
Gary Means, interim dean, Continuing Education
Greg Sinn, general manager, KTSC-TV
Jack A. Seilheimer, dean, College of Science and Mathematics
Ray Sisson, dean, College of Applied Science and Engineering Technology
Frederick L. Kidd, dean, Admissions and Enrollment Management
Friederike Wiedemann, dean, College of Humanities and Social Sciences

OFFICE OF THE VICE PRESIDENT FOR BUSINESS SERVICES

Billie J. Brandon, vice president for Business Services
Richard A. Cumbee, associate vice president for Business Services
Anita Kendall, director, Personnel
Ted Leyba, sergeant, Campus Police
Sally McGill-Eagan, director, Communication Services
Ed Smith, executive director, Facilities Management
Everett E. Stastny, director, Purchasing
Bruce Zimmerman, director, Auxiliary Services

ADMINISTRATIVE FACULTY

William J. Askwig (1962) professor of economics, and dean, School of Business; BSBA, MBA, University of Denver; Ph.D., Texas Tech University
Stephen D. Bronn (1971) professor of mathematics, and executive director of Planning and Budgets; BS, University of Nebraska; MSIA, Purdue University; MS, Ph.D., Northwestern University
Lawrence W. Byrnes (1991) professor of education, and director of the Center for Teaching and Learning; BA, MA, and Ph.D., Michigan State University
Dan DeRose (1991) instructor of economics, and director of Athletics; BSBA, MBA, University of Southern Colorado
Bruce F. Grube (1992) professor of political science, and provost; AB, University of California-Berkeley; MA, California State University; Ph.D., University of Texas-Austin
Frederick L. Kidd (1993) dean, Admissions and Enrollment Management; BS, University of Southern Colorado; MA, New Mexico Highlands University
Beverly A. Moore (1970) professor of library services, and director, the University Library; AA, Hutchinson Junior College; BA, University of Northern Colorado; MA, University of Denver
J. Michael Ortiz (1990) professor of education, and associate provost; BUS, MA, University of New Mexico; Ph.D., University of North Carolina
Jack A. Seilheimer (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 L. 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
Friederike Wiedemann (1989) professor of foreign language, and dean, College of Humanities and Social Sciences; BA, Johann Wolfgang Goethe-Universitat, Frankfurt, Germany; MA, Faculte des Lettres, Lyon, France; Ph.D., Northwestern University

PROFESSIONAL STAFF

Alley, Lorna (1976) assistant budget director; BSBA, University of Southern Colorado

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

Bicknell, Leslie (1992) director, Residential Life; BA, MA, Colorado State University

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

Clay, Samuel O., Jr. (1971) assistant director, Counseling and Career Services, and director, Academic Advising and Coordinator of Internships; BA, University of Southern Colorado; MA, University of Denver

Cornelius, Andrew (1987) director, Affirmative Action; BS, Metropolitan State College

Cumbee, Richard (1990) associate vice president, Business Services; BA, The College of William and Mary

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

Duran, Rose (1992) learning assistance specialist, Counseling and Career Services; BA, Catholic University of America; MA, George Washington University

Elsom, Donna (1990) safety and environmental health officer, Business Services; BS, University of Southern Colorado

Folda, Joseph (1987) head coach, men's basketball; BS, University of Northern Colorado; M.Ed., Eastern Washington University

Gallegos, Victoria (1991) loan coordinator/counselor, Financial Aid; BA, Adams State College

Gregorich, Louis (1992) instructor of Human Performance and Leisure Studies and head coach, women's volleyball; BS, MS, University of Illinois at Chicago

Halvorson, James (1989) coordinator, Trio Programs; BA, University of the Americas, Mexico, DF, BFT, American Institute Foreign Trade, Phoenix, Arizona; MA, University of New Mexico

Herrera, Veronica (1989) financial aid, veterans and job locator 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

Hilvitz, Joni (1990) development specialist, KTSC-TV

Jensen, Jennifer (1992) counselor, Admissions; BS, University of Southern Colorado

Jones, Scott A. (1984) master control operator supervisor, KTSC-TV; BS, University of Southern Colorado

Kelly, Todd (1991) sports information director, Athletics; BS, University of Southern Colorado

Kendall, Anita L. "Skip" (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) sergeant, University Police

Lundahl, Sandra L. (1985) financial director and education TV coordinator, KTSC-TV; AAS, University of Southern Colorado

Maldonado, Carlos (1990) counselor, Student Support Services Program; BS, University of New Mexico

Martinez, Deborah A. (1985) assistant director, Admissions, and coordinator, Recruitment of Minorities and Women; BA, University of Southern Colorado; MA, University of Northern Colorado

Mason, Robert (1981) director, University Computing; BS, MS, Ph.D., Southern Illinois University

May, Christy (1992) production assistant, KTSC-TV; BA, New Mexico State 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

Melin, Carl (1985) assistant director, Admissions, and coordinator, Transfer and International Student Recruitment; BA, Adams State College; MS, University of Southern California

Mestas, Richard (1991) counselor, Admissions, BA, University of Southern Colorado

Moses, Douglas J. (1985) head coach, wrestling; BA, Adams State College; MA, Colorado State University

Ortega, M. Donald (1991) sponsored programs manager, Office of Accounting; BA, College of Santa Fe

Perez, Cynthia M. (1977) assistant director, Student Support Services; BA, University of Southern Colorado

Quesada, Ed (1992) Coordinator, SCEOC Satellite Center at Colorado Springs; MA, University of Colorado

Sinn, Gregory B. (1985) general manager, KTSC-TV; BA, University of Arizona

Schuetzle, Ralph (1989) assistant coach, men's basketball; BA, Augustana College; MS, Eastern Washington University

Skehan, Patricia (1986) assistant director, Admissions, and coordinator, on campus programs; BA, University of Colorado

Smith, Ed (1992) executive director, Facilities Management; BS, University of Rhode Island; MA, Central Michigan University

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

Trujillo, David F. (1990) director of Community and Special Projects; MA, San Jose State University

Trujillo, Edward (1992) controller; BA, Western New Mexico University; MBA, University of Southern Colorado

Vunovich, Lesa Kidd, (1991) membership manager, KTSC-TV; BS, University of Southern Colorado

Ward, Mary Jane (1991) program director, Continuing Education; BA, MA, Marshall University; Ph.D., Catholic University of America

Ward, William T. (1993) director, Development and Alumni Relations; BS, Colorado State University

Weekes, Ronald C. (1984) production manager, KTSC-TV; BA, Brigham Young University

Wells, Elmer E. (1974) associate dean, Student Life and Multicultural Development; BA, Iowa Wesleyan College; M.Ed., University of Alaska; Ph.D., University of New Mexico

Whitley, Nancy (1988) program assistant, Educational Opportunity Center

Whitley, Belinda (1988) coordinator, Academic Computing; BS, MS, Arkansas State University

Wrage, Jeffery (1991) head coach, men and women's tennis and director of intramurals; BS, Kearney State College; MBA, University of Colorado at Denver

Zimmer, Cathy A. (1988) promotions coordinator, KTSC-TV; BA, University of Southern Colorado

Zimmerman, Bruce (1986) director, Auxiliary Services; BS, Rhode Island College; MS, Indiana University

Ziolkowski, Jeff (1991) production specialist, KTSC-TV; BS, University of Southern Colorado

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

Bassein, Beth Ann (1966-1991) BA, MA, Ph.D., professor emeritus of English

Blake, Marvin (1949-1978) BE, professor emeritus of manufacturing engineering technology

Blandford, Robert D. (1965-1989) BS, MA, DA, professor emeritus of mathematics

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

Buckles, William (1965-1993) BA, MA, Ph.D., professor emeritus of anthropology

Caduff, Gerald F. (1947-1978) BSEE, ME, Ph.D., professor emeritus of electronics

Cain, Robert L. (1970-1993) BA, MLS, professor emeritus of library services

Connelly, Jerald (1979-1990) BS, Ph.D., professor emeritus of chemistry

Cotner, Jane (1960-1976) AB, BSLS, professor emeritus of library sciences

Davison, Earle (1950-1975) BS, professor emeritus of industrial technology

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

Hammond, William A. (1957-1987) BSBA, MBA, professor emeritus of accounting

Hearn, June L. (1967-1993) BA, MS, professor emeritus of psychology

Hench, Robert (1965-1993) BFA, MA, professor emeritus of art

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

Janes, Donald (1963-1993) BA, MA, Ph.D, professor emeritus of biology

Jurie, Carl A. (1956-1980) BA, MA, professor emeritus of geology

Kellogg, William (1969-1990) BA, MS, MM, professor emeritus of music

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

Li, Hung C. (1969-1990) BA, MS, Ph.D., professor emeritus of mathematics

Lund, Carl (1957-1978) professor emeritus of welding

Martinet, Anthony (1969-1990) BS, M.Ed., professor emeritus of automotive parts and service management

Middleton, Donald S. (1948-1980) BA, M.Ed., professor emeritus of electronics

Miller, Margaret (1976-1990) BA, MS, Ph.D., professor emeritus of teacher education

Miller, Robert E. (1952-1983) BS, MS, professor emeritus of chemistry

Miller, Wilbur C. (1967-1988) BA, MBS, Ph.D., professor emeritus of mathematics

Milne, Donald (1965-1993) BA, MA, Ph.D, professor emeritus of English/Foreign Languages

Olin, Carol M. (1971-1991) BA, MA, professor emeritus of English

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

Reinier, 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

Schaeffer, Frederick (1963-1992) BSGE, AM, Ph.D., professor emeritus of geology

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

Strobel, John (1960-1993) BME, MM, DMA, professor emeritus of music

Taussig, Anna (1960-1977) AB, MA, professor emeritus of foreign language

Tedrow, Charles (1968-1993) AB, MA, professor emeritus of industrial technology

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

Wade, Robert (1970-1990) AA, BS, M.Ed., professor emeritus of automotive parts and service management

Watkins, Sallie A. (1966-1988) BS, MS, Ph.D., professor 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 1992-93 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
- Aguiar, 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
- Audrey, Laura** (1989) assistant professor of art; BA, Colorado State University; MA, California State University, San Diego
- Baca, Judy M.** (1981) associate professor of social work; BS, University of Southern Colorado; MSW, Arizona State University
- Bandy, Thomas J.** (1991) assistant professor of industrial science and technology; BS, Utah State University; MS, Colorado State University
- Banks, Jessie F.** (1966) assistant professor of human performance and leisure studies; BS, Central State University; MA, Adams State College
- Barnett, Janet H.** (1990) assistant professor of mathematics; BS, Colorado State University; MA, Ph.D., University of Colorado-Boulder
- 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
- Billington, Peter J.** (1989) 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
- Bonetti, Sandra J.** (1991) assistant professor of chemistry; BS, Ph.D., Georgia Institute of Technology
- 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
- Brewer, Paul** (1992) instructor of music; BA, MME, Central State University, Oklahoma
- 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, James H.** (1991) associate professor of management; BA, MA, Western Illinois University; Ph.D., University of Illinois
- Burgos, Fernando** (1988) assistant professor of mathematics; BS, Universidad De Yucatan; MS, Instituto Politecnico Nacional De Mexico; Ph.D., Northeastern University
- Burton, Peter** (1988) associate professor of electronics engineering technology; BSEE, University of London; MSEE, Southern Methodist University
- Cameron, James T.** (1970) professor of psychology; BA, The Colorado College; MA, Ph.D., University of Colorado
- Carleo, John A.** (1991) assistant professor of automotive parts and service management; BS, Southern Colorado State College; M.Ed., Colorado State University
- Carrasco, Hector R.** (1993) associate professor of engineering; BSME, MSME, University of Texas at El Paso; Ph.D., Texas A&M University, P.E.
- Chacon, Paul R.** (1990) associate professor emeritus of professor of mathematics; BS, University of British Columbia; Ph.D., University of Washington
- 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
- Cockrell, David** (1989) assistant professor of human performance and leisure studies; BA, MS, University of Pennsylvania; Ph.D., University of Idaho
- 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
- Darby, Ronald L.** (1991) assistant professor of automotive parts and service management; AAS, BS, Southern Colorado State College; MA, University of Southern Colorado
- Dawson, Roseanne** (1984) associate professor of library services; BA, Drake University; MA, University of Iowa; MA, University of Denver
- 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
- Dicinio, Carol L.** (1992) assistant professor of accounting; BSBA, University of Southern Colorado; MS, Colorado 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
- Druelinger, Melvin L.** (1984) 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; BA, University of Denver; MA, Claremont Graduate School
- Ebersole, Samuel** (1990) assistant professor of mass communications, and producer director, KTSC; BA, Southern California College; MA, Regent University
- Eisenbeis, H. Richard** (1988) associate professor of management; BA, Lafayette College; MS, University of Montana; MS, Ph.D., The University of Arizona
- Epstein, Susan** (1991) instructor of speech communication; BA, MA, University of Northern Colorado
- Farley, Mary J.** (1991) professor of nursing; BSN, Metropolitan State College; MSN, University of Colorado Health Sciences Center, Ph.D., University of Denver
- 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) professor of anthropology; BA, University of California; MA, University of Chicago; Ph.D., University of California, San Diego
- Gill, John P., Jr.** (1971) professor of mathematics; BS, University of Georgia; MA, University of Alabama; Ph.D., Colorado State University
- Gonzales, Felix** (1992) assistant professor of social work; BA, University of Southern Colorado; MSW, Arizona 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; BS, Ph.D., University of Utah
- Harrell, Jill** (1990) instructor of library services; BA, Benedictine College; MS, University of Illinois
- Hench, Robert W.** (1965) associate professor of art; BFA, University of Denver; MA, The Colorado College
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**ACADEMIC CALENDARS
1993-94**

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 10-week session. Specific information about Summer College is available in the bulletin published prior to the beginning of the first five-week session from the Records office.

Summer Semester 1993

March 12	Summer 1993 Graduation Planning Sheets Due
April 26-30	Early Registration
June 4	Registration
June 7	First 5- & 10-Week Classes Begin
July 5	Independence Day (Observed)
July 9	First 5-week Classes End
July 12	Second 5-week Classes Begin
August 13	Second 5- & 10-Week Classes End

Fall Semester 1993

April 5-16 Advisement
 April 19-23 Early Registration
 April 23 Graduation Planning Sheets Due
 August 24-25 Orientation (Tu, W)
 August 26 Registration (Th)
 August 30 Classes Begin (M)
 September 6 Labor Day (**)
 September 13 End Drop/Add
 October 8 Spring 1994 Graduation Planning Sheets Due
 November 22-26 Thanksgiving
 December 10 Classes End
 December 13-17 Final Exams
 December 17 Finals End

Spring Semester 1994

November 1-12 Advisement
 November 15-19 Early Registration
 January 19 Orientation (W)
 January 20 Registration (Th)
 January 24 Classes Begin (M)
 February 7 End Drop/Add
 March 11 Summer 1994 Graduation Planning Sheets Due
 March 21-25 Spring Break
 May 6 Classes End
 May 9-13 Final Exams
 May 13 Finals End
 May 14 Commencement

Summer Semester 1994

April 22 Fall 1994 Graduation Planning Sheets Due
 April 25-29 Early Registration
 June 3 Registration
 June 6 First 5- & 10-Week Classes Begin
 July 4 Independence Day (Observed)
 July 8 First 5-week Classes End
 July 11 Second 5-week Classes Begin
 August 12 Second 5- & 10-Week Classes End

**No holiday...classes will be held
 (These calendars are planned in advance and are subject to change.)

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