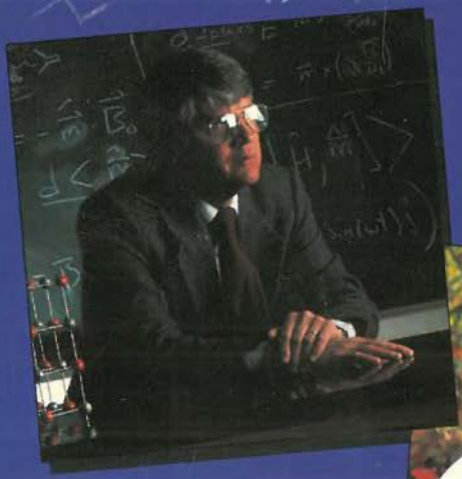
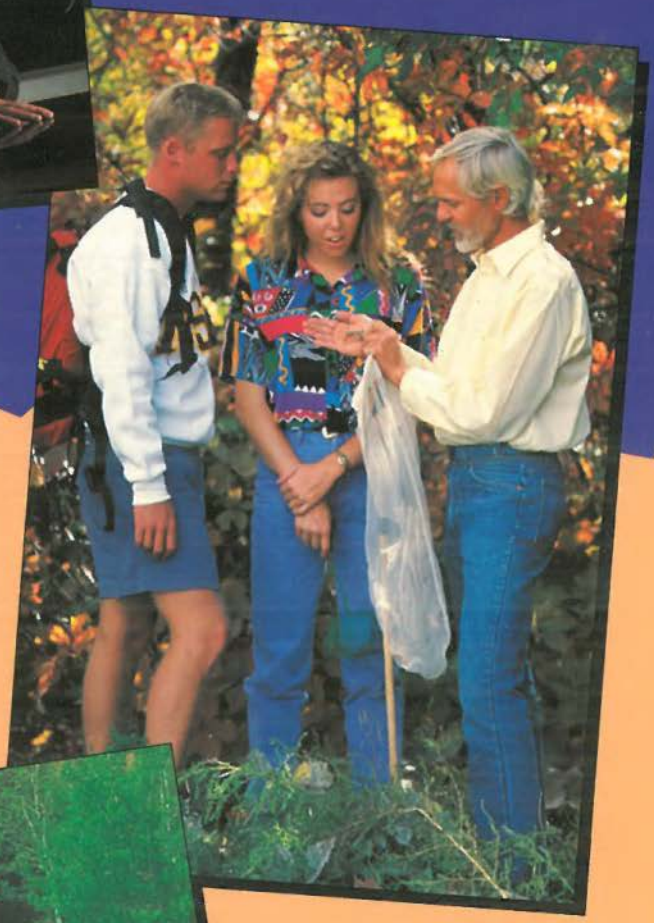
MESA STATE COLLEGE

grand junction, colorado





94-95

CATALOG

1994-95 ACADEMIC CALENDAR

SUMMER SEMESTER 1994

May	13 (Fri.)	Registration for 12-week session and first 6-week session
May	16 (Mon.)	Classes begin
May	30 (Mon.)	Memorial Day holiday
June	23-24 (Thur., Fri.)	Final exams for first 6-week session
June	27 (Mon.)	Registration for second 6-week session Classes begin
July	4 (Mon.)	Independence Day holiday
Aug.	4-5 (Thur.,Fri.)	Final exams for 12-week session and second 6-week session
Aug.	5 (Fri.)	Summer Session ends

FALL SEMESTER 1994

Aug.	15 (Mon.)	New Faculty Workshop
Aug.	19 (Fri.)	Faculty Welcome
Aug.	20 (Sat.)	ACT Testing (Residual) 8:00 am, Houston
Aug.	20 (Sat.)	Residence halls/apartments open
Aug.	20 (Sat.)	Dining hall opens 5:00 p.m.
Aug.	22 (Mon.)	Orientation
Aug.	23 (Tues.)	Registration
Aug.	24 (Wed.)	First day of classes
Sept.	5 (Mon.)	Labor Day—*classes in session*
Sept.	5 (Mon.)	Last day to add classes
Sept.	8 (Thur.)	Last day to drop classes without a "W"*
Oct.	17-18 (Mon.,Tues.)	Fall Break
Oct.	19 (Wed.)	Second module begins
Oct.	21 (Fri.)	Last day to withdraw from classes**
Nov.	23-25 (Wed.- Fri.)	Thanksgiving vacation
Dec.	9 (Fri.)	Last day of classes
Dec.	12,13,14,15 (Mon.-Thur.)	Final examinations
Dec.	15 (Thur.)	Fall Semester ends

SPRING SEMESTER 1995

Jan.	14 (Sat.)	ACT Testing (Residual) 8:00 am, Houston
Jan.	15 (Sun.)	Residence halls/apartments open
Jan.	15 (Sun.)	Dining hall opens 5:00 p.m.
Jan.	16 (Mon.)	Orientation
Jan.	17 (Tues.)	Registration
Jan.	18 (Wed.)	First day of classes
Jan.	30 (Mon.)	Last day to add classes
Feb.	2 (Thurs.)	Last day to drop classes without a "W"*
Mar.	10 (Fri.)	Last day to withdraw from classes**
Mar.	13 (Mon.)	Second module begins
Mar.	20-24	Spring vacation
May	5 (Fri.)	Last day of classes
May	8, 9, 10, 11 (Mon.-Thur.)	Final examinations
May	11 (Thur.)	Spring Semester ends
May	12 (Fri.)	Commencement
May	13 (Sat.)	Commencement

*DROP: The class(es) will not show on a student's transcript or record.

**WITHDRAW or W: The class(es) will show on a student's transcript with a "WP" (withdrew passing) or a "WF" (withdrew failing) for a grade.

MESA STATE COLLEGE

P. O. Box 2647
Grand Junction, Colorado 81502

CATALOG

1994-95

NEED MORE INFORMATION?

Please feel free to contact Mesa State College for any additional information. For assistance in specific areas, write or telephone:

Academic Advising Center
Coordinator . . . . . Larissa Bailey—(303) 248-1177
Student Adviser . . . . . Denise Over—(303) 248-1926
Admission Office . . . . . (303) 248-1376
in Colorado, Toll Free 1-800-982 MESA
Admission/Alumni Office - Denver . . . . . (303) 424-6538
5460 Ward Road, Suite 125, Arvada, Colorado 80002
Billing Information (tuition, fees, etc.) . . . . . Kathy Hurshman—(303) 248-1661
Records Office . . . . . (303) 248-1555
Continuing Education . . . . . (303) 248-1476
Financial Aid Director . . . . . Phil Swille—(303) 248-1396
(scholarships, loans, grants)
Housing Director . . . . . Michael D. Black—(303) 248-1536
Non-Traditional Coordinator . . . . . Gabe DeGabriele—(303) 248-1847
Pre-College Counseling . . . . . Kim Crosby—(303) 248-1875
UTEC, 2508 Blichmann Avenue, Grand Junction, CO 81506. . . . . (303) 248-1999

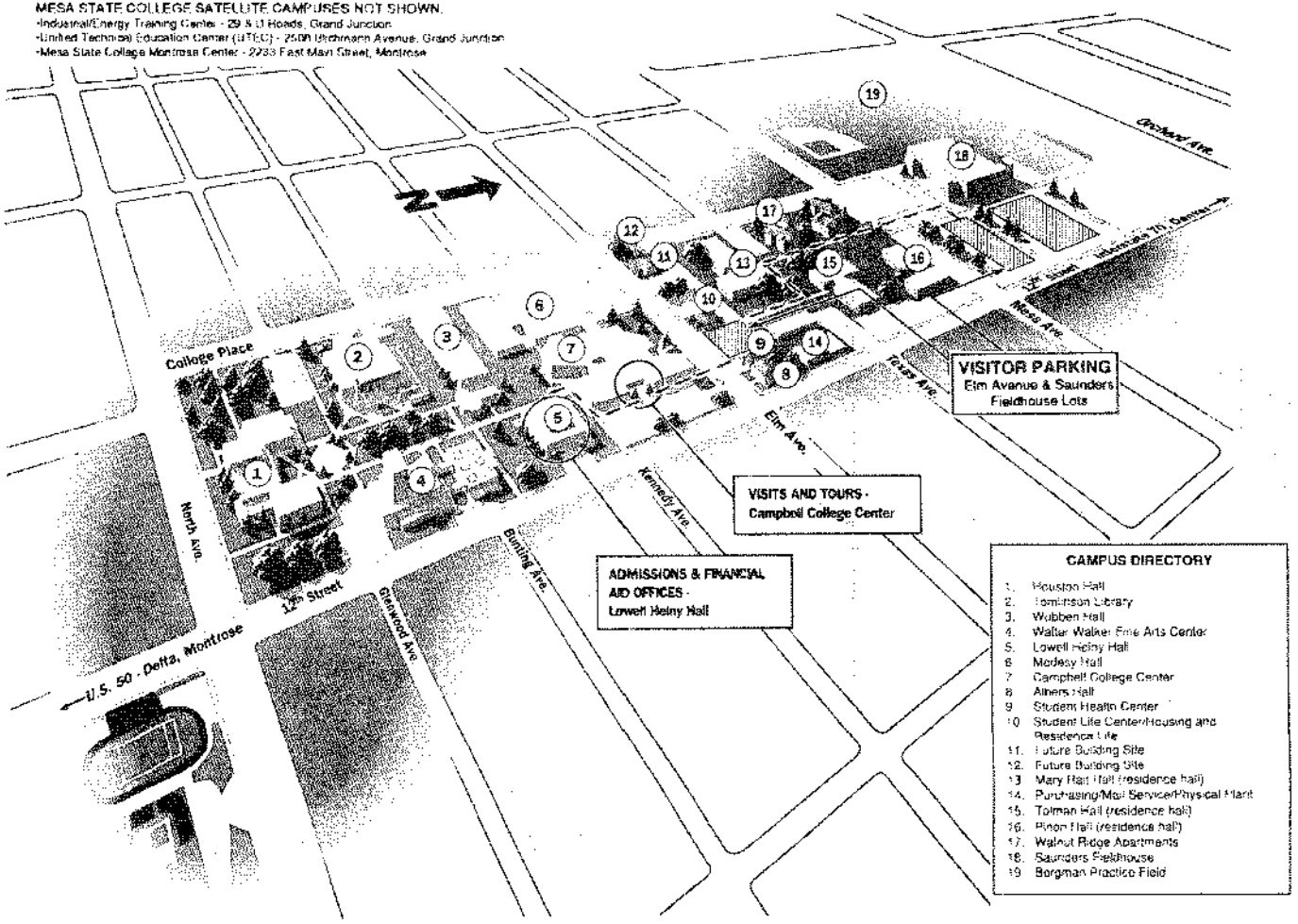
Address: MESA STATE COLLEGE, P. O. Box 2647, Grand Junction, CO 81502
Telephone: (303) 248-1020

Mesa State College does not discriminate on the basis of race, color, creed, national origin, sex, age, or handicap in admission or access to, or treatment or employment in, its educational programs or activities. Inquiries concerning Title VI, Title IX, and Section 504 may be referred to the Affirmative Action Office at Mesa State College, P. O. Box 2647, Grand Junction, CO.

Mesa State College is a Drug-Free Workplace. All employees and students of the College agree to abide by the requirements in the Federal Drug-Free Workplace Act and the policies stated in the brochure entitled "Drug-Free Schools, Campuses and Workplaces, State Colleges in Colorado, Drug Use and Alcohol Abuse Prevention Program." All employees and students are provided with copies.

As required by the Campus Security Act, Mesa State College publishes campus safety policies and statistics annually. Copies of the annual report are available upon request.

MESA STATE COLLEGE SATELLITE CAMPUSES NOT SHOWN.
-Industrial/Energy Training Center - 29 & 30 Roads, Grand Junction
-Limited Technical Education Center (LTEC) - 2508 Utechmann Avenue, Grand Junction
-Mesa State College Montrose Center - 2233 East Main Street, Montrose



CAMPUS DIRECTORY

1. Houston Hall
2. Tomlinson Library
3. Wubben Hall
4. Walter Walker Fine Arts Center
5. Lowell Heiny Hall
6. Modesy Hall
7. Campbell College Center
8. Albers Hall
9. Student Health Center
10. Student Life Center/Housing and Residence Life
11. Future Building Site
12. Future Building Site
13. Mary Rait Hall (residence hall)
14. Purchasing/Mail Service/Physical Plant
15. Tolman Hall (residence hall)
16. Rigon Hall (residence hall)
17. Walnut Ridge Apartments
18. Saunders Fieldhouse
19. Bergman Practice Field

TABLE OF CONTENTS

(See Alphabetical Index for specific topics)

FOREWORD

MESA STATE COLLEGE is a comprehensive coeducational institution operated under the governance of the Trustees of the State Colleges in Colorado.

This catalog is intended for the guidance of students and faculty but does not constitute a guarantee that all courses listed will actually be offered during any particular academic year. Mesa State College reserves the right to withdraw or add courses prior to the beginning of any semester or summer term. In some programs certain courses may be offered on an alternate-year basis or as determined by apparent demand. All program offerings are contingent upon adequate appropriations by the Colorado General Assembly.

GENERAL INFORMATION

How to Use This Catalog:

The table of contents lists each section of the catalog and the information contained within each section. For information on a specific topic, refer to the table of contents or the subject index in the back of the catalog. For additional information, contact the College toll free in Colorado at 1-800-982-MESA (outside Colorado 303 248-1376).

This catalog is divided into several sections in the following order:

General Information about Mesa State College
Included is a brief list of degrees and programs offered, admission requirements, registration procedures, expenses, financial aid, student services, academic regulations and honors, and graduation requirements.

Instructional Programs
Academic programs offered by the College are listed separately for each of the three schools, followed by (1) the baccalaureate degrees and (2) the associate degrees and certificates offered. Both of these sub-sections are in alphabetical order, with the general requirements for earning each degree or certificate included. The next sub-sections are (3) Teacher Certification and (4) Electives and/or Minors. Vocational degrees and certificates offered at the Unified Technical Education Center (UTEC) can be found in supplemental form as the last section of the catalog.

Course Descriptions
A brief description of each course at Mesa State College is listed alphabetically by prefix. (Courses at UTEC are a part of the UTEC supplement.)

Class schedules are published before each semester and are available from the Records Office. Not all classes described in this catalog are offered every semester or every year.

Campus Personnel
The governing board, administrative staff, and faculty are listed.

UTEC
Program and course information at the Unified Technical Education Center is provided in a supplement form, along with a UTEC index.

Index
This is the catalog index.

Policy Statement:

The programs, policies, statements, and procedures contained in this catalog are subject to change by the College without prior notice. Mesa State College reserves the right to at any time withdraw courses or modify the rules, calendar, curriculum, graduation procedures, and any other requirements affecting students. While the information contained in this catalog is current and correct insofar as possible at the time of printing, students are advised to check with appropriate College officials and current program sheets for up-to-date information.

Mesa State College Role and Mission

The threefold mission of the College is in accord with the statement of the Colorado Legislature C.R.S. 23-53-101:

There is hereby established a College at Grand Junction, to be known as Mesa State College, which shall be a general baccalaureate institution with moderately selective admissions. Mesa State College shall offer liberal arts and sciences programs and a limited number of professional and technical programs but shall not offer any graduate programs. Mesa State College shall also maintain a community college role and mission, including vocational and technical programs. Mesa State College shall receive resident credit for two-year course offerings in its commission-approved service area.

The Mesa State College community aspires to provide an environment which promotes a wellness lifestyle free of addictive behaviors. It shall be a goal of Mesa State College to maintain a healthy campus atmosphere conducive to learning and personal safety.

Background on Mesa State College

Mesa State College was founded in 1925 as Grand Junction State Junior College and on July 1, 1974, was authorized to offer baccalaureate degree programs as an institution under the State Colleges in Colorado. Enrollment, now over 4,500, provides a favorable student-faculty ratio and a high-quality learning environment.

Mesa State College is a democratic center of learning dedicated to the improvement of human capability. The College extends its services to anyone regardless of age, race, color, national origin, sex, or handicap. Committed first to instruction, as well as service and research, the College seeks to improve the unique talents and sense of social responsibility of each student.

By promoting the acquisition of skills as well as the discovery and application of knowledge, the College develops the intellectual, ethical, and aesthetic sensibilities that enable a student to pursue a rewarding career and assume a responsible and productive role in society.

The College seeks to liberate persons from narrow interests and prejudices, to help them observe reality precisely, to judge opinions and events critically, to think logically, and to communicate effectively.

The College offers programs of value in areas of civic and cultural life, research, and recreation and desires to play a constructive role in improving the quality of human life and the environment.

In order to implement this philosophy, the College shall offer:

1) Programs leading to baccalaureate degrees and associate degrees in liberal arts, sciences, business, and professional areas;
2) Vocational technical programs leading to certificates and associate degrees;
3) Continuing education programs directed toward personal, civic, vocational, and professional self-improvement;
4) A sufficiently wide range of lower division courses to assure smooth, successful transfer by students to other institutions with programs not offered by Mesa State College;
5) Community services, including intellectual, civic, and cultural activities, advisory services, and research programs;
6) Sufficient courses in all degree programs in general education areas to insure that students can be conversant in areas of general knowledge.

Accreditation

Mesa State College is accredited by the North Central Association of Colleges and Schools. Accreditation by this agency places credits earned at Mesa State College on a par with those earned at other similarly accredited institutions throughout the United States. Various programs at Mesa are approved by appropriate state and national agencies, including the Colorado Board of Nursing, National League for Nursing,

Colorado State Board of Accountancy, and the Committee on Allied Health Education of the American Medical Association (Radiologic Technology).

Location

The Mesa State College campus is located within the city limits of Grand Junction, the largest city in western Colorado with an area population of approximately 100,000. The campus is bordered by an attractive and modern residential neighborhood. Stores and other conveniences are located within walking distance of the campus. Mall shopping and the Main Street shopping district are both nearby.

Grand Junction has been noted for having more opportunities for outdoor recreation within a 100 mile radius of its boundaries than any other city in the Western U.S. The climate is one of the mildest in Colorado, with fewer days below 32 degrees than cities in the front and central ranges of Colorado. Powderhorn ski resort (1,600 feet vertical, 220 inches annual snow fall) is located 35 miles from campus and offers season passes at a discount to students in addition to instructional ski courses offered in conjunction with the Human Performance and Wellness department.

Lincoln Park, across from the campus, features a nine-hole golf course, swimming pool, tennis courts, track, football and baseball stadiums, and tennis courts. All are available to students.

College Community Relations

Located in the center for business, government, and medicine in western Colorado, Mesa State students have access to an outstanding variety of hands-on learning experiences offered through many academic departments in cooperation with community businesses and public agencies. Faculty members are available for lectures and discussions of interest to the community, and student groups appear before both public and private audiences for information or entertainment programs. The artistic, cultural, and athletic programs conducted by Mesa State College together with those devoted to public affairs and international relations enjoy broad community interest and support. Special programs of community-wide interest are presented in College facilities from time to time by community groups.

Wayne N. Aspinall Foundation

In cooperation with the Wayne N. Aspinall Foundation, Inc., Mesa State College students have an opportunity to participate in several cooperative programs. These include a course and public lecture offered by a distinguished visiting lecturer honored as the occupant of the Wayne N. Aspinall Chair of History, Political Science and Public Affairs; and a number of scholarships are awarded to students whose courses of study are directed toward careers in public affairs. Details of these programs may be obtained from the Dean, School of Humanities and Social Sciences.

The State Colleges in Colorado

The institutions governed by the Trustees of the Office of State Colleges in Colorado (OSC), Adams State College, Mesa State College, Metropolitan State College of Denver, and Western State College, are joined to identify and facilitate cooperative efforts among the institutions.

Mesa State College is also authorized to enter into consortium agreements with other public institutions of higher education in the state to make additional programs and services available to students. For details about these programs, contact the Continuing Education office at Mesa State College.

Inter-Institutional Students

One purpose of the OSC is to establish procedures for facilitating superior programs through shared resources—physical, professional, organizational, and curricular.

A student in good standing at any of the four OSC schools will be accepted as a student at any of the other three colleges. The Registrar's office at each college can provide a form for the student to use for inter-institutional registration. Before a student registers at another school, agreements must be reached by the home and host schools concerning the exact application of earned credits toward degrees, majors, and electives. A student should contact the home institution registrar to obtain further information on arrangements.

The terms "home institution" and "host institution" are defined as follows:

1. Each student shall have a "home institution," which is defined as that institution at which the student has matriculated, has earned academic credit, and is classified as a student in good standing. The home institution shall maintain all educational records and administer all student services, including financial aid. The home institution shall have responsibility for academic advising.
2. A "host institution" is defined as any of the four institutions, other than the home institution, at which a student enrolls in courses.

Institutions of the OSC have agreed on the following:

1. Credit for inter-institutional courses as defined above shall be treated as resident course credit and not as transfer credit for purposes of fulfilling program requirements and for graduation.
2. Grades shall be awarded by host institution faculty in the normal manner. The host institution shall provide the grades of students to the home institution registrar for posting to students' educational records.

Continuing Education and Extended Studies

The Extended Studies program offered through the Mesa State College Office of Continuing Education is part of a state-wide outreach education program sponsored by the Colorado Commission on Higher Education. The system, which consists of public colleges and universities, encourages development of instructional programs to meet the needs of Colorado citizens who cannot regularly enroll in classes on a college campus. Mesa State College's program currently offers both credit and non-credit classes and programs on campus and in several neighboring cities. The program is entirely self-funded by the fees charged for the classes.

Continuing Education is defined as "learning efforts undertaken by persons whose principal occupations are no longer as students, but who see learning as a means of developing their potential or resolving problems." The continuing education program addresses five areas of adult learning needs: (1) Basic and secondary educational skills required for high school equivalency for those lacking them. (2) Job-level entry and skill upgrading occupational and vocational courses for individuals seeking employment, upgrading their competencies, changing employment, or attempting to enter the work force for the first time. (3) Workshops, teleconferences, and seminars for professionals who need to upgrade their knowledge and skills to remain in good standing in their professions. (4) Programs for adults seeking self-enrichment/liberal arts/leisure time skills and activities. (5) Credit classes for working persons who cannot take classes at regular daytime hours.

Most of the Continuing Education classes are scheduled in the evenings and non-credit offerings are usually less than a semester in length. Registration is conducted through the Office of Continuing Education, phone (303) 248-1476 or FAX (303) 248-1923. During the academic fall and spring semesters, the Continuing Education office is open Mondays through Thursdays from 8:00 a.m. until 7:30 p.m. On Fridays

the offices are open from 8:00 a.m. until 5:00 p.m. During summer session the offices are open Mondays through Fridays, 8:00 a.m. until 5:00 p.m.

The Office of Continuing Education provides several special offerings. Among these are a summer dance program, Elderhostel, teleconferences, classes for children, graduate programs, and the hot line school.

Mesa State College Montrose Center

Located at 2233 East Main in Montrose, the Center houses two classrooms, a microcomputer lab, a conference room, a reception area, and offices. The Center is open from 9:00 a.m. to 4:30 p.m. Monday through Thursday. The telephone number for the Center is (303) 249-7009. Due to the high demand for evening classes, some classes are held at Montrose High School and Centennial Junior High School. The Center offers credit and non-credit classes and also brokers graduate classes from other institutions.

The focus of the Center is on general education requirements that can be transferred to the main campus or another institution as a beginning toward a degree. Students can also work toward an associate or baccalaureate degree by taking classes at the Montrose Center.

Tutorial and Learning Center

For information about the Tutorial and Learning Center, see the Student Services section of this catalog.

Physical or Learning Disabled

Information regarding Mesa State College services for the physically or learning disabled student is found in the Student Services section of this catalog.

Summer Session

Mesa State College offers a summer program based upon needs and wishes expressed by students and residents of the community. Typical offerings in previous summers have included courses in biology, business, data processing, engineering, fine arts, humanities, mathematics, physical education, physical science, social science, and occupational education.

FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT OF 1974

Mesa State College's practice in regard to student record keeping is based on the provisions of the Educational Privacy Act of 1974 (the Buckley Amendment). Intended to be a safeguard against the unauthorized release of information, this act applies to all enrolled students, former students, and alumni. For details, see the Mesa State College Student Handbook.

DEGREES AND PROGRAMS

Mesa State College grants the Bachelor of Business Administration, Bachelor of Science in Nursing, Bachelor of Arts and Bachelor of Science degrees. The College awards Associate of Arts and Associate of Science degrees as well as Associate of Applied Science degrees and certificates of proficiency in occupational (vocational-technical) areas. General requirements for each degree and certificate program are listed in the Graduation Requirements section as well as in the text devoted to each degree. While these general requirements are as correct and current as possible at the time of publication, some changes may occur. Each degree or certificate seeking student must obtain a program sheet from the appropriate School detailing specific and current requirements for the degree or certificate sought and is responsible for meeting these requirements.

The three academic schools at Mesa State College and their respective subject matter areas are:

School of Humanities and Social Sciences—Administration of Justice; Anthropology; Commercial Art; Counseling Psychology; Criminology; Economics; English; Fine and Performing Arts: Art, Music, Music Theatre, Theatre; Foreign Languages; General Social Science; History; Human Services; Liberal Arts; Mass Communications; Philosophy; Political Science; Psychology; Sociology; Speech.

School of Natural Sciences and Mathematics—Biology; Computer Science; Engineering Methods; Environmental Restoration Engineering Technology; Environmental Restoration and Waste Management; Geology; Mathematics; Pre-Engineering; Pre-Forestry; Pre-Health Professions (Pre-Dentistry, Pre-Medicine, Pre-Medical Technology, Pre-Optometry, Pre-Pharmacy, Pre-Physical Therapy, Pre-Veterinary Medicine); Physics; Statistics.

School of Professional Studies—Accounting; Administrative Office Management; Business Administration; Business Computer Information Systems; Business Economics; Early Childhood Education; Finance; Human Performance and Wellness; Human Resources Management; Legal Assistant; Management; Marketing; Nursing, Office Administration; Office Supervision and Management; Accounting Technician, Administrative Secretary, Legal Secretary, Medical Secretary, Parks and Recreation; Radiologic Technology, Teacher Education and Certification; Travel, Recreation, and Hospitality Management.

Other Mesa State College service areas include:

Unified Technical Education Center (UTEC)—Coordinates various secondary, post-secondary and occupational programs. See Unified Technical Education Center (UTEC) section in this catalog for further information.

Continuing Education—Coordinates credit and non-credit adult education classes, off-campus classes, and graduate courses/programs from other institutions which are delivered on the Mesa State College campus.

Degrees and Programs of Study

Studies undertaken by a student at Mesa State College depend upon career plans and educational objectives. The College offers baccalaureate degrees, associate degrees and certificates.

Baccalaureate degrees offered by Mesa State College are the listed B.A., B.B.A., B.S. and B.S.N. degrees as listed below. Concentrations and options available within the baccalaureate degrees are indicated under the degrees.

Associate of Arts or Associate of Science (A.A., A.S.) degrees are available in a number of emphases at Mesa State College. Students enrolling in these degrees may be preparing for immediate employment upon graduation or they may expect the two-

year degree to be the first phase of their total educational goals. All A.A. and A.S. degrees include the state-wide common core of general education curriculum and, when completed successfully, will thus meet the lower-division general education requirements of most baccalaureate degree programs in Colorado.

Mesa State College also offers a variety of occupational education programs. These Associate of Applied Science (A.A.S.) degrees and certificates of occupational proficiency are of a terminal, technical, or semiprofessional nature and are normally chosen by students whose immediate plans do not include completion of a baccalaureate degree. They are designed to help students develop the specific skills required for employment in various technical occupations. Also see the section on UTEC in this catalog.

Degrees and Certificates offered at Mesa State College
(Degrees and certificates of occupational proficiency are in bold print; concentrations, options and emphases are not in bold print)

Bachelor of Arts (B.A.)
- **Economics**
  - Applied Economics: Administration
- **English**
  - Literature
  - Writing
  - English with Teaching
- **Fine and Performing Arts**
  - Art
  - Music
    - Commercial
    - Performance
    - Music with Teaching
  - Music Theatre
  - Theatre
    - Acting/Directing
    - Design/Technical
- **History**
- **Human Performance and Wellness***
  - Adapted Physical Education
  - Corporate Fitness/Exercise Science
  - Human Performance and Wellness with Teaching
- **Liberal Arts**
- **Mass Communications**
  - Broadcasting
  - News/Editorial
  - Public Relations
- **Political Science**
  - Administration of Justice
- **Psychology**
  - Counseling Psychology
- **Selected Studies**
- **Social Science**
- **Sociology**
  - Anthropology
  - Criminology
  - Human Services

*Pending Approval

Bachelor of Business Administration (B.B.A.)
- Administrative Office Management
- Business/Economics
- Business Computer Information Systems
- Finance
- Management
- Marketing
- Human Resources Management

Bachelor of Science (B.S.)
- **Accounting**
- **Biological Sciences**
  - Biology with Teaching
- **Computer Science**
- **Environmental Restoration and Waste Management**
- **Mathematics**
  - Mathematics with Teaching (Elementary or Secondary)
  - Statistics
- **Parks and Recreation Resource Management**
- **Physical Sciences**
  - Geology
    - Environmental Geology
    - Geology with Teaching
  - Physics
  - Physics with Teaching

Bachelor of Science in Nursing (B.S.N.)

Associate of Arts (A.A.)
(Emphases available in numerous disciplines)

Associate of Science (A.S.)
(Emphases available in numerous disciplines)

Associate of Applied Science (A.A.S.)
- **Business Computer Information Systems**
- **Commercial Art**
- **Environmental Restoration Engineering Technology**
- **Nursing**
- **Office Supervision and Management**
  - Accounting Technician
  - Administrative Secretary
  - Legal Secretary
  - Medical Secretary
- **Radiologic Technology**
- **Travel, Recreation, and Hospitality Management**

Certificate of Occupational Proficiency Programs
- **Early Childhood Education**

Certificates of Completion
- Engineering Methods (to be completed prior to an A.S. in Engineering)

Legal Assistant Program (offered through Continuing Education, requires a baccalaureate degree or three years related work experience).

Teacher Certification in elementary, secondary and K-12 in certain academic disciplines.

ADMISSION INFORMATION

Admission to Mesa State College

How to Apply

To be considered for admission, applicants should submit the application attached at the back of this catalog along with a $20 non-refundable application fee. The application deadline is one month prior to the beginning of the fall semester and two weeks prior to the spring semester or summer term. Upon receipt, the application will be processed immediately, and the applicant will be notified of his or her admission status, once all credentials have been received. Applications may also be obtained from the Admission Office of Mesa State College or from any Colorado high school counselor. To request an application from Mesa State, call toll free 1-800-982-MESA (in Colorado) or (303) 248-1376 (outside Colorado).

High school students may apply as early as the completion of their junior year. In general, applicants applying for a baccalaureate program having earned a minimum grade point average of 2.50, a composite score of 21 on the ACT, or 810 combined on the SAT, may be admitted to Mesa State.

Admission does not assure acceptance of an individual student in a particular course or program. Admission to the College does not, therefore, imply entry into any program which has selective admission standards. Some students may be requested to enroll in special courses for correction of scholastic or other deficiencies. Minimum skill levels are required for admission to even basic courses.

Students not accepted into a baccalaureate program may be admitted into a Mesa State associate degree or certificate program for which they qualify. Students may reapply for admission into a baccalaureate degree program after completing 12 semester hours of college level course work with a cumulative grade point average of 2.00 or better or after earning an associate degree.

Orientation and Registration for Classes

New students are required to meet with a registration adviser, who will register the new student for classes. This may be done with an individual appointment or at a scheduled orientation session. Information on both will be mailed to students when they are admitted to Mesa State College, along with step-by-step procedures. See section on Academic Advising.

New students are encouraged to attend an orientation program. The student-run orientation programs are held throughout the year.

A $75 non-refundable confirmation deposit must be received, by the published deadline, for the student's schedule to be retained. (The deposit applies in full towards tuition costs.)

Degree-seeking students who have not completed the admission process will not be allowed to register for classes. (To be considered for admission students must, before the published deadline, complete an application for admission, submit the application fee, and have all credentials on file, including transcripts and test scores.) Nondegree status is not an option for degree seeking students. First-time freshman students and students transferring to Mesa State with fewer than 30 semester credit hours are required to have ACT or SAT scores and high school transcripts on file before their file is considered complete.

Admission Procedures by Student Classifications

Specific admission procedures for high school students, GED certificate students, transfer students, and other student classifications are as follows:

High school students

1. Obtain and complete an application for admission to Mesa State College.
2. Request that a high school counselor complete and sign the high school information section of the application.
3. Submit the completed application along with a non-refundable $20 application fee.
4. Request that the high school counselor forward official transcripts directly to the Mesa State College Admission Office. Mesa State College requires a final high school transcript showing a graduation date.
5. Take either the American College Test (ACT) (preferred) or Scholastic Aptitude Test (SAT) and have the results sent directly to Mesa State College.

General Educational Development (GED) Certificate Students

1. Obtain and complete an application for admission to Mesa State College.
2. Submit the application along with a non-refundable $20 application fee.
3. Submit a copy of the GED test scores.
4. Take the American College Test (ACT) or Scholastic Aptitude Test (SAT) and have the results sent directly to Mesa State College.

Applicants who successfully complete the GED with a minimum score of 45 and appropriate ACT or SAT test scores may be admitted to Mesa State College. Admission to particular programs is contingent on meeting specific admission requirements for those programs.

Transfer Students

1. Obtain and complete an application for admission to Mesa State College.
2. Submit the application along with a non-refundable $20 application fee.
3. Request that *each* previously attended college or university send official transcripts to the Mesa State College Admission Office. **Mesa State College will not accept any transcripts from applicants under any circumstance.** All transcripts must be sent from the issuing institution to Mesa State College.
4. If transferring fewer than 30 semester hours of college course work,
   (a) request that the high school send official transcripts directly to the Mesa State College Admission Office. (GED scores will be required if applicant did not graduate from high school.)
   (b) ACT or SAT test scores must be on file before the admission process is complete.

Transfer students may be admitted into most baccalaureate degree programs if they are in good standing at another regionally accredited college or university and have a minimum cumulative grade point average of 2.00 for 12 or more semester credit hours or an associate degree.

Transfer students who are on probation or suspension from another college or university **will not** be admitted into a baccalaureate degree program. **Transfer students who are on probation or suspension from another college will automatically be placed on probation at Mesa State College, if admitted.**

Students may request an evaluation of transfer courses to determine applicability toward their degree program. General education evaluations are completed in the Records Office; specific degree requirements are determined by the faculty adviser.

It is Mesa State College's policy to accept academic credits from:

1. All public colleges and universities in the state of Colorado, provided they are currently accredited. This applies regardless of the institution's accreditation status at the time the credit was earned.
2. Private and out-of-state colleges and universities, provided the institution is currently accredited and was accredited or was a candidate for accreditation at the time the credit was earned.

3. Accredited two-year community or junior colleges.
4. Institutions that award "S" or "P" grades, if the granting institution states that such grade is equal to a grade of "C" or better.

Only credits with a grade of "C" or better are eligible to be used toward a degree or certificate.

Mesa State College reserves the right to evaluate, on a course-by-course basis, any credits earned 15 years prior to enrollment. Initially only courses used to fulfill general education requirements will be accepted in transfer. Other courses will be transferred upon acceptance by the adviser or dean.

Returning Students

A returning student (any student who has previously attended Mesa State College and has been out for at least one semester, summer term excluded, is a returning student) must complete a returning student application form. The form may be obtained at the Mesa State College Admission Office. If the student has attended another institution since last attending Mesa State College, official transcripts of all work must be sent directly to Mesa State College from *each* institution attended. See "Catalog Under Which a Student Graduates" section to determine the catalog to be followed for graduation.

Students returning after being on suspension must schedule an appointment with the Director of Admission at Mesa State College to discuss the conditions for re-admission.

Academic Renewal

A student who re-enrolls at Mesa State College following an absence of at least five years may be eligible for "academic renewal." If "academic renewal" is approved, *none* of the course credits and grades earned at Mesa State College prior to the five-year minimum absence will be used for meeting graduation requirements or in determining the student's grade point average.

Among the requirements to be eligible to apply for "academic renewal" is that the student *not* have taken any course for credit at any college at any time during the five year period immediately preceding re-enrollment.

A student has one year from the date of re-enrollment at Mesa State College in which to petition the Director of Academic Records for "academic renewal."

Non-Degree Seeking Students

Students who do not wish to pursue a degree or certificate at Mesa State College may register without being formally admitted to the College. Students wishing to enter Mesa State College as non-degree seeking must be at least 20 years of age and cannot have been enrolled at Mesa State College previously as a degree seeking student. Non-degree seeking students must consistently earn a minimum semester grade point average of 2.00. Students who fail to achieve the minimum must apply for admission as a degree seeking student to continue taking classes. Non-degree seeking students working to become degree seeking or non-degree seeking students who earn thirty semester hours must apply for admission to Mesa State College. A non-degree seeking student must complete the Non-Degree Seeking Student application.

Non-degree seeking students **have not** been admitted to Mesa State College and are not guaranteed admission should they later make formal application. Once non-degree seeking students apply for formal admission to Mesa State College, the admission policies in effect at the time of application will be used to determine admissibility into the college in general and/or specific academic programs. This includes satisfying all requirements for Admission Assessment tests such as the ACT or SAT or, for certificate students, the alternative assessment test. Non-degree seeking students are not eli-

gible for financial aid and will not be assigned an adviser. Degree seeking students will have priority over non-degree seeking students regarding registration.

Concurrent Students

High school students in the eleventh or twelfth grades who attend a high school within commuting distance to Mesa State College may be eligible to take one or more classes at Mesa State College. High school students interested in enrolling for classes at Mesa State College must first contact their individual high school counselors. Concurrent students must submit the following before they will be allowed to register for classes:

1. A Concurrent Enrollment form.
2. An official high school transcript. (ACT or SAT scores are preferred at this time, but not required.)

Concurrent students are not admitted to Mesa State College. When concurrent students wish to become degree seeking students at Mesa State College, they must complete the admission process and will be subject to the admission policies in effect at the time of application. Students seeking concurrent student status and seeking financial support from their school district must begin the procedure 60 days prior to the term in which they wish to enroll.

International Students

To be considered for admission, students who are not U.S. citizens must complete and submit the following to the Admission Office at Mesa State College prior to August 1 for fall semester and at least two weeks prior to spring semester and summer session:

1. Application form with $20 non-refundable application fee.
2. Copy of their American College Test (ACT) scores or Scholastic Aptitude Test (SAT) scores and results from the Test of English as a Foreign Language (TOEFL).
3. High school transcript (must be translated into English).
4. Transcripts from all other colleges or universities attended (must be translated into English).
5. Affidavit of financial support.
6. Evidence of medical insurance. Students who do not have proof of medical insurance will be required to purchase Mesa State College student health and accident insurance.
7. For registration purposes, all international students are required to comply with the Colorado law on measles, mumps and rubella. A Mesa State College official form must be completed and returned to the Admission Office.

Prospective international students whose primary language is not English seeking regular admission to Mesa State College must provide documented evidence of ability to read, write, speak, and understand the English language. This requirement may be fulfilled in one of the following ways:

1. Submission of scores of Test of English as a Foreign Language (TOEFL) with an average of 525 or higher.
2. Submission of results of Michigan Test of English Language with a minimum score of 80.
3. An international student who has been enrolled as a full-time student at another college or university in the United States may request consideration of fulfillment of this requirement on an individual basis.
4. Successful completion of the Colorado International Education and Training Institute of Grand Junction, Colorado, intensive English program (signature of director required).
5. Other evidence will be considered on an individual basis.

Before admission is granted, an international student must provide proof of financial ability to meet cost of tuition, fees, books, living accommodations, and incidental expenses for at least one full year. The total cost per student is approximately $12,000 per calendar year (12 months).

Additional information and forms may be obtained from the Admission Office.

Admission to Specific Programs

Certain baccalaureate, associate, and certificate programs may have specific entrance requirements in addition to general college admittance. Prospective students should check with the Dean of the School in which the desired program is offered for special requirements or call 1-800-982-MESA in Colorado or (303) 248-1376 outside Colorado. Two examples follow:

Nursing Programs

Students applying to the Nursing and Allied Health programs must submit additional material. *ACT or SAT scores are required for all Nursing and Allied Health applicants.* The only students for whom the ACT/SAT requirement is waived are those applying to the B.S.N. program who have earned 60 or more college level credit hours. Students applying for admission into the programs of Nursing and Allied Health may be admitted into the general College. Admission to Mesa State College does not guarantee admission into the Nursing program, which requires a separate application. Please contact Nursing and Allied Health for additional information by calling toll free 1-800-982-MESA in Colorado or 303-248-1398 outside Colorado.

Selected Studies Program

Entering freshmen are not eligible for admission to the Selected Studies Program. Once a student has completed twenty-four (24) college-level hours with a minimum cumulative grade point average of 2.50, he or she may apply to the Selected Studies Program by contacting the Dean of the School in which his/her major area of study will be undertaken.

Transfer students who are applying for academic programs in Selected Studies will receive an application from the Admission Office. The application must be completed and presented to the appropriate Dean within two weeks. Students will be notified in writing as to their acceptance or denial into the Selected Studies Program. Transfer students must have earned at least 24 college level semester hours with a minimum cumulative grade point average of 2.50 to be considered for admission into the Selected Studies program. For further information, see "Selected Studies" under the "Program" section of this catalog.

Selective Service

Any male student born on or after January 1, 1960 wishing to attend classes at Mesa State College must attest to his registration or exemption from registration with the Selective Service. This attestment must be done prior to initial registration.

Immunization Policy for Measles or Rubella

Proof of immunization for measles/rubella is a Colorado state law. In compliance with that law and Mesa State College policy, all students 19 years of age and younger must provide confirmation of two (2) measles and rubella vaccinations or provide laboratory documentation showing an elevated measles titer. Students 19 years of age and younger must prove compliance within 60 days of the beginning of classes the first term they attend or they will not be allowed to register for the next term.

Veterans

Programs offered by Mesa State College, 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 public laws. A veteran or dependent planning a course of training in a special program not described in the College catalog or identified as approved for veterans' benefits should check with the veterans certification officer before enrolling in such a program, if benefit assistance is desired.

Veterans and dependents who plan to apply for VA benefits while attending Mesa State College should contact the Office of Veterans Affairs as soon as the decision to enroll is made. Application for benefit assistance must be made at least two months prior to initial registration if the advance benefit check is to be received on the first day of class. Without this advance application, the student must make other financial arrangements and be prepared to finance tuition and fees, books, supplies, and living expenses for at least two months. Six weeks is the normal processing time required for Veteran's Administration to establish an applicant's file. Further information may be obtained from the Office of Veterans Affairs in the office of the Director of Academic Records.

Credit may be granted for experience and training gained during active duty in the armed forces. Students must submit appropriate discharge papers and certificates of completion to the Office of the Director of Academic Records. All credit granted will be lower division credit.

Admission Assessment and Counseling Tests

ACT or SAT

Scores from either the ACT (preferred) or the SAT are required of all degree-seeking students attending Mesa State College. Test scores must be on file in the Admission office before official acceptance is granted. Certificate seeking students are required to have ACT or SAT scores on file or to have taken the alternative assessment test (see "Alternative Admission Assessment Device" section). A student's attainment of a certain ACT composite score, or SAT combined score is one of several criteria considered for admission to a baccalaureate degree program. Certain other programs, including programs offered in Nursing and Allied Health, have a minimum ACT or SAT score requirement. For specific requirements, inquire of the Dean of the appropriate school. ACT and SAT test results also are used by the student and adviser as the basis for planning a course of study and as an aid in academic placement. Supplemental academic assistance is provided on a limited basis for those whose test scores indicate weaknesses or deficiencies in certain areas such as English and mathematics. ACT and SAT scores also may be used for scholarship consideration and institutional research.

The only exemptions to this admission requirement are for:

1. Students enrolled *only* in non-credit classes offered through Continuing Education.
2. Transfer students to Mesa State College from other accredited colleges or universities with 30 or more semester hours of credit. This does not apply to applicants to the Nursing and Allied Health programs and any other programs that may require a specified ACT or SAT score as an entrance requirement.
3. Students who have already earned an associate or baccalaureate degree at another accredited institution.
4. Non-degree seeking students.

Prospective students are encouraged to take the ACT or SAT during their high school senior year. Transfer students (unless exempt) are required to have their ACT or SAT scores on file in the Admission Office prior to registration. ACT or SAT

scores from a previous college or university are acceptable. Students are required to retake the ACT/SAT test if their scores are three or more years old.

A special residual ACT test is scheduled prior to registration each semester for applicants seeking admission to Mesa State College who did not take the ACT on one of the national test dates. A testing fee of approximately $30.00 will be collected from the student immediately prior to taking the test. Test results will be available to the student's adviser during registration. Contact the Testing office for further details (303) 248-1215.

Alternative Admission Assessment Device

Assessment tests are required of students *before* they may enroll: (1) in certificate programs of one year or less or (2) as non-degree seeking students. These students may choose:

1. The ACT or SAT.
2. An alternative assessment device. Certificate and non-degree seeking students who wish to use this alternative must contact UTEC for details and cost information.

Should a certificate-seeking student want to become a degree-seeking student, he or she must comply with all entrance requirements for the new program. This will include taking the ACT or SAT if the student has not done so.

Assessment and Evaluation after Enrollment

Students are required to participate in testing and other programs necessary for evaluation and assessment purposes. Please see the "Evaluation" section of "General Academic Requirements" in this catalog.

Non-Traditional Credit

Non-traditional credit can be earned from sources such as the following:

Advanced Placement/Credit Program

Students wishing academic credit or advanced placement for college level work done while in high school should take the appropriate College Board Advanced Placement examination. These examinations are administered several times each year at numerous locations throughout the United States. College Board Advanced Placement examination scores currently accepted at Mesa State are American history; art: history; art: studio; biology; chemistry; computer science; English language and composition; English literature and composition; European history; French language*; French literature; German literature*; mathematics: calculus AB; mathematics: calculus BC; music listening and literature; music theory; physics B; physics C: mechanics; physics C: electricity and magnetism; Spanish language*; Spanish literature*. The Admission Office will supply information concerning the scores required for earning academic credit or advanced placement in the various subject areas.

College Board Advanced Placement credit will not be entered on a student's transcript until the student has achieved 12 hours of credit at Mesa State College.

* Level 3

College Credit by Examination and Department Challenge Examinations

Students attending Mesa State College may earn college credit by examination in certain subject areas on the College Level Examination Program (CLEP). Credit may also be earned by subject matter tests offered through various departments at Mesa State College (Department Challenge examinations). Students must have completed 12 credit hours of course work at Mesa State College before challenge credits will be recorded on a transcript.

Registered Nurse (RN) students seeking credit for prior nursing learning experi-

ences see the Bachelor of Science in Nursing in the "Programs of Study" section of this catalog.

For more information contact the appropriate Dean or the College Testing office at (303) 248-1215.

Limitation on Non-Traditional Credit

The faculty and dean of each school determine if and under what conditions non-traditional credit is allowed. If allowed, the following limits apply:

1. Military credits—maximum of 20 lower division credit hours.
2. CLEP and department challenge examinations—maximum of 20 credit hours for a baccalaureate degree or an Associate of Applied Science degree, a maximum of 12 credit hours for an Associate of Arts or an Associate of Science degree and a maximum of six credit hours for a certificate of occupational proficiency.
3. Advanced placement—maximum of 30 credit hours for a baccalaureate degree, 15 credit hours for an associate degree or a maximum of six credit hours for a certificate of occupational proficiency.
4. Competency credit—maximum of 30 credit hours towards a baccalaureate degree or 25 percent of the total credits required for the program towards an associate degree or a certificate of occupational proficiency at the prerogative of the Dean of the School. Further restrictions apply. See the Director of Academic Records for details and guidelines.
5. Cooperative Education, Internships, Practicums, etc.—non-classroom oriented course such as cooperative education, internships, practicums and other courses determined to be of this type are subject to the following limits: a maximum of 12 semester hours of credit may be used to satisfy the required academic semester credits for a baccalaureate degree. A maximum of 6 semester hours may be used to satisfy the academic semester hours for an A.S. or A.A. degree. The maximum of 12 semester hours may apply toward the 40 upper division hour requirement. No restriction on the maximum number of credits above and beyond any degree requirement is intended. These restrictions do not apply to the A.A.S. degree or certificate programs.

The total combination of any non-traditional credit cannot exceed:

1. Baccalaureate - 30 credits
2. Associate of Science or Associate of Arts - 15 credits
3. Associate of Applied Science - 20 credits
4. Associate of Applied Science-Nursing - 18 credits
5. Certificate - twenty-five percent of the credits required in the program

Students may not earn any form of non-traditional credit in a class in which they have been previously enrolled and received a grade of A-F or WF.

Acceleration of College Study

It is possible for students to satisfy requirements for baccalaureate degrees in less than the traditional four years (eight regular academic year semesters). Ways of accomplishing this include: enrolling in college classes while a senior in high school; exceeding the normal course load at Mesa State College or elsewhere; challenging by examination courses in which competence has previously been attained; earning credit by testing through the College Level Examination Program (CLEP); obtaining credit for work experience (competency credit). Additional information may be obtained from faculty advisers and the Testing office.

No-Credit-Desired Courses

A student who desires to attend certain classes regularly, but does not wish to receive grades or credit, should register for "no credit desired" in these classes.

Tuition charges for classes taken for non-credit are the same as for classes taken for credit. Exceptions to this policy will be made for senior citizens.

Senior Passport to Education Program

Mesa State College provides individualized support, including academic and scheduling decisions, for persons 60 years and older.

Classes for No Credit

Persons 60 years of age or older who do *not* wish to earn college credit may attend resident instruction classes, on a space-available, instructor-approved basis, at Mesa State College without paying tuition or fees. (This policy does not apply to laboratory, Continuing Education and certain other courses for which special charges normally are assessed.)

Interested persons should obtain a registration form from the Continuing Education office in Albers Hall or telephone (303) 248-1476 or (303) 248-1847. The registration form must be signed by the instructor granting approval and returned to the Coordinator of Non-Traditional Adult Students. No Mesa State College records of participation will be maintained.

Classes for Credit

Person 60 years or older who wish to enroll for credit must submit required admission and registration materials to the Office of Admission. The same deadlines, costs, etc., as for other students will apply.

EXPENSES AT MESA STATE COLLEGE

Mesa State College reserves the right to adjust any and all charges, including fees, tuition, and room and board, at any time deemed necessary by the Trustees.

Determination of Residence Status for Tuition Purposes

A person moving to Colorado must be domiciled in the state for 12 continuous months before being eligible to apply for in-state resident status. To qualify for in-state tuition, however, a person must do more than merely reside in Colorado for the preceding 12 months. "Residency" in this context means legal "domicile" which requires intent to remain in Colorado indefinitely, regardless of enrollment at Mesa State College. For a student under the age of 21, the residency classification is based on the parents' residency unless the student can prove emancipation. Students 21 years of age or under, if emancipated, must demonstrate that they themselves have met the residency requirements.

Examples of actions which can establish residency intent are: payment of Colorado state income tax, registration of a vehicle in Colorado, and possession of a Colorado driver's license. The final decision regarding tuition status rests with Mesa State College. Questions regarding residence (tuition) status should be referred only to the Director of Admission. Opinions of other persons are not official or binding upon the College.

Tuition and fees for the 1994-95 academic years had not been determined when this catalog was printed. The following estimated rates are presented for planning purposes only. Students are invited to write for the most current rates, available in July each year.

Tuition and Fee Schedule

(Estimate for 1994-95)

Full-Time Students, Regular Academic	**Semester**	**Year**
Colorado Residents (enrolled in 10 or more hours)		
Tuition	$ 697.00	$1,394.00
Student Services Fees	176.00	352.00
TOTAL	$ 873.00	$1,746.00
Non-Colorado Residents (enrolled in 10 or more hours)		
Tuition	$2,440.00	$4,880.00
Student Services Fees	176.00	352.00
TOTAL	$2,616.00	$5,232.00
Part-Time Students, Regular Academic Year:		
Colorado Residents (enrolled in 9 or fewer hours)		
Tuition per semester hour	$ 69.00	
Student Services Fees per semester hour	15.00	
TOTAL	$ 84.00	
Non-Colorado Residents (enrolled in 9 or fewer hours)		
Tuition per semester hour	$ 220.00	
Student Services Fees per semester hour	15.00	
TOTAL	$ 235.00	

A surcharge equal to the appropriate credit hour tuition rate will be assessed per semester for each credit hour over 21.

Non-Refundable Confirmation Deposit

A $75 confirmation deposit is required prior to the beginning of fall and spring semesters in order for the registered student's class schedule to be retained. The deposit applies, in full, to tuition and fees. It is not refundable.

Summer Session

Students confirm their class schedules upon registration. No confirmation fee is required for summer session. Tuition charges equal those for the regular fall or spring semesters; however, student services fees are $14.10 per semester hour regardless of the number of hours taken. The computer lab fee is $1.30 per semester hour up to a maximum of $13.00

Payment of Tuition and Fees

Students, by the act of registration and confirmation, automatically incur a financial obligation to the College. This means that students who register for one or more classes (unless they **officially withdraw** from the College within the time specified for a partial refund), are obligated to pay the full amount of their tuition and fees, whether or not they attend class. No student having unpaid financial obligations of any nature due Mesa State College will be allowed to register for classes, graduate, or receive a transcript of credits.

Tuition and fees are due in full on or before the 12th day of classes. A late fee of $50 will be assessed if this payment is not made.

Refunds of Tuition and Fees

Beginning with the first day of classes and continuing through the sixth day, if students officially withdraw, the College will retain 25% of their tuition and fees; if tuition and fees have been paid, the remainder will be refunded; if tuition and fees have not been paid, the students will be billed for 25% of their incurred debts.

From the 7th through the 12th day of classes, students who choose to withdraw will forfeit 50% of tuition and fees.

From the 13th through the 20th day of classes, students who choose to withdraw will forfeit 75% of tuition and fees.

There are no refunds for withdrawals after the 20th day of classes.

The Office of Continuing Education operates under a different refund policy. Please contact that office for specific information.

Room and Board

Freshman and sophomore students who are under 21 years of age and not residing with their parents in Mesa County are required to live on campus. A student may qualify for exemption from the on-campus requirement for definite reasons expressed in writing and approved by the Director of Housing if he or she is:

1. Married; or
2. 21 years of age or older; or
3. A part-time student (enrolled for less than 10 hours per semester); or
4. Residing at the permanent address of parents or step-parents; or
5. Of junior class standing since the preceding semester; or
6. Not of junior standing but has resided in the residence halls for four semesters; or
7. Medically excused (with written documentation from a medical doctor).

On-campus living offers many advantages. Its location, just steps away from classrooms, student services, and the library, makes on-campus living very convenient for Mesa State students. In addition, living on campus relieves the students of many time-consuming chores such as preparing meals, washing dishes, and driving to and from the campus. With this extra time, students are able to devote more energy to their studies, to recreational activities, and to making new friends.

Upon acceptance to Mesa State College, a packet of information, which will include a Student Housing Contract and Application Card, will be mailed to all students who are under 21 as of September 1, 1994 and who live outside of Mesa County. Stu-

dents who do not meet the above criteria must call or write the Housing and Residence Life Office to request that a packet be sent to them.

Each residence hall and apartment complex is staffed with a resident director, assistant director, and resident assistants who are trained to assist students. These staff members aid residents in dealing with programs, policies, and other matters associated with college life.

The Student Housing Office serves as a clearinghouse of housing service opportunities. In the Student Life Center, students can make arrangements for room and board, receive assistance with personal matters, make suggestions for improvements, and receive assistance for a variety of related housing concerns and interests.

The Facilities

There are two types of on-campus housing available: (1) College residence halls which require a meal plan (most rooms are designed for two students, although there are a limited number of single rooms); (2) College apartments, available for sophomores, juniors, and seniors.

The apartments are modern living units for three or four students and each consists of bedrooms, bath, kitchen and living room. The residence halls are furnished with standard twin beds, desks, chairs, closets, and drawer space. Each room in the residence halls and each apartment is equipped with a telephone. A student may call within the local Grand Junction area without charge. If the student wishes to call long distance (other than collect), a long distance system must be obtained from a private company.

Student Housing Contract

Students who wish to apply for accommodations on campus are required to submit a $150 deposit with their signed contract and completed application card. The deposit includes a $25 non-refundable application fee. Rooms/apartments will be assigned in the summer and each student will be notified by late July as to assignment.

The student housing contract is a legal agreement between the student and Mesa State College covering room and board on campus. Both parties assume the rights and responsibilities outlined in the "Housing Contract" and all supporting documents upon acceptance of the contract by Mesa State College.

Questions concerning housing on campus should be directed to the Housing Office located in the Student Life Center at 1152 Elm, across from the W.W. Campbell College Center.

Off-Campus Housing

The College has no jurisdiction over off-campus housing but attempts to assist students in locating housing.

Food Service

Food services, offered through Marriott Corporation to students at Mesa State College, include a choice of two meal plans: Plan A, unlimited meals between 7:00 a.m. and 6:30 p.m., or Plan B, unlimited meals between 10:30 a.m. and 6:30 p.m. Multiple entrees are served with unlimited seconds. Only two meals are served on Saturday and Sunday (brunch and dinner) Both meal plans have full access to brunch and dinner 11:00 a.m. to 1:00 p.m. and 5:00 p.m. to 6:30 p.m. Meals are planned with special needs in mind also, such as for the weight conscious or vegetarian.

Students living in the residence halls may select the meal plan of their choice but are required to choose one. Students not living in the residence halls may, if they wish, purchase meal plans and/or munch money (prepaid coupon books with savings on snacks and various meals on campus). Meals are served seven days a week during

the academic year but are not served during Thanksgiving, Christmas and spring break when classes are not in session.

Call (303) 248-1742 for more information on dining services at Mesa State College.

Payment of Room and Board

Room and board are contracted on a yearly basis and are payable each semester at the time of billing. Registration is not complete until the student's obligation is met in full. The total charge for one year is divided into 60% fall term and 40% spring term. If a student plans to attend Mesa State College only one semester, he or she may contract for one semester only. The charge for a one-semester contract will be 60% of the total charge for the year. Room and board rates for the 1994-95 academic year had not been determined when this catalog was printed. **The following schedule reflects estimated rates for 1994-95.**

	First Semester	Second Semester	Total Year
Apartments:			
Single room (per student)	$1,482	$ 990	$2,472*
Double room (per student)	$1,182	$ 792	$1,974*
Residence Halls:			
Double room (per student)	$1,026	$ 684	$1,710*
Single room (per student)	$1,326	$ 888	$2,214*

Board:
(Available to all students; mandatory for those living in a residence hall)

	Per Semester	Total
Plan A—unlimited, 6:45 a.m.-6:45 p.m.	$ 968	$1,936
Plan B—unlimited, 10:30 a.m.-6:45 p.m.	$ 921	$1,842

*A $30 per semester/per person charge will be added for phone service for the residence halls; a $20 per semester/per person charge will be added for phone service for the apartments. A $15 charge per semester will be added to all residents' accounts for housing activity fee. The phone and activity fees are NON-REFUNDABLE.

Room Refunds

The schedule for room refunds is outlined in the Housing Contract.

Board Refunds

Departing students are charged thirty (30) percent of the cost of the total meal plan plus meals through the week in which formal check-out occurs. Students leaving the last four weeks of the semester are charged the full semester rate for meals.

Other Fees and Expenses

Books and Supplies

Required text books and supplies are sold at the College Bookstore, located in the W. W. Campbell Center. Other items sold at the bookstore include general books, art and engineering supplies, basic school supplies, calculators, imprinted and non-imprinted clothing, magazines, non-prescription medicine, and gift items.

The approximate cost of textbooks for a single semester is $260 to $280 but varies with the program of study. Supply costs vary depending upon student preference and course requirements.

Textbooks may be returned during the first four weeks of the fall semester and the first three weeks of spring semester, provided the cash register receipt is shown as proof of purchase and the books have not been defaced.

The bookstore sponsors a book buy-back program which is conducted during the final examination week of fall and spring semesters only. Used books may be available for some classes and are sold on a first-come, first-served basis.

The College bookstore hours are:

Monday, Tuesday and Thursday	7:45 a.m. to 4:30 p.m.
Wednesday	7:45 a.m. to 6:30 p.m.
Friday	7:45 a.m. to 4:00 p.m.
Saturday and Sunday	Closed

Private and Special Instructional Fees

When certain private and special instructional services are required, additional charges will be incurred by the student. Fees vary with the nature of the instruction. Private instruction in applied music is available from instructors approved by the College. Cost of this instruction is $140 per semester for one lesson each week and is offered through Continuing Education. Other special instructional services available to students for extra fees may include lab and transportation fees, human performance and wellness classes with locker and towel facilities and classes such as bowling, skiing and golf.

Application and Evaluation Fees

Application and Evaluation Fee (non-refundable)	$ 20.00

Valid only for the semester for which the student makes application.

Add/Drop Fees . . . . . $ 5.00 per add or drop

Students processing schedule changes after classes begin will be charged a $5 add/drop fee for each add or drop transaction processed.

Miscellaneous Fees

Graduation (diploma, application processing)	$ 20.00
Non-refundable housing application fee	$ 25.00
Room damage deposit	$125.00
Parking permit (per year)	$ 18.00
Student health insurance per semester (subject to change)	$183.00
I.D. card fee	$ 15.00

Student Health Insurance

Student health insurance (major medical) is available each semester. Students must complete an enrollment form and submit it with payment to the Accounting Office by the established deadline each semester. Additional coverage is available for spouse and children.

FINANCIAL AID

Financial aid at Mesa State College consists of a balanced program of scholarships and grants-in-aid awarded for outstanding academic achievement or outstanding performance in special skill areas including vocational skills, athletics, drama, music, etc. Mesa State College also participates in federal and state programs of grants, loans, and student employment, the awarding of which is based primarily on need as determined by a needs analysis system approved by the federal government. The application used to determine need is the Free Application for Federal Student Aid.

Financial aid awards that are based on the needs analysis system consider family resources as the primary source of funding for education, with federal and state sources considered secondary and supplemental. Because prospective students always apply for more financial aid than there is money available, the following priority order is used:

1. As stated in federal law, a parent is primarily responsible for payment of educational expenses of a child. Thus, parents of students attending college are expected to make every effort to assist the student financially.
2. The student, as the benefactor of the educational experience, is the next most responsible person for payment of educational expenses.
3. The third level of responsibility is from outside sources such as communities, clubs, corporations, etc.
4. The last resort is federal and state financial aid programs. There has never been enough funding to assist all needy students. Therefore, students should make every effort to obtain assistance at one of the three levels listed above.

Accurate and timely information from the student and parents to the Financial Aid office is the responsibility of the student. Failure on the part of the student to supply all required information on the application may result in reduction or total loss of aid.

Colorado Student-Aid Programs

(Available to full-time, half-time and part-time students. Part-time students will be considered for assistance if funds are available and only for the amount of tuition and fees.)

1. *Colorado Grants*—Grants, usually amounting to $1,000, are awarded to Colorado resident students on the basis of documented financial need. Financial aid packages which include Colorado Grants may not exceed the documented financial need of the student.
2. *Colorado Scholarships*—These scholarships represent an effort by the state of Colorado to recognize Colorado resident students for outstanding achievement in academic and talent areas. The awards shall not exceed tuition and fees. Need is not a factor in determining recipients. However, students who receive Colorado Scholarships will be encouraged to submit a financial aid application.
3. *Colorado Work-Study*—The Work-Study program is designed to provide employment, both on and off campus, for students with documented need and who meet the residency requirement for tuition purposes.
4. *Colorado Student Incentive Grant (CSIG)*—This is a program wherein half of the grant to a student is provided by the state of Colorado and the other half by the federal government. Awards are made only to Colorado resident students with extreme need, and the average CSIG awarded is $1000.
5. *Diversity Grant*—Mesa State College will consider a student for this grant if the student meets at least one of the following five criteria: first generation student, handicapped student, ethnic minority student, dependent student from low income family, or single parent. The recipients must be Colorado residents, accepted for enrollment under a degree-seeking program, and be enrolled full-time. A cumulative G.P.A. of 2.00 or better is required. Financial need is also used as a consideration. Awards will vary according to need and criteria met.

Mesa State College Foundation Programs

The Mesa State College Foundation is a non-profit organization comprised of prominent citizens of the area who wish to aid deserving students at Mesa State College. This group, which functions independently of the College, conducts an annual drive to raise funds for scholarships and student loans. The organization also serves as a receiving and clearing agency for many established scholarships and for those received from clubs and organizations. All scholarships are designed to apply toward tuition and fees.

1. *Community Clubs and Organizations Scholarships*---In addition to the institutional scholarships described above, many scholarships and awards have been established for students of the College by individuals and organizations in the Grand Junction area. The amounts of these awards vary but all are designed to be applied toward tuition and fees.
2. *Student Loans*---Mesa State College provides emergency short-term loan funds from which students may borrow to help meet temporary financial obligations. By definition, short-term loans are repayable within 90 days or by the end of the semester, whichever comes first. Inquire at the Financial Aid Office for applications and additional information.

Non-Resident Scholarship

In an effort to encourage outstanding students from states other than Colorado to attend Mesa State College, a non-resident scholarship equal to one-half the non-resident tuition may be available to students who have achieved a cumulative minimum grade point average of at least 2.80 and an additional $250 per semester if the minimum grade point average is 3.00 or higher. Students will be required to live in Mesa State College housing in order to qualify for one of these grants unless permission is granted to live off campus by the Housing Director.

The grade point average achieved while in high school will be used to determine eligibility if the applicant is a first time college student. If the applicant is a transfer student, the cumulative grade point average of all college hours completed will be used to determine eligibility.

Federal Student-Aid Programs

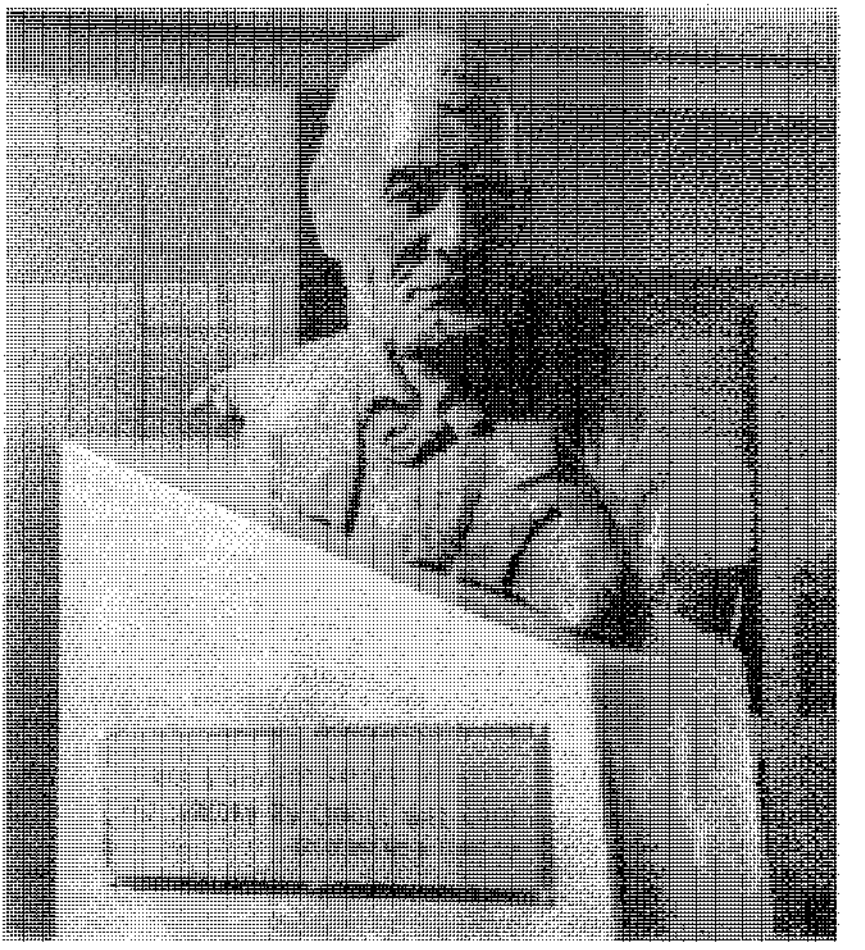
1. *Federal Pell Grant Program*—This is a grant program available to needy students enrolling in an eligible institution of post-secondary education. Application forms are available from high schools or the financial aid office at any eligible post-secondary institution. The student applies through an approved needs analysis agency as described before and upon receipt of a Student Aid Report (SAR) from that center, submits it to the financial aid officer of the college of the student's choice for the grant determination. Full-time and half-time students enrolling in an institution of postsecondary education who are high school graduates or equivalent are eligible to apply. The Pell Grant Program is the base program for financial aid at Mesa State College.
2. *College Based Programs*---Mesa State College participates in many other federal student-aid programs. These include the: (1) Federal Perkins Loan Program, (2) Federal Supplemental Educational Opportunity Grant Program, (3) Federal College Work Study Program, (4) Federal Family Educational Loan Program (formerly the Guaranteed Student Loan Program) consisting of the Federal Stafford Student Loan Program, the Unsubsidized Federal Stafford Student Loan Program, and the Federal Parent Loan for Undergraduate Students (PLUS). Details concerning these programs may be obtained from the Financial Aid office.

General Guidelines

Financial need for educational expenses is an essential requirement to qualify for assistance from most programs. Students who must have financial aid in order to secure a college education are encouraged to contact the Financial Aid Office of the College for necessary information and application forms. Both full-time and less than full-time students will receive consideration.

Since financial need is the primary requirement for determining eligibility for assistance under any of the federal student aid programs, Mesa State College requires that the student applicant **submit the proper application to the federal processor as soon as possible after January 1.** This form should be available at either the high school principal's or counselor's office, or may be obtained by writing the Office of Financial Aid at Mesa State College.

Stafford Student Loans are obtained in the same manner as other campus based aid and require a separate application which is available from participating banks, savings and loan associations, credit unions, and the Office of Financial Aid.



STUDENT SERVICES

Mesa State College has an environment that encourages and allows students to develop socially as well as educationally. Learning is not confined to the classroom and the library. Student Services provides quality opportunities for students to increase skills and competencies in academic and vocational areas as well as areas related to developing and improving self-understanding, interpersonal relations, realistic decision-making, value clarification abilities, and the establishment of life goals.

Orientation

New students to Mesa State may participate in one of the college orientation programs offered on several dates throughout the year. The program is organized by upperclass Mesa State students who will introduce new students to the campus, fellow classmates, and the College's programs and facilities. Students attending an orientation program are permitted to register for classes during their orientation. Parents of graduating high school students are encouraged to attend the orientation program. Upon acceptance to Mesa State College, students will receive further details of the orientation being held for them. For more information contact the Admission Office.

Academic Advising

The Academic Advising Center is a newly opened facility at Mesa State College. Staffed primarily with student advisers, the Center's purpose is to assist new freshmen, returning and transfer students plan their class schedules and register for classes. Also, students unsure of the major they want to pursue (undeclared majors) will be assisted in the exploration of possible choices.

The Academic Advising Center is located in Albers Hall and is open on Mondays and Fridays from 8:00 a.m.-4:00 p.m. and on Tuesdays, Wednesdays, and Thursdays from 8:00 a.m.-7:30 p.m. Phone (303) 248-1177 or (303) 248-1926 for an appointment.

Faculty advisers are assigned to students on the basis of their program interest. Students who know what major they wish to pursue are assigned a faculty adviser as soon as they come to Mesa State. Students who have not yet decided on a major are advised by the Academic Advising Center. Once students choose a major, they are assigned a faculty adviser. Faculty advisers provide each student advisee with a program sheet which details requirements of the degree or certificate program the student is working towards. The student should work closely with the faculty adviser throughout enrollment at Mesa State, keeping the program sheet up to date as the student progresses toward graduation.

For pre-college advising, contact Kim Crosby, Assistant Director of Admission, at (303) 248-1943.

Adult Re-entry Program

This program, coordinated by the Office of Continuing Education, provides adults a one-stop center for coordinating all the necessary steps to enroll at Mesa State College including academic advising, financial aid, and course registration. For more information, contact the Office of Continuing Education at (303) 248-1847.

John U. Tomlinson Library

The John U. Tomlinson Library supports the educational mission of the College by providing a diverse collection of materials for use by the students and faculty.

Housed in a new building, the library collection contains over 195,000 volumes which includes books, periodicals, nonprint materials, maps, newspapers, audio and video cassettes, slides, records, CD ROM discs, films, software and other items. The

library is a partial depository for federal government documents and also contains special collections which include the College archives, manuscripts and papers, and book collections in the areas of George Armstrong Custer, theatre, Western Colorado history and other subjects.

Services provided by the library include reference and information desk assistance, quiet group study rooms, photocopy and microform machines, and bibliographic instruction to classes. The Media Center provides a production TV studio, instruction materials consultation, equipment distribution, and media production services to students and faculty. Assisted computer search services are also available.

Access to the collection is through the MARMOT on-line catalog which is composed of the holdings of the Tomlinson Library, and includes holdings in other libraries throughout Colorado and the United States. Should materials not be available locally, the Interlibrary Loan Department obtains needed materials for students and faculty from other libraries.

Tutorial and Learning Center

The Tutorial and Learning Center provides free peer tutorial service for students needing extra help in a class that is difficult for them. The goal of the Center is to help students improve their grades and to learn skills for high academic achievement.

Qualified tutors are recommended by faculty and are available at conveniently scheduled times at the Center in Houston Hall 110. Also, one-hour study skills workshops and seminars are offered the first month of each semester.

College Reading and Study Skills (DEVL 090) is a three-credit hour course offered through the Center that teaches students college level academic skills, such as effective note taking, test taking, time management, and reading efficiency. (See "Developmental Studies")

All students are encouraged to visit the Tutorial and Learning Center in order to become familiar with the services offered there. Numerous free pamphlets and handouts are available on topics important to student success, such as effective test taking, reducing math anxiety, and effective study techniques.

Physical or Learning Disabled

Mesa State College provides free support services for students with documented physical or learning disabilities. Services available, depending upon individual needs, include volunteer note takers, content tutoring, monitored testing and taped textbooks (eight weeks notice required). Prospective students are encouraged to contact the Coordinator of the Physically or Learning Disabled office to discuss special needs. The office, located in Houston Hall, Room 110, is closed from mid-June to mid-August.

Writing Center

Students can improve their writing skills through one-on-one assistance from the staff of the Writing Center located in Lowell Heiny Hall (248-1832).

Student Life Center

The Student Life Center staff is available to provide counseling and referral services to students seeking personal, career or substance abuse counseling and resources (248-1366).

1. *Counseling.* Psychological counseling services and academic supportive counseling is available to all students. Assessment and referral to the PsycHealth Center is provided for those students requiring more extensive counseling.
2. *Career/Placement.* Career development services are provided for those students needing assistance in choosing a career. Various career inventories are used to help the student assess his/her job-related strengths. Skill development work-

shops are available to help students wanting assistance with resume writing, interviewing and job application procedures. A job placement file service is available for graduates. Listings for part-time job employment, summer employment and full-time employment are available for all enrolled students seeking employment.

3. *Alcohol/Drug Education (AWARE Program).* Counseling services, in partnership with PsycHealth Center, provides alcohol and drug education presentations for staff, faculty and students. The AWARE program staff is available to make presentations to student groups, classes, and faculty or departments, on topics related to substance abuse.

Mesa State College Day Care Center

Day care is available for children of Mesa State College students on a limited basis. A minimum fee is charged by the hour or by the day for children two to five years of age. For further information, contact the Mesa State College Day Care Director at (303) 248-1318.

Student Activities

To broaden students' educational experience and to enrich the campus environment, the College offers a wide variety of student activities available for student involvement.

Over fifty student organizations exist at Mesa State College. The student activities brochure, available at the Admission Office, contains a detailed listing of student organizations at Mesa State.

Student organizations include professional and academic clubs (i.e., accounting club, math club, geology club, Phi Beta Lambda) which allow students to explore their interests beyond the classroom as well as to interact with their professors and other professionals in their fields of interests.

There are over twenty special interest student organizations at Mesa State, including sports clubs (such as soccer, karate, and rodeo), support groups, and religious organizations which allow students to meet other students who share similar interests.

A number of funded campus organizations are administered by Mesa State students including the following:

Student Body Association (SBA)—SBA is the representative body and official voice of the students. The SBA operates through the General Assembly, a legislative body composed of students elected by the student body and club-appointed representatives. Students involved in SBA have an opportunity to gain leadership skills by representing student opinion and organizing student services such as funding clubs, printing the student handbook, and assisting in student orientation programs.

Mesa State Activities Council (MSAC)—MSAC is responsible for organizing entertainment activities including concerts, films, speakers and dances. Past events have included musician Robert Palmer, comedians Dennis Miller and Judy Tenuta, jazz artists Spyro Gyra, and speakers such as Joe Clark, the principal featured in the film, *Lean on Me*.

Fine Arts Organizations—All Mesa State College students are encouraged to audition to join a musical group, participate in theatre or be a part of a dance performance. Performances in the arts are highly regarded at Mesa State and are well-attended by students and the community.

Media Organizations—These organizations include the student newspaper, The *Criterion*, the student radio station, KMSA 91.3 FM, and the literary and art publication, *Literary Review* and *The Journal of the Western Slope*. Each of these groups is professionally advised by campus faculty members and utilizes the latest equipment employed in their fields.

Outdoor Program—This student group organizes trips and classes including white-

water rafting, rock climbing, and skiing. The rental center, located in the College Center, rents mountain bikes, canoes, kayaks, cross-country skis, backpacks and other gear.

Cultural Awareness Board—This student organization offers leadership experiences for students and organizes programs to educate students regarding multi-cultural concerns and issues.

Intramural-Recreation Services

The Intramural-Recreational Sports program at Mesa State College offers the student a variety of organized activities ranging from competitive and non-competitive team and individual sports (including basketball, softball, racquetball and volleyball) to group and individual fitness activities (including aerobics and fitness program design). In addition, non-organized recreational activities, such as swimming and weight lifting are provided. Many other activities are offered and students are encouraged to suggest new activities.

Participation in the program is a key to positive growth experiences at Mesa State College and to acquiring skills and knowledge that will be of value throughout life. In addition to opportunities for physical activity and fitness, other benefits include social interaction with friends and fellow students of both sexes as well as work-study job opportunities for those with experience in recreation. All students who are currently enrolled in credit courses at Mesa State College are eligible for all activities within the Intramural-Recreational Sports program.

A yearly calendar of intramural and recreational sports activities is available at the Intramural Office located in the lower-level of Saunders Fieldhouse (248-1592).

Student Health Center

Good health, both physical and emotional, is an important factor in successful college work. It is the intent of the College Health Service to provide competent medical care. Similar to the family doctor, the College Health Service provides a source of medical assistance for the student who is away from home.

Out-patient health services are provided for all students who have a valid student I.D. card regardless of number of credit hours carried or insurance status. Primarily, these services are limited to: first aid; dispensing simple medicines; recommending proprietary drugs; making referrals to physicians and dentists; providing counsel for personal health problems; and doing limited lab tests for a minimal fee.

Services include a full-time registered nurse and a medical doctor on a four-hour daily schedule during class days. The medical doctor provides students with an initial health assessment and evaluation, treats minor illnesses or conditions, and refers students for hospitalization and special treatment as needed. Health Services are contracted with an off-campus medical provider and are located within walking distance of the campus.

For illnesses or accidents which occur after hours or on weekends, students should report for emergency treatment at an area hospital. In extreme emergencies, help should be obtained by dialing 911.

The College Center

Located in the main artery of the campus, the W. W. Campbell College Center, recently remodeled, features over two million dollars in facility improvements and serves as a meeting place for students, faculty, and staff members.

The College Center houses the bookstore, copy center, art gallery, outdoor program, student government offices, radio station, school paper, gameroom, snack bar, information desk, dining hall, student lounges, and meeting rooms. The gameroom includes pool tables and video games. Liff Auditorium is the center of many of the entertainment programs organized weekly by the student-run Activities Council.

Student organizations may arrange for the use of the College Center meeting room facilities through the College Center Scheduling Office.

Campus Parking

Students and College staff members who wish to park on campus may purchase parking permits for designated areas. A parking sticker does not guarantee a parking space, but permits on-campus parking when such space is available.

GENERAL ACADEMIC REGULATIONS

System of Grades

Grades at Mesa State College are indicated as follows: A, excellent to superior; B, good to excellent; C, satisfactory; D, passing but not satisfactory; F, failed; I, incomplete; WP, withdrawn, passing; WF, withdrawn, failing; NC, no credit; IP, in progress.

Academic Standards

The scholastic standing of a student at Mesa State College is computed on the basis of all courses attempted (unless Academic Renewal has been approved—see "Admission Information"). This includes only those grades earned at Mesa State College. Grades awarded from any other institution will not be utilized in the grade point average calculation. A student must achieve a cumulative grade-point average of 2.00 (C) or higher, to graduate at the certificate, associate or baccalaureate level.

Mesa State College uses the four point system in computing the grade-point average (GPA) of its students. Under this system, a student receives four quality points for each semester hour of A; three points for each semester hour of B; two points for each semester hour of C; one point for each semester hour of D; and no quality points for an F or WF. An example follows:

3 Semester Hours of.....A	=	12 points
3 Semester Hours of.....B	=	9 points
3 Semester Hours of.....C	=	6 points
3 Semester Hours of.....D	=	3 points
3 Semester Hours of.....WF or F	=	0 points
15 Semester Hours		30 points

30 points divided by 15 semester hours = 2.00 GPA

Minimum GPA

Students are considered to be making "satisfactory progress" toward a degree if they attain a cumulative GPA consistent with the table listed below. Incomplete ("I") and In Progress ("IP") grades are tentative grades and until changed are not considered in computing either the cumulative grade-point average or the grade-point average for the particular semester concerned. **"WF" hours count in the same way as "F" hours. "WP" hours do not count as hours attempted or in the GPA.**

Credit Hours	Cumulative GPA
0 - 15	1.70
16 - 30	1.80
31 - 45	1.90
46 and above	2.00

Students failing to achieve the minimum GPAs listed above will be placed on academic probation. The student will remain on probation until the minimum GPA is achieved, providing the student earns a minimum semester GPA of 2.00. If a student already on academic probation fails to earn a semester GPA of 2.00, the student will be placed on academic suspension. The student will be prohibited from further attendance at Mesa State College for a minimum of one semester; i.e., those suspended following fall semester may not attend Mesa State College until the subsequent fall; those suspended following spring semester will not be allowed to attend Mesa State College until the subsequent spring. (See "Academic Probation and Suspension")

Grade Improvement

Any course which is taken more than once for academic credit at Mesa State College is done so only for "grade improvement" (i.e., academic credit is awarded only once and the last grade received is that used to compute the student's cumulative grade point average and to fulfill requirements for the degree). The only exceptions to this policy are MUSL (music lessons) and MUSP (performing music) classes, each of which may be taken twice for academic credit; Independent Studies (a maximum of six credit hours may be taken for credit—see "Independent Study" in the "Program" section of this catalog); and in some cases Topics, Practicums, Seminars, Internships, and Cooperative Education (see program sheets and the appropriate dean for these exceptions).

The option of repeating a course for grade improvement is available to a student only if the course he or she wishes to repeat is still offered at Mesa State and is scheduled to be offered in the semester in which the student wishes to take it. If a student wishes to repeat a course for grade improvement, a "Grade Improvement" form must be filed with the Director of Academic Records after repeating the class. The last grade earned will be the grade used (whether better or worse than the original).

Courses taken at Mesa State College may not be repeated at another college for improvement of the original grade and courses taken at another college may not be repeated at Mesa State College for improvement of the original grade.

Incomplete and In-Progress Grades

Incomplete ("I") and In Progress ("IP") grades are temporary grades given to a student *only in an emergency case* and at the discretion of the instructor.

At the end of the semester following the one in which an "I" is given, the "I" becomes the grade that is submitted by the instructor to the Records Office. If the instructor does not submit a grade by the deadline for that semester, the grade becomes an "F." An "I" grade given spring semester becomes a permanent grade at the end of the following fall term.

At the end of two semesters following the one in which the "IP" grade is given, the "IP" becomes the grade that is submitted by the instructor to the Records office. If the instructor does not submit a grade by the deadline for that semester, the grade becomes an "F". An "IP" grade given spring semester becomes a permanent grade at the end of the following spring semester.

Extension of the time to complete work may be made in exceptional circumstances at the discretion of the instructor. A student with an "I" or "IP" grade, however, *may not* change the "I" or "IP" by enrolling in the same course another semester.

Honor Lists

The President's List is made up of those students who earn a GPA of 4.00 while enrolled in a minimum of 12 semester hours for a particular fall or spring semester.

The Dean's List includes students who achieve a grade point average of between 3.50 and 3.99 while enrolled in a minimum of 12 semester hours fall or spring semester.

The lists are based on semester grades, not cumulative grade point averages. Regardless of grade point average, a student who receives a failing grade (WF or F) in any course is not eligible for the Dean's List.

Honor Societies

Membership in **Alpha Chi** is the highest academic honor which Mesa State College can bestow upon its scholars. To be eligible for election, students must have completed at least 75 semester hours toward the baccalaureate degree with a GPA of 3.75 or better and be fully recognized by their faculty and deans as having the qualities of character pertaining to the true scholar. Alpha Chi is the sec-

ond oldest and second largest of those national scholastic honoraries which elect from all fields.

Alpha Phi Sigma is an honor organization with the declared objective of promoting a greater fraternal relationship among students and professionals in Administration of Justice program. The local chapter, Lambda Alpha Epsilon, broadens this objective by promoting a better understanding by the public of the aims and ideals of the Mesa State College Administration of Justice program and encouraging interest and personal involvement in the activities afforded by Mesa State College and the surrounding area. Students must have a cumulative minimum GPA of 3.00 and a 3.20 in the Administration of Justice or Criminology concentrations.

The National Honor Society in Biology at Mesa State College is **Beta Beta Beta.** For full membership in Beta Beta Beta, a biology major must have completed at least three classes in biology and have a minimum GPA of 3.00. With these qualifications, a student may be nominated to membership.

Kappa Mu Epsilon is an honor society for students of mathematics. Its chapters are located in colleges and universities of recognized standing which offer a strong mathematics major. The nominated and inducted members are selected from students of mathematics and other closely related fields who have maintained high standards of scholarship, have professional merit, and have attained academic distinction. The local chapter, Colorado Delta, is a working organization throughout the academic year. It functions as an integral part of the Computer Science, Mathematics, and Engineering Department of Mesa State College.

Nu Kappa Chapter, Sigma Theta Tau International, recognizes achievement in nursing. The purposes of the society are to recognize superior achievement and leadership qualities, foster high professional standards, encourage creative work and strengthen commitment to the ideals and purposes of the profession. Students must have a minimum GPA of 3.00 and rank in the upper 35 percent of their class to be eligible for membership. Nurses from the community may also be nominated for membership if they have demonstrated marked achievement in nursing education, practice, research or publication.

Phi Alpha Theta is the International Honor Society in History. The objective of this professional honor society is the promotion of the study of history through the encouragement of research, good teaching, publication, and the exchange of learning and thought among historians. To be eligible for membership, a student must have completed twelve or more hours of history with a minimum GPA in history of 3.10 and a minimum overall GPA of 3.00. The Mesa State Phi Alpha Theta Chapter is a co-sponsor of the *Journal of the Western Slope*.

Psi Chi, the National Honor Society in Psychology, is open for membership to the undergraduate student who meets certain minimum qualifications and for whom the study of psychology is a major interest. The purpose of Psi Chi is to promote and maintain excellence in scholarship in the field of psychology and to advance the science of psychology.

Sigma Gamma Epsilon, a National Honor Society for the Earth Sciences, has for its objectives the scholastic and scientific advancement of its members and the extension of friendship and assistance among colleges, universities, and scientific schools for the advancement of the Earth Sciences. Membership in Zeta Nu Chapter of Sigma Gamma Epsilon is open to continuing Earth Science majors with at least twelve credit hours of Earth Science coursework completed with a minimum GPA of 3.00. Qualified students are reviewed and may be nominated each semester.

The National Honor Society in Physics is **Sigma Pi Sigma.** For membership in Sigma Pi Sigma, a physics major or other student who has completed at least three classes in physics must maintain an overall GPA of 3.00 and a 3.25 GPA in physics. A qualifying student may then he nominated for membership by the combined physics faculty.

Sigma Tau Delta, the National English Honor Society, endeavors to encourage, promote, and recognize scholarship and achievement in English language and literature. Membership is open to sophomore, junior, and senior English majors with a minimum GPA of 3.00 in English.

Graduation with Honors

To graduate with Honors or Distinction, a student must be awarded credit hours from Mesa State College that amount to at least 51 percent of the credits used for meeting degree requirements. Only Mesa State College credits will be used for calculation of the grade point average used in the recognition of honors. Each year during formal commencement ceremonies Mesa State College recognizes the following categories of academic achievement:

With Distinction—Associate degree graduates with cumulative grade point averages of 3.50 to 3.74.

With High Distinction—Associate degree graduates with cumulative grade point averages of 3.75 to 4.00.

Cum Laude—Baccalaureate degree graduates with cumulative grade point averages of 3.50 to 3.74.

Magna Cum Laude—Baccalaureate degree graduates with cumulative grade point averages of 3.75 to 3.89.

Summa Cum Laude—Baccalaureate degree graduates with cumulative grade point averages of 3.90 to 4.00.

Registration Procedure

Once admitted to Mesa State College, a student will meet with a registration adviser (see Academic Advising section). Not all courses available in this catalog are offered every semester or every year. Schedules of course offerings for the upcoming semester are available in the Records Office, along with step-by-step registration procedures.

Each student must obtain, from his or her faculty adviser or from the Dean of the School, a program sheet detailing requirements of the program of study the student is beginning. The program sheet is used throughout the student's enrollment by the faculty adviser and student to track the student's progress towards the degree or certificate the student is pursuing. The student is responsible for fulfilling all requirements of the program sought.

Schedule Adjustments—Add/Drops

Students may make adjustments to their schedules according to specified deadlines and procedures as announced in each semester's published course schedule. Students dropping all of their courses should refer to the "Withdrawal" section of this catalog.

Student Load and Limitations

The normal student load is 15 semester hours (some disciplines require a higher number). The minimum load required for a student to be recognized as a full-time student is 12 semester hours. If students register for fewer than 12 semester hours, they are classified as part-time students.

Students receiving scholarships and/or financial aid are generally expected to complete 12 hours of credit courses each semester. In order to receive full Veteran's Administration financial benefits, veterans must be enrolled in 12 or more semester hours each semester of attendance.

It is recommended that students limit their academic load to 21 semester hours or less. Students should consult with their advisers before attempting an overload of more than 21 semester hours in a regular semester or more than 16 semester hours in

summer term. A surcharge, equal to the appropriate credit hour rate per semester, will be assessed for each credit hour over 21.

Grade Reports

Individual grade reports are mailed to the permanent home address of every student at the end of each semester. Special reports may be obtained at any time upon application by the student to the Records Office. An official grade report is withheld, however, until all fees owed the College are paid.

Evaluation

The evaluation of student learning progress in a course is considered to be a planned and continuous process and consists of a variety of activities including judgment, observation, testing, etc. Final examinations are a part of the evaluation process.

Article 13 of House Bill 1187, enacted in July of 1985 by the Colorado General Assembly, established that institutions of higher education in Colorado are to be held accountable for demonstrable improvements in student knowledge, capacities, and skills between entrance and graduation.

Students are required by Mesa State College to take part in testing and other programs deemed necessary for compliance with this legislation. Students who do not abide by these requirements may be denied registration and/or graduation privileges. Portions of the assessment process may require time outside the normal class periods.

Attendance

Students are expected to attend all sessions of each course in which they are enrolled. Failure to do so may result in a lowered grade or exclusion from class at the discretion of the instructor. At any time during a semester, a student who fails to attend regularly may be dropped from class rolls.

Attendance during the first two class periods is required. Any instructor has the option of dis-enrolling from class any student who fails to attend the first two class meetings so that other students may enroll. Not all instructors will exercise this option; therefore, a student should not assume that non-attendance will result in automatic dis-enrollment from a class.

It is the responsibility of the student to arrange in advance with the instructors for the making up of missed classwork, assignments or tests incurred because of a student's participation in required field trips, intercollegiate sports, or other trips. The coach, instructor, or other official whose activities require students to be absent from classes should give each participating student an "official" roster and schedule of events for the semester or other appropriate time span which may result in classes being missed. The student is responsible for contacting the instructor of each of his/her classes affected, at least 24 hours in advance of each class that will be missed.

Absences due to serious illness or strictly unavoidable circumstances may be excused if the instructor in charge of the course is satisfied as to the cause. In the case of an emergency, the student may contact the Office of the Vice President for Student Affairs and that Office will contact the student's instructors to let them know of the emergency.

Being excused for an absence in no way relieves the student of responsibility for completing all work associated with the course to the satisfaction of the instructor in charge.

Being late to a class or leaving a class early is disruptive and is not acceptable except in extreme circumstances or with prior approval of the instructor. Prior approval is also required of the instructor if a student wishes to bring a guest (or a child) to class.

Late Registration

Late registering students must check with the Accounting Office for their Statement of Account before registration is considered to be complete. Late fees will be charged on the same schedule as for all other students.

Students who register late (after classes begin) must complete all work missed. Students who register after the first week of classes are advised to enroll for less than a normal 15 semester-hour load.

Student Conduct

Mesa State College is a community consisting of students, faculty, support staff, and administrators. The College does not attempt to define all "student conduct." It relies on students to assume the responsibility and obligation of conducting themselves in a manner compatible with the purpose of the College as an educational institution and the community as a place of residence. In addition to College rules and regulations, all students are subject to the same local, state, and federal laws as non-students and are beneficiaries of the same safeguards of rights as non-students.

The academic community has a long and cherished tradition of expecting its members to conduct themselves in accordance with the highest standards of personal behavior. The following are among those acts of misconduct which are not consistent with the educational goals of Mesa State College or with the traditions of the academic community.

1. Academic dishonesty, such as cheating, plagiarism, or knowingly furnishing false information to the College.
2. Forgery, alteration, misuse or mutilation of College documents, records, identification materials, or educational materials.
3. Obstruction or disruption of teaching, research, administrative, or public service functions of the College.
4. Intentional interference with an individual's rights to free speech, freedom to make academic inquiry, or freedom of conscience.
5. Aiding, abetting or inciting others to commit any act of misconduct set forth in 1 through 4 above.

Penalties for acts of misconduct including, but not limited to, those set forth above can range from official warning to expulsion from College, depending upon the seriousness of the misconduct. Detailed disciplinary procedures are available from the Office of the Vice President of Student Affairs.

Withdrawal Procedures

Withdrawal from One or More Classes

Withdrawal from classes (full semester duration, modular, and summer) is permitted up to the mid-point of those classes. Proper forms and signatures are required and must be submitted to the Office of the Director of Academic Records. Forms are available at the Office of the Director of Academic Records or the Deans' Offices. Students who officially withdraw from class(es) by the deadline receive a "WP" grade (withdrawn, passing) or a "WF" (withdrawn, failing).

In addition to regular withdrawal from class(es) by the student, an instructor may initiate a withdrawal from his or her class for failure to attend class, failure to turn in assignments over an extended period of time, or for disciplinary reasons. In such cases, the instructor must observe regular withdrawal deadlines.

Withdrawal from the College

Students who desire to withdraw totally from Mesa State College should notify their faculty advisers and report to the Office of the Director of Academic Records. (See refund policy.) **The necessary withdrawal papers must be filled out by the**

student and officially signed by the appropriate staff from the Director of Academic Records. Such withdrawal may be made up to the mid-point of the term of classes being taken. Grades of "W" will be given **if all withdrawal procedures have been satisfied for courses in which the student has not already received a grade (including WF).** Exceptions to the withdrawal deadline are possible only at the discretion of the instructor, Dean, and Director of Academic Records. Requests of students who must withdraw after the mid-point of the term due to emergency situations beyond their control will be considered individually and will receive "WP" or "WF" (withdrawn passing, withdrawn failing) grades as determined by the instructor.

Academic Probation and Suspension

"Good Standing" signifies that the student is making satisfactory academic progress (see "Academic Standards") and is eligible to continue studies at Mesa State College.

"Academic Probation" indicates a student is not in good standing and constitutes a warning to the student that the student's scholastic achievement needs improvement or suspension will result. Students will be placed on academic probation if their cumulative grade point averages fall below the minimums listed under "Academic Standards" in this catalog.

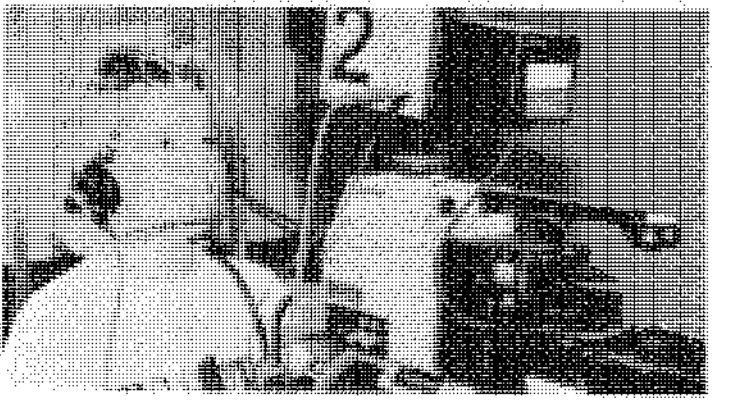
Upon being placed on academic probation, students are permitted to continue studies for one term, during which time they are expected to improve their cumulative grade point averages to the minimum required levels. Those who succeed will be removed from academic probation.

Students on academic probation will remain on academic probation until they raise their cumulative grade point averages to the required level. Once on probation, a student must maintain a minimum semester grade point average of 2.00 to avoid being placed on academic suspension.

"Academic Suspension" indicates the student is not in good standing and represents a temporary, involuntary separation of the student from the College for a minimum of one semester for failure to meet minimum academic standards.

Following an Academic Suspension, a student must apply for readmission to Mesa State College. For degree programs that do not have separate admission policies, the readmission to Mesa State College is also readmission to the degree program. For degree programs having admission policies over and above admission to Mesa State College, the student must also reapply to the degree program.

A student may be suspended and readmitted to Mesa State College a maximum of two times. The first suspension shall be for a period of one semester (fall or spring). The second suspension shall be for a period of two semesters (fall and spring, or spring and fall). Students may not enroll in any **credit** classes whatsoever (including Continuing Education and summer term) during the period of suspension.



GRADUATION REQUIREMENTS

Students are expected to assume responsibility for planning their academic programs in accordance with College and department policy. **Each student is responsible for obtaining a program sheet, available from the appropriate School, at the beginning of his or her work detailing the exact requirements for the degree or certificate being pursued.** Students are urged to consult with their academic advisers. The College assumes no responsibility for difficulties arising when a student fails to establish and maintain contact with his or her faculty adviser and department chairperson.

THE STUDENT IS ULTIMATELY AND SOLELY RESPONSIBLE FOR KNOWING THE REQUIREMENTS FOR A PARTICULAR DEGREE AND FOR FULFILLING THOSE REQUIREMENTS.

Requirements for All Degrees

Some requirements may vary with the program and School. Each student must abide by the rules set forth in the program sheet which may be obtained from the School offering the degree he or she is seeking. Candidates for all degrees must accomplish or be governed by, as appropriate, the following:

Petition

A completed petition to graduate and the program sheet with appropriate signatures must be filed with the Director of Academic Records before the beginning of the semester in which final requirements are to be met.

Deficiencies

All academic and financial deficiencies must be removed (i.e., incomplete grades and/or unpaid financial obligations).

Transferring in Final Credit Requirements from Another College

Mesa State College generally accepts academic credits from regionally accredited colleges and universities. When a student intends to earn a Mesa State College degree and the final credits for completing that degree program are earned at another institution, the following restrictions apply:

1. No more than 15 semester hours of credit will be accepted in transfer.
2. Credit must be earned in no more than one calendar year immediately following final enrollment at Mesa State College.
3. Specific approval of the proposed institution and courses must be given by the appropriate Dean and the Director of Academic Records at Mesa State College during the time of the student's last enrollment at Mesa State College, and the student must receive grades of "C" or better in each course.

English Requirement

Mesa State College requires that English Composition (ENGL 111 and ENGL 112) or approved substitutes be completed successfully before a student can exceed sixty accumulated credit hours. The courses must be taken in sequence, and students are encouraged to take them in consecutive semesters. Students are generally expected to take these courses as freshmen. Students who are completing 60 hours of course work will not be permitted to enroll in *any* additional courses until they have passed ENGL 112 (or its approved substitutes). Exceptions to the policy for a student will require the written permission of the Department Chairperson.

Human Performance and Wellness

Classes with "HPWL" prefix are human performance and wellness activity classes. Each course is scheduled for an eight-week module and includes lectures on the his-

tory, rules, techniques and strategies of the activity and participation in the activity. Students are examined both on knowledge of the activity and proficiency in the activity. Prerequisites for all "Intermediate" or Part II classes: the corresponding beginning course or consent of instructor.

1. To graduate with a baccalaureate degree, a student must earn three semester credit hours in Human Performance and Wellness. Each student must take HPWA 100 together with two activity courses: one course from the list entitled "Aerobic/Fitness Activity" and one additional course either from the list entitled "Aerobic/Fitness Activity" or "Lifetime Activity."

   To graduate with an associate degree, a student must earn two semester credit hours in Human Performance and Wellness. Each student must take HPWA 100 together with one activity course from the list entitled "Aerobic/Fitness Activity."

   The only exception to taking HPWA 100 will be for those who request and pass a proficiency test at least at the 75 percent level. Contact the Department Chair for additional information.
2. Only one HPWE class may be taken for credit during any given module. Any additional HPWE classes in that module must be taken for "no credit."
3. A course may be taken for credit only once, except for "grade improvement."
4. No more than a total of eight HPWE classes of any kind may be taken for credit. Any HPWE classes taken beyond the eight for which credit is received must be taken for no credit. There is no limit to the number of HPWE classes a student may take for "no credit."
5. HPWE classes may not be used to satisfy elective course requirements for any degree program.

See the next pages for the lists of courses from which to choose for the HPWE Aerobic/Fitness Activity courses and the HPWE Lifetime Activity courses.

Varsity Athletics

HPWE 180-189 designates the first year of varsity athletics; 280-289, the second; 380-389, the third; and 480-489, the fourth. These courses must be taken in sequence. In addition to the rules above for all HPWE courses, the following apply:

Only one varsity sport activity course, numbered HPWE 180-189, may be used to meet the baccalaureate HPWE Aerobic/Fitness activity requirement.

A student may elect to register for a particular varsity sports class for credit as many as four times (once at each level).

Varsity sports activity credit at the 300 and 400 level may not be counted towards the 40 credit hour upper division requirement for graduation unless they are a required part of a degree program.

HPWE Aerobic/Fitness Activity Courses

HPWE 101 Beginning Swimming
HPWE 102 Intermediate Swimming
HPWE 104 Water Polo
HPWE 105 Water Aerobics
HPWE 112 Hiking
HPWE 121 Beginning Tennis HPWE 122 Intermediate Tennis
HPWE 123 Racquetball HPWE 124 Intermediate Racquetball
HPWE 125 Handball
HPWE 126 Fitness Walking
HPWE 127 Physical Conditioning
HPWE 128 Intermediate Weight Training
HPWE 129 Weight Training
HPWE 130 Fitness HPWE 131 Low-Impact Aerobics

HPWE 132 High-Impact Aerobics HPWE 133 Skiing
HPWE 135 Cross-Country Skiing
HPWE 139 Roller Skating
HPWE 141 Bicycling
HPWE 145 Wrestling
HPWE 147 Track and Field
HPWE 156 Soccer
HPWE 158 Speedball
HPWE 160 Field Hockey
HPWE 164 Beginning Basketball
HPWE 165 Intermediate Basketball
HPWE 166 Flag Football
HPWE 175 Modern Jazz Dance I
HPWE 178 Tap Dance
HPWE 179 Dance Performance Group
HPWE 180 Varsity Football
HPWE 181 Varsity Basketball
HPWE 182 Varsity Baseball
HPWE 183 Varsity Wrestling
HPWE 184 Varsity Tennis
HPWE 185 Varsity Volleyball
HPWE 186 Varsity Softball
HPWE 189 Varsity Cross Country

HPWE Lifetime Activity Courses

HPWE 103 Diving
HPWE 106 Scuba I
HPWE 107 Scuba II
HPWE 108 Canoeing
HPWE 110 River Rafting
HPWE 113 Beginning Bowling
HPWE 114 Intermediate Bowling
HPWE 115 Beginning Golf
HPWE 116 Intermediate Golf
HPWE 117 Badminton
HPWE 119 Archery
HPWE 137 Horseback Riding
HPWE 143 Orienteering
HPWE 149 Gymnastics
HPWE 152 Softball
HPWE 154 Beginning Baseball
HPWE 155 Intermediate Baseball
HPWE 162 Volleyball
HPWE 163 Intermediate Volleyball
HPWE 168 Hatha Yoga & Relaxation I
HPWE 169 Hatha Yoga & Relaxation II
HPWE 170 Beginning Modern Dance
HPWE 172 Square Dance
HPWE 173 Folk Dance
HPWE 174 Social Dance
HPWE 176 Beginning Ballet

Preparatory Courses

Preparatory courses are available in several subjects at Mesa State. Numbers of such courses are below the 100 level (e.g., DEVL 090). These courses are designed

for students needing to strengthen their backgrounds before entering college level classes, and are not intended for transfer purposes. They will not usually fulfill degree requirements. Students are urged to consult their advisers about the need to register in these classes.

Students who have passed any ENGL class numbered 100 or above will not be permitted to register *for credit* in any ENGL class numbered below 100.

Students who have passed any MATH class numbered 100 or above will not be permitted to register *for credit* in any MATH class numbered below 100.

Catalog under which Student Graduates

Anyone admitted to a baccalaureate major at Mesa State College after fall semester of 1992 must choose a program listed in the 1993-94 or a subsequent catalog. Because of a change in baccalaureate degree structure, the degrees offered in previous years will no longer be available to new students or continuing students changing majors. A student currently declared in and working on a baccalaureate degree offered prior to 1993-94 may complete that degree provided he or she remains "continuously enrolled" (excepting summer session) until graduation and completes all requirements for graduation by May of 1999. A student shall be considered to be "continuously enrolled" if he or she does not have an interruption in enrollment of more than one contiguous semester (excluding summers).

The requirements for graduation with an associate degree or certificate are those stated in the Mesa State College catalog which is in effect at the time the student first registers at a Colorado public institution of higher education. This is true provided (1) a student remains continuously enrolled (as defined above) until graduation, and (2) the associate degree, emphasis or certificate area is still accepting students into the program.

If an interruption in enrollment occurs so that the student is no longer "continuously enrolled" as described above, all requirements applicable at the time of re-enrollment shall apply and the student will be governed by the then current catalog. If any requirements change while a student is enrolled, the student may elect to meet the new requirements. However, the old and the new requirements cannot be combined; one complete set or the other must be elected.

If a candidate for a degree is unable to meet requirements because of an event such as the removal of a required course from the offerings of the College or some other unforeseen academic change, it shall be the candidate's responsibility to arrange an exception or understanding approved by the Director of Academic Records and the appropriate dean.

Calculation of Grade Point Average for Graduation

Only the grades and credits awarded at Mesa State College will be used in calculating the student's grade point average for graduation. Grades awarded from any other institution will not be utilized in the grade point average calculation.

Baccalaureate Degree Requirements

Mesa State College offers baccalaureate degrees in the traditional liberal arts and sciences disciplines, professional fields of study, and interdisciplinary fields. Candidates for baccalaureate degrees must accomplish or be governed by, as appropriate, the following:

Credit Hour Requirements

A minimum of 123 semester credit hours is required in every baccalaureate degree program. The distribution of the 123 minimum credit hour requirement is:

General Education	33 credit hours
Degree Distinction	6 credit hours
Human Performance and Wellness	3 credit hours
Major Requirements	36-60 credit hours*
Unrestricted Electives	21-45 credit hours

*Some professional programs may exceed 60 hours.

Students need to work closely with their faculty advisers and obtain a program sheet from that faculty adviser or the dean **at the time they begin their baccalaureate degree program at Mesa State College.** The student is ultimately and solely responsible for knowing the requirements for a particular degree and for fulfilling those requirements.

The program sheet lists all requirements for the degree program for the catalog under which the student is working. It is to be kept up-to-date by the student and adviser as the student progresses in meeting requirements.

At least 40 semester hours must be earned in courses numbered 300 or higher. A cumulative grade point average of 2.00 or higher for all courses taken and for the courses which comprise the area of the major field of study must be achieved. Each student who receives a baccalaureate degree from Mesa State College must have at least one college mathematics course on his or her transcript. Some baccalaureate degree programs have additional GPA and other requirements. See a faculty adviser for a program sheet listing specific requirements for the degree and major sought.

Degree Distinctions

The six semester credit hour degree distinction for the B.A. and the B.S./B.B.A. degrees MUST be outside the general education requirements.

Bachelor of Arts Distinction. Candidates for the B.A. degree shall complete at least six semester hours of *one* modern foreign language which may include:

FLAF 111, FLAF 112
FLAG 111, FLAG 112
FLAS 111, FLAS 112
FLAS 117, FLAS 118
(FLAS 114 AND 115 will *not* fulfill this requirement)

Students may **not** satisfy this requirement by taking two beginning level courses in the same language (e.g., FLAS 111 and FLAS 117).

The department may approve courses in other modern languages than those listed. Students must complete the courses with a grade of "C" or higher. At the discretion of the foreign language faculty, the requirement may be satisfied by demonstration of equivalent competency. Students who have completed four semesters of a single high school language with a grade of "C" or higher may have their language requirement waived by the Dean of the School of Humanities and Social Sciences.

Bachelor of Science/Bachelor of Business Administration Distinction. Candidates for the B.S. and B.B.A. degrees shall complete at least six semester hours of the following: a combination of any computer science (CSCI) courses, any statistics (STAT) courses, and/or any college mathematics (MATH) courses at or above the college algebra (MATH 113) level. Students must complete the courses with a grade of "C" or better. At the discretion of the mathematics and computer science faculty, the requirement may be satisfied by a demonstration of equivalent competency. Each student who receives a B.S. or B.B.A. degree from Mesa State College will have at least one mathematics course at or above the MATH 113 level on his or her transcript.

Selected Studies. Candidates for a B.A. in Selected Studies degree must choose either the B.A. distinction or the B.S./B.B.A. distinction consistent with their primary area of study and in consultation with their advisers.

The above requirements are separate from and in addition to the General Education

CMC Math 135 (Intro to Stat) will not fulfill requirement for B.S. Distinction 11/10/94

requirements (i.e., the same course cannot be used for general education, degree distinction and/or major requirements.)

Major

The specific discipline area program requirements must be completed as required by the appropriate academic school with a grade point average of 2.00 or higher.

Residency

A minimum of 28 semester hours credit must be earned in no fewer than two semesters of study at Mesa State College with at least 15 semester hours in major discipline courses numbered 300 or higher taken at Mesa State College.

General Education

Each student must complete the 33 semester credit hour general education requirement as specified by the Mesa State College faculty. See the following for specific course requirements and choices.

Any college-wide general education course required in a student's major will be replaced with a general education course from some other discipline. The same course may not be counted to satisfy both requirements. Students may select their general education courses from the designated list according to their own preference. The following are guidelines for General Education:

1. The English composition requirement must be satisfied by the time a student has completed 60 credit hours of course work.
2. Those students who qualify may substitute Honors English (ENGL 129) for ENGL 111 and ENGL 112. When Honors English is substituted for the ENGL 111 and ENGL 112, only ten General Education courses would be required (30 credit hours).
3. The math competency is required of B.A. students only. It may be satisfied by completing any college mathematics course at or above the MATH 110 level with a grade of "C" or higher. Students may challenge MATH 110 for the purpose of proving competency. Also, students will be deemed mathematically competent if they receive at least a "4" on the Advanced Placement examination in calculus given by the College Entrance Examination Board.
4. Each student who receives a baccalaureate degree from Mesa State College must have at least one college level mathematics course on his or her transcript.
5. A student may satisfy a General Education requirement with an appropriate CLEP test, if a CLEP is available for the course and the department at Mesa State approves.
6. No General Education course, except sequential courses, can have a specific course as a prerequisite or co-requisite, unless the prerequisite or co-requisite is in a different discipline.

General Education Requirements for Baccalaureate Students

English	6 semester hours
Mathematics	3 semester hours (for B.A. students—B.S., and B.B.A. students, see "Degree Distinction")
Humanities	6 semester hours chosen from history, literature, philosophy
Social and Behavioral Science	6 semesters hours chosen from anthropology, economics geography, political science, sociology, psychology

NOTE: B.S. and B.B.A. students must choose three additional semester hours from either the Humanities or the Social/Behavioral Sciences.

Fine Arts	3 semester hours chosen from art, dance, music, theatre
Natural Sciences	6 semester hours chosen from biology, chemistry, geology, physics. (At least one of the two courses must have an associated lab or field component and both the lecture and laboratory must be taken in all courses listed which have both if general education credit is to be received.)
Applied Studies	3 semester hours chosen from foreign language, computer science, business, applied fine arts, speech, occupational courses.

Minimum number of general education credit hours: 33 (except when Honors English is taken)

Courses Approved for General Education Baccalaureate General Education Requirements

English

ENGL 111	English Composition *and*
ENGL 112	English Composition
	or
ENGL 129	Honors English

Mathematics

MATH 110*	College Mathematics

*NOTE: This requirement is for B.A. students only. All B.A. students must complete MATH 110 or a higher level math class with a grade of "C" or better. Students may challenge MATH 110 for the purpose of proving competency. Also, students will be deemed mathematically competent if they receive at least a "4" on the Advanced Placement examination in calculus given by the College Entrance Examination Board. Each student who receives a baccalaureate degree from Mesa State College will have at least one college level mathematics course on his or her transcript (for B.S./B.B.A. degrees, see Degree Distinction).

Humanities

ENGL 131, 132, 133	Survey of Western World Literature I, II, and III
ENGL 150	Introduction to Literature
ENGL 222	Mythology (Classical)
ENGL 242	Introduction to Poetry
ENGL 254, 255	Survey of English Literature I and II
ENGL 261, 262	Survey of American Literature I and II
HIST 101, 102	Western Civilization
HIST 131, 132	United States History
PHIL 110	Introduction to Philosophy

Social and Behavioral Sciences

ANTH 201	Cultural Anthropology
ANTH 222	World Prehistory
ECON 201	Principles of Macroeconomics
ECON 202	Principles of Microeconomics

GEOG 103	World Regional Geography
POLS 101	American Government
POLS 261	Comparative Politics
PSYC 121	General Psychology
PSYC 233	Human Growth and Development
SOCO 144	Marriage and the Family
SOCO 260	General Sociology
SOCO 264	Social Problems

Fine Arts

ARTE 101	Two-Dimensional Design
ARTE 102	Three-Dimensional Design
ARTE 115	Art Appreciation
ARTE 211	Art History: Ancient-1300
ARTE 212	Art History: Europe 1300-1900
FINE 101	Man Creates
MUSA 110	Standard Notation
MUSA 220	Music Appreciation
MUSA 266	History of Popular Music
MUSP 101, 201	Music Performance Experience
THEA 117, 118 217, 218	Play Production
THEA 119, 120 219, 220	Technical Performance
THEA 141	Theatre Appreciation
THEA 145	Introduction to Dramatic Literature
THEA 241	Oral Interpretation

Natural Sciences

BIOL 101, 101L	General Biology and Laboratory
BIOL 102, 102L	General Biology and Laboratory
BIOL 105, 105L	Attributes of Living Systems and Laboratory
CHEM 100	Chemistry and Society
CHEM 121, 121L	Principles of Chemistry and Laboratory
CHEM 122, 122L	Principles of Organic Chemistry and Laboratory
CHEM 131, 131L	General Chemistry and Laboratory
CHEM 132, 132L	General Chemistry and Laboratory
ENGS 101	Introduction to Environmental Science
GEOL 100	Survey of Earth Science
GEOL 103	Weather and Climate
GEOL 105	Geology of Colorado
GEOL 111, 111L	Principles of Physical Geology and Laboratory
GEOL 112, 112L	Principles of Historical Geology and Laboratory
GEOL 203	Introduction to Environmental Geology

PHYS 100	Concepts of Physics
PHYS 101	Elementary Astronomy
PHYS 111, 111L	General Physics and Laboratory
PHYS 112, 112L	General Physics and Laboratory
PHYS 121	Classical Physics I
PHYS 122, 122L	Classical Physics II and Experimental Mechanics Laboratory

Applied Studies

ACCT 201	Principles of Accounting I
BUGB 101	Introduction to Business
BUGB 231	Survey of Business Law
BUGB 249	Personal Finance
CISB 101	Business Data Processing
CISB 105	Introduction to Business Software
CSCI 100	Computers in Our Society
CSCI 120	Technical Software
ELCT 232, 232L	Personal Computers I and Laboratory
ENGR 105, 105L	Basic Engineering Drawing and Laboratory
ENGR 149	Introduction to Space Flight
ENGS 110	Environmental Restoration Survey
FLAF 111, 112	First-Year French I, II
FLAG 111, 112	First-Year German I, II
FLAS 111, 112	First-Year Spanish I, II
FLAS 117, 118	Career Spanish I, II
HPWA 265	Standard First Aid/CPR
INSA 100	Machine Shop Studies
INSA 102	Machine Theory
INSA 110, 110L	Basic Electronics and Laboratory
INST 220	Industrial Safety Practices
MAMT 160, 160L	Properties of Materials and Laboratory
MAMT 165	Manufacturing Processes
MATH 121	Mathematical Foundations of Business
MATH 127	Mathematics of Finance
MECD 115, 115L	Heavy Equipment Maintenance and Laboratory
MECH 105, 105L	Introduction to Shop Practices and Diagnostic Equipment
MUSL 130-238	Applied Music Lessons
MUSA 130	Class Piano I
MUSA 131	Class Piano II
MUSA 137	Class Voice I
MUSA 138	Class Voice II
MUSA 236	Electronic Instrument Technique and Materials

OPAD 151	Keyboarding
SPCH 101	Interpersonal Communication
SPCH 102	Speechmaking
SPCH 112	Voice and Diction
STAT 214	Business Statistics
PHIL 275	Introduction to Logic
WELD 117, 117L	Oxy-Fuel Welding and Cutting I and Laboratory
WELD 118, 118L	Oxy-Fuel Welding and Cutting II and Laboratory
WELD 151, 151L	Industrial Welding and Laboratory

In addition, the Human Performance and Wellness requirement must be met—see "Human Performance and Wellness" under this "Graduation Requirements" section.

Vocational Credits

Vocational credits are defined by each school and may count in varying amounts toward B.A., B.B.A., and B.S. degrees. Appropriate deans should be consulted.

Second Baccalaureate Degrees and Concentrations Within One Degree

Mesa State College offers 20 baccalaureate degrees, with one additional baccalaureate degree pending approval. Students who meet the requirements may earn any one or more of these baccalaureate degrees. (See "Second Baccalaureate Degree" below.)

Under several of the 21 baccalaureate degrees, concentrations and options are available. Before graduating with a baccalaureate degree offering concentrations and options, a student may complete requirements for one or several of the concentrations and options as desired. However, after a degree has been granted, if courses are taken that would have satisfied requirements for an additional concentration or option, the additional concentration or option cannot be added to the degree already granted. The course work will, of course, show on the student's transcript. (See "Double Concentration within a Degree" below.)

Second Baccalaureate Degree

A student seeking a second baccalaureate degree at Mesa State College must earn a minimum of 30 additional semester hours of credit, at least 18 of which must be in courses numbered 300 and higher (none of these 30 credits may have been used toward another baccalaureate degree, and all must be earned at Mesa State College). In addition, the student must satisfy all specific program requirements of the new degree and concentration as well as any graduation requirements not previously met (e.g., the degree distinction).

Double Concentration Within a Degree

Students wishing to receive a *double concentration or option* within one *degree* must satisfy all the requirements for each concentration or option. Only one degree will be awarded. All concentrations and options desired must be declared on the petition to graduate.

Requirements for all Associate Degree Programs Associate of Arts (A.A.), Associate of Science (A.S.), Associate of Applied Science (A.A.S.)

Credit

A *minimum* of 60 semester credit hours in approved course work plus HPWA 100 and one HPWE class from the Aerobic/Fitness list must be earned. No more than 2 semester credit hours of Human Performance and Wellness activity classes may be counted toward an associate degree. A cumulative grade point average of 2.00 or higher for all courses taken and for the courses which comprise the area of emphasis or specialization must be achieved. Some programs have additional GPA requirements.

Residency

A minimum of 16 semester hours credit must be earned in no fewer than two semesters of study at Mesa State College.

Vocational Credits

Usually, no more than six semester hours of vocational credits may be applied toward non-vocational (Associate of Arts and Associate of Science) degrees.

Double Emphasis Within a Degree

Students wishing to receive a double *emphasis* within one *degree* must satisfy all the requirements for each emphasis. Only one degree will be awarded. All emphases desired must be declared on the petition to graduate.

Second Associate Degree

A minimum of 15 semester hours of credit beyond that required for the first associate degree must be earned by a student seeking a second associate degree at Mesa State College. A minimum of one semester of residency at Mesa State College is also necessary. In addition, the student must satisfy all specific requirements for the new degree. **Only one A.A. and only one A.S. degree may be granted to any student, according to state guidelines.**

Associate of Arts (A.A.) and Associate of Science (A.S.), General Degree Requirements

A.A. and A.S. degree programs are designed to prepare students for upper division collegiate work (junior level) in colleges and universities granting the Bachelor of Arts (B.A.) or Bachelor of Science (B.S.) degree. All A.A. and A.S. degree programs include the Colorado Core Transfer Consortium Program which is the state-wide common core of general education curriculum and will thus meet the lower-division general education requirements of most baccalaureate degree programs in Colorado. A grade of "C" or better is required in **EACH** core course in order to be accepted for transfer under the Core Transfer agreements. Course work for the A.A. or A.S. degree, then, includes:

1. General Education Core Transfer Curriculum
2. Discipline area classes (emphasis), as detailed in the "Program of Study" section of this catalog or as developed in consultation with a faculty adviser and indicated on the program sheet.
3. Human Performance and Wellness requirement
4. Electives

The A.A. degree is designed for transfer into a baccalaureate degree program, with junior standing, in the arts, humanities, social or behavioral sciences, or one of the professional fields with such disciplines as its base. The A.S. degree is designed for transfer into a baccalaureate degree program, with junior standing, in one of the mathematical, biological, or physical sciences, or in one of the professional fields with such disciplines as its base.

Students should consult with their faculty advisers to assure that the emphasis and electives chosen will satisfy requirements of the particular baccalaureate programs to which they plan to transfer. A.A. and A.S. degrees in emphases not described in this catalog may be developed in consultation with the faculty adviser. An A.A. or A.S. degree indicates that the holder has developed proficiencies sufficient to prepare for upper-division collegiate work and is awarded only for completion of a coherent program of study designed for a specific purpose.

Once a student has decided upon a program of study, he or she needs to obtain a program sheet from the faculty adviser. All degree requirements, as agreed upon, will be included on the program sheet.

ASSOCIATE OF ARTS GENERAL EDUCATION CORE TRANSFER CURRICULUM REQUIREMENTS

(A minimum of 34 semester credits to be selected only from the following courses:)

		Course Credits	Group Credits
a) 9 semester hours in English and Speech:			**9**
English			
ENGL 111, 112	English Composition	3,3	
Speech			
SPCH 102	Speechmaking	3	
b) 7-10 semester hours in Mathematics (minimum of 3 semester hours) and Science (minimum of 4 semester hours) chosen from the following:			
Mathematics/Statistics			**3**
Math			
MATH 113	College Algebra Calculus for Arts	4	
MATH 121	~~Mathematical Foundations of Business~~	3	
MATH 146	Calculus for Biological Sciences	5	
MATH 151	Calculus I	5	
MATH 152	Calculus II	5	
Statistics			
STAT 200	Probability and Statistics	3	
4/17/95 STAT 214	Business Statistics	3	
SCIENCE			**4**
Biology			
BIOL 101, 101L	General Biology and Laboratory	2,1	
BIOL 102, 102L	General Biology and Laboratory	2,1	
Both the lecture and laboratory must be taken in all courses having both, as listed above, if general education credit is to be received.			
Chemistry			
CHEM 121, 121L	Introductory Inorganic Chemistry and Laboratory	4,1	
CHEM 122, 122L	Introduction to Organic Chemistry and Laboratory	4,1	

CHEM 131, 131L	General Chemistry and Laboratory	4,1
CHEM 132, 132L	General Chemistry and Laboratory	4,1

Both the lecture and laboratory must be taken in all courses having both, as listed above, if general education credit is to be received

Geology		
GEOL 111, 111L	Principles of Physical Geology and Laboratory	3,1
GEOL 112, 112L	Principles of Historical Geology and Laboratory	3,1

Both the lecture and laboratory must be taken in all courses having both, as listed above, if general education credit is to be received.

Physics Phys 100	Concepts of Physics	3
PHYS 101	Elementary Astronomy	3
PHYS 111, 111L	General Physics and Laboratory	4,1
PHYS 112, 112L	General Physics and Laboratory	4,1
PHYS 121	Classical Physics I	4
PHYS 223, 223L	Classical Physics III and Experimental Electromagnetism Laboratory	3,1

Both the lecture and laboratory must be taken in all courses having both, as listed above, if general education credit is to be received.

Phys 121 & L Classical Phys II & Lab 4,1

c) 9 semester hours of Social and Behavioral Sciences chosen from the following courses. A minimum of two different disciplines required.

SOCIAL AND BEHAVIORAL SCIENCE		**9**
Anthropology	ANTH 201 Cultural Anthropology	3
Economics		
ECON 201	Principles of Macroeconomics	3
ECON 202	Principles of Microeconomics	3
Geography		
GEOG 103	World Regional Geography	3
History		
HIST 101, 102	Western Civilizations	3,3
HIST 131, 132	United States History	3,3
Political Science		
POLS 101	American Government	3
Psychology		
PSYC 121, 122	General Psychology	3
Sociology		
SOCO 260	General Sociology	3
SOCO 264	Social Problems	3

d) 9 semester hours of Humanities chosen from the following courses. A minimum of two different disciplines required.

HUMANITIES		**9**
Art		
ARTE 211	Art History: Ancient-1300	3
ARTE 212	Art History: 1300-1900	3

French		
FLAF 111, 112	First-Year French I and II	3,3
FLAF 251, 252	Second-Year French I and II	3,3
German		
FLAG 111, 112	First-Year German I and II	3,3
FLAG 251, 252	Second-Year German I and II	3,3
Literature		
ENGL 131, and		
132 or 133	World Literature I and II, or III	3,3
ENGL 150	Introduction to Literature	3
Music		
MUSA 220	Music Appreciation	3
Philosophy		
PHIL 275	Introduction to Logic	3
Phil 110	Intro. to Phil.	3
Spanish		
FLAS 111, 112	First-Year Spanish I and II	3,3
FLAS 251, 252	Second-Year Spanish I and II	3,3

In addition, the Human Performance and Wellness requirement must be met—see "Human Performance and Wellness" under this "Graduation Requirements" section.

ASSOCIATE OF SCIENCE GENERAL EDUCATION CORE TRANSFER CURRICULUM REQUIREMENTS

(A minimum of 33 semester credits to be selected only from the following courses:)

		Course Credits	Group Credits
a) **9 semester hours in English and Speech:**			9
English			
ENGL 111, 112	English Composition	3,3	
Speech			
SPCH 102	Speechmaking	3	
b) **A minimum of 12 semester hours in Mathematics (minimum of 4 semester hours) and Science (minimum of 8 semester hours) chosen from the following:**			
Mathematics			4
MATH 113	College Algebra Calculus for Bus.	4	
MATH 121	~~Mathematical Foundations of Business~~	3	
MATH 146	Calculus for Biological Sciences	5	
MATH 151	Calculus I	5	
MATH 152	Calculus II	5	
SCIENCE			8
Biology			
BIOL 101, 101L	General Biology and Laboratory	2,1	
BIOL 102, 102L	General Biology and Laboratory	2,1	

Both the lecture and laboratory must be taken in all courses having both, as listed above, if general education credit is to be received.

Chemistry

CHEM 131, 131L	General Chemistry and Laboratory	4,1
CHEM 132, 132L	General Chemistry and Laboratory	4,1

Both the lecture and laboratory must be taken in all courses having both, as listed above, if general education credit is to be received

Geology

GEOL 111, 111L	Principles of Physical Geology and Laboratory	3,1
GEOL 112, 112L	Principles of Historical Geology and Laboratory	3,1

Both the lecture and laboratory must be taken in all courses having both, as listed above, if general education credit is to be received.

Physics Phys 100	Concepts of Physics	3
PHYS 101	Elementary Astronomy	3
PHYS 111, 111L	General Physics and Laboratory	4,1
PHYS 112, 112L	General Physics and Laboratory	4,1
PHYS 121	Classical Physics I	4
PHYS 223, 223L	Classical Physics III and Experimental Electromagnetism Laboratory	3,1

Both the lecture and laboratory must be taken in all courses having both, as listed above, if general education credit is to be received.

Phys 102 & 102L Classical Phys II & Lab 4,1

c) 6 semester hours of Social and Behavioral Sciences chosen from the following courses. A minimum of two different disciplines required.

SOCIAL AND BEHAVIORAL SCIENCE		**6**
Anthropology		
ANTH 201	Cultural Anthropology	3
Economics		
ECON 201	Principles of Macroeconomics	3
ECON 202	Principles of Microeconomics	3
Geography		
GEOG 103	World Regional Geography	3
History		
HIST 101, 102	Western Civilizations	3,3
HIST 131, 132	United States History	3,3
Political Science		
POLS 101	American Government	3
Psychology		
PSYC 121	General Psychology	3
Sociology		
SOCO 260	General Sociology	3
SOCO 264	Social Problems	3

d) 6 semester hours of Humanities chosen from the following courses. A minimum of two different disciplines required.

HUMANITIES		**6**
Art		
ARTE 211	Art History: Ancient-1300	3
ARTE 212	Art History: 1300-1900	3

French		
FLAF 111, 112	First-Year French I and II	3,3
FLAF 251, 252	Second-Year French I and II	3,3
German		
FLAG 111, 112	First-Year German I and II	3,3
FLAG 251, 252	Second-Year German I and II	3,3
Literature		
ENGL 131 and 132 or 133	World Literature I and II or III	3,3
ENGL 150	Introduction to Literature	3
Music		
MUSA 220	Music Appreciation	3
Philosophy		
PHIL 275	Introduction to Logic	3
Spanish		
FLAS 111, 112	First-Year Spanish I and II	3,3
FLAS 251, 252	Second-Year Spanish I and II	3,3

In addition, the Human Performance and Wellness requirements must be met—see "Human Performance and Wellness" under this "Graduation Requirements" section.

Non-Degree Transfer Programs:

In addition to programs of study leading to the A.A. and A.S. degrees, other one- and two-year programs of study specifically tailored to meet students' needs in transferring to another institution may be developed through consultation with a faculty adviser.

Associate of Applied Science (A.A.S.) Degree Requirements

A.A.S. degree programs are intended to prepare individuals to enter skilled and/or para-professional occupations or to upgrade/stabilize their employment. These programs are not intended for transfer to baccalaureate degree programs; however, certain courses may be accepted toward a baccalaureate degree at some institutions. Under the "Programs of Study" section of this catalog, the A.A.S. degrees available at Mesa State College are listed, along with the courses required to complete each degree.

Students are urged to consult with a faculty adviser and to obtain from the adviser a program sheet for the degree sought. Requirements for each A.A.S. degree will include:

1. General Education: Social and Behavioral Science or Literature—six semester hours

   See the General Education lists in this catalog for baccalaureate degrees, and for the Associate of Arts degree and Associate of Science degree. The six hours required here may be chosen from Social or Behavioral Science or Literature from any of the three lists, unless specified under the degree.
2. English—six semester hours, as set forth in the specific A.A.S. program requirements.
3. Human Performance and Wellness requirement.
4. The remaining requirements and electives found under the specific program in the "Programs of Study" section of this catalog.
5. Additional requirements apply for some degrees. See specific program requirements and the program sheet.
6. The number of courses allowed from vocational education programs vary according to the program chosen.

Certificate of Occupational Proficiency Requirements

Candidates for the Mesa State College Certificate of Occupational Proficiency must satisfy all requirements specified for the certificate with a cumulative grade point average of 2.00 or higher for all courses. A grade lower than "C" in the discipline field will not be counted toward satisfying certificate requirements.

Teacher Certification

Students preparing to teach in the public schools (elementary, secondary, K-12) must confer with the Mesa State College Director of Teacher Education and Certification regarding state certification requirements and with the chair of the appropriate department regarding program requirements for the major. It is imperative that students seeking teacher certification plan their schedules with the advisers mentioned *early* in their academic careers, preferably the first semester of their work at Mesa State College.

Teacher certification is a separate process and must be pursued in addition to a baccalaureate degree. See *Teacher Certification* in the *"Programs of Study"* section of this catalog.

PROGRAMS OF STUDY

Organization of this Section

This section consists of:

1. **General information**
2. **Schools**
   Programs of study are offered by three Schools at Mesa State College. These Schools, along with their personnel and programs of study offered, are described herein.
3. **Degrees and Certificates**
   All degrees and certificates offered by Mesa State College, except those at UTEC) are shown in this portion, with a brief summary of course and other requirements to earn each. (See UTEC section for degrees and certificates offered at the Unified Technical Education Center.)

   This portion of the section is divided into (1) baccalaureate degrees offered and (2) associate degrees and certificates offered. Each of the two portions is alphabetical by degree name.
4. **Teacher Certification**
5. **Electives and/or Minors**

General Information

Program Sheet

A program sheet has been prepared for each degree major, concentration, minor or certificate offered at Mesa State College specifying in detail the exact course requirements for each. Individual schools maintain program sheets for the degrees, minors and certificates offered in their school. Each student is urged to consult his or her adviser to obtain a program sheet for the major chosen (and minor, if applicable), upon enrolling at Mesa State College. It is the student's responsibility to maintain the program sheet(s) demonstrating compliance with the degree and minor requirements. The completed program sheet(s), with appropriate signatures, must accompany the petition to graduate and be filed with the Director of Academic Records in order for a student to be considered for graduation. Refer to the *Graduation Requirements* section of this catalog for further details.

Overload

Occasionally students desire to take more than 21 credit hours during a semester. Students wishing to take such an overload are strongly encouraged to consult with their advisers prior to registration.

Independent Study

Independent study permits the motivated student an opportunity to expand his or her body of knowledge beyond the scope of the standard curriculum. It endeavors to foster qualities of self initiative, organizational skills, self discipline and independent thinking. It is expected that the student will engage in intensive study and research of the topic.

Independent study satisfies neither general education requirements nor specific course requirements. ***Independent study hours may be taken as elective hours only.***

Independent study is available only to students at the junior and senior levels except in certain certificate and AAS programs and only in those disciplines listed in the "Course Descriptions" section of this catalog.

To be eligible for Independent Study, a student must have a minimum of eight semester credit hours in the discipline of the Independent Study area, as well as a mini-

mum GPA of 2.75 within that discipline area. The work is to be completed within one semester from the initiation date and is limited to a total of six or fewer semester credit hours taken at Mesa State College. The Dean of the School issuing credit must approve any exceptions.

A written contract is to be initiated by the student desiring Independent Study and approved by appropriate faculty and chairperson. The contract must include justification, description, monitoring and evaluation procedures.

Further restrictions apply in some disciplines. One example is the requirement that an application for Independent Study be completed in advance—in some cases six weeks prior to the end of the semester preceding the one in which the student wishes to take the Independent Study. Students wishing to take an Independent Study should check with the appropriate instructor and/or dean well in advance.

Special Topics

Topics courses are offered from time to time and contain material of special interest within a specific discipline not considered elsewhere in the curriculum. Prerequisites vary with course material, and enrollment requires consent of the instructor.

Cooperative Education

According to the National Commission for Cooperative Education, "Cooperative Education is a working partnership in which an educational institution joins with an employer in a structured relationship. The basic purpose is that of providing a means whereby a student can combine study at the institution with a work experience which is under the supervision of the employer in order to fulfill the total requirements of a particular educational program."

Cooperative Education is a three-way partnership involving the student, the employer, and the college. There is a great deal of difference between Cooperative Education and simply holding a job. Cooperative Education is based on learning objectives which are related to the student's academic discipline and are established in cooperation with the student, the employer, the faculty adviser, and others at Mesa State College.

Typically, Cooperative Education is open to junior and senior students. Interested students should consult with their faculty adviser and dean. There are limits in the amount of credit which will apply towards a degree. See "Non-Traditional Credits" in this catalog.

Preparatory Courses

Preparatory courses are available in several subjects at Mesa State College. Numbers of such courses are below the 100 level (e.g., DEVL 090, Developmental Reading). These courses are designed for students needing to strengthen their backgrounds before entering college level classes. All courses numbered 001-099 are preparatory in nature, not intended for transfer purposes and will not usually fulfill degree requirements. Students are encouraged to consult with their advisers about the need to register into these classes.

Students who have passed any ENGL class numbered 100 or above will not be permitted to register *for credit* in any ENGL class numbered below 100. Students who have passed any MATH class numbered 100 or above will not be permitted to register *for credit* in any MATH class numbered below 100.

SCHOOL OF HUMANITIES AND SOCIAL SCIENCES

Daniel Arosteguy, Acting Dean

Departments and Faculty

Fine and Performing Art
M. Atkinson, M. Baron, S. Cahill, P. Carmichael, V. Carmichael, D. Cox, W. Cummings, J. Delmore, D. Duff, M. Gerlach (Chair), K. Gustafson, C. Hardy, D. Meyers, L. Mosher, M. Robb, A. Sanders, L. Sanford, P. Schneider, D. White, S. Woodworth, M. Wounded Head

Languages, Literature and Communications
R. Berkey, E. Broughton, M. Djos, B. Evers, J. Gallegos, P. Hills, R. Johnson, S. Matchett, D. Mackendrick, C. Patton, J. Nizałowski, R. Phillis, D. Pilkenton, G. Prettyman, J. Rider (Chair), R. Sowada, M. Spelman, B. Tharaud, G. Weaver, J. Zeigel

Social and Behavioral Sciences
D. Arosteguy, C. Boulanger, C. Buys, L. Chere, J. Curtsinger, M. Das, J. Dorris, K. Ford, T. Graves, R. Hamm, M. Heinrich, E. Herr, W. Meeker, B. Michrina, L. Morton, J. Peer, D. Pitman, P. Reddin, D. Rees, S. Schulte (Chair), G. Starbuck, H. Tiemann, J. Tomlinson

Each student seeking a degree or certificate must obtain a program sheet from his or her faculty adviser or from the Office of the Dean of the School of Humanities and Social Sciences listing specific requirements for the degree or certificate sought. The School of Humanities and Social Sciences offers academic programs leading to the listed baccalaureate (4-year) degrees, and associate (2-year) degrees, with the majors or areas of study indicated.

BACHELOR OF ARTS IN ECONOMICS

Area of Concentration: Applied Economics: Administration

BACHELOR OF ARTS IN ENGLISH

Areas of Concentrations:
Literature
Writing
English with Teaching (Elementary or Secondary)

BACHELOR OF ARTS IN FINE AND PERFORMING ARTS

Areas of Concentrations:
Art
Music
- Commercial
- Performance
- Music with Teaching (K-12)

Music Theatre
Theatre
- Acting (Directing)
- Design/Technical

BACHELOR OF ARTS IN HISTORY

BACHELOR OF ARTS IN LIBERAL ARTS

BACHELOR OF ARTS IN MASS COMMUNICATION

Area of Concentrations: Broadcasting
News/Editorial
Public Relations

BACHELOR OF ARTS IN POLITICAL SCIENCE

Area of Concentration: Administration of Justice

BACHELOR OF ARTS IN PSYCHOLOGY

Area of Concentration: Counseling Psychology

BACHELOR OF ARTS IN SOCIAL SCIENCE

BACHELOR OF ARTS IN SOCIOLOGY

Areas of Concentration: Anthropology
Criminology
Human Services

ASSOCIATE OF APPLIED SCIENCE

Commercial Art

ASSOCIATE OF ARTS

Areas of Emphasis: Art
English
Humanities
Music
Social Science—General
Theatre

For more details, see "Degrees and Certificates" in the following section of this catalog. The baccalaureate degrees are alphabetical by title within the baccalaureate section and the associate degrees and certificates are alphabetical within that section.

SCHOOL OF NATURAL SCIENCES AND MATHEMATICS

Robert Kribel, Dean

Departments and Faculty

Biological Sciences
R. Ballard, B. Bauerle, P. Chowdry (Chair), E. Hurlbut, W. Kelley, G. McCallister, S. Werman

Computer Science, Mathematics and Engineering
C. Bailey, C. Barkley, C. Britton, J. Brock, W. Davenport, A. Ektare, D. Fuquay, D. Hafner, E. Hawkins (Chair), C. Kerns, D. Mottram, T. Mourey, T. Novotny, L. Payne, J. Rybak, L. Tooke, J. Qaddour, Z. Wu

Physical and Environmental Sciences
O. Boge, D. Foutz, G. Gilbert, J. Johnson (Chair), V. Johnson, R. Kribel, L. Madsen, J. Marshall, P. Misra, W. Putnam, J. Roadifer, K. Topper, R. Walker

Each student seeking a degree or certificate must obtain a program sheet from his or her faculty adviser or from the Office of the Dean of the School of Natural Sciences and Mathematics listing specific requirements for the degree sought. In some courses in the School of Natural Sciences and Mathematics, a grade of "D" is unacceptable. The program sheet for each program specifies such requirements and restrictions.

The School of Natural Sciences and Mathematics offers academic programs leading to baccalaureate (4-year) degrees, associate (2-year) degrees, and a certificate of completion with areas of study as indicated below. It should be noted that some of the areas of emphasis listed for study are the first two years of baccalaureate degree studies and require transfer to other institutions for completion.

A student wishing to receive a double concentration or emphasis must satisfy all of the requirements for each concentration or emphasis.

BACHELOR OF SCIENCE IN BIOLOGICAL SCIENCES

Areas of Concentration: Biology
Biology with Teaching

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

BACHELOR OF SCIENCE IN ENVIRONMENTAL RESTORATION AND WASTE MANAGEMENT

BACHELOR OF SCIENCE IN MATHEMATICS

Areas of Concentration: Mathematics with Teaching (Elementary or Secondary)
Statistics

BACHELOR OF SCIENCE IN PHYSICAL SCIENCE

Areas of Concentration:
- Geology
- Geology with Teaching
- Environmental Geology
- Physics
- Physics with Teaching

ASSOCIATE OF SCIENCE

Associate of Science (A.S.) degrees are available in most disciplines in the School of Natural Sciences and Mathematics. Completion of these degrees requires close coordination with an adviser and attention to the general education core curriculum requirements previously described. In most cases the number of hours that are required for completion of the Associate of Science degree will exceed the minimum of 60 semester hours.

Areas of Emphasis:
- Biology
- Chemistry
- Computer Science
- Engineering
- Geology
- Mathematics
- Physics

It is strongly recommended that students planning careers in Forestry, Medical Technology, or Pharmacy complete an associate's degree in one of the areas of emphasis listed above. Two additional years of study must be completed at another university, but the courses from Mesa State College are readily transferable when the applicant holds an Associate of Science degree.

ASSOCIATE OF APPLIED SCIENCE

Environmental Restoration Engineering Technology

CERTIFICATE OF COMPLETION

Engineering Methods

For more details, see "Degrees and Certificates" in the following section of this catalog. The baccalaureate degrees are alphabetical by title within the baccalaureate section and the associate degrees and certificates are alphabetical within that section.

General Information

Pre-Health Science Preparation

Admission to the study of dentistry, medicine, optometry, physical therapy, and veterinary medicine usually requires the completion of a bachelor's degree in an appropriate discipline. Pre-health science is not a major at Mesa State College. Students preparing to enter the fields listed above must declare a major in one of the sciences or another appropriate area. Since admission to the medical, dental and other professional schools is very competitive, students are encouraged to carefully select majors and/or minors which will prepare them for other career alternatives in the event that they are unable to gain admission to the professional school of their choice.

Engineering and Forestry
A student can profitably begin the baccalaureate study of engineering or forestry with two years at Mesa State College. The subsequent transfer to other appropriate state institutions is facilitated by one of the various transfer agreements between Mesa State College and these institutions. Programs should be carefully designed in consultation with an adviser.

Teacher Certification
Certification to teach mathematics or science in the secondary schools and certification to teach in elementary schools is available through Mesa State College. This can be done by earning a baccalaureate degree with an appropriate major or concentration while also earning credit in prescribed professional courses. Interested students should contact the Teacher Education and Certification Department.

Certification to teach mathematics is obtained with a Bachelor of Science in Mathematics with a concentration in teacher certification degree as described in this catalog and the program sheet. Certification to teach science, however, is somewhat complicated by the fact that science is not an academic emphasis in itself. A student wishing such certification should plan to earn a Bachelor of Science in Biological Sciences degree with a concentration in Teacher Certification or a Bachelor of Science in Physical Sciences degree with a concentration in geology or physics with teacher certification as described in the appropriate sections of this catalog. For information about elementary and secondary teacher certification the student should contact the Teacher Education and Certification Department.

Laboratories
Many courses in the School of Natural Sciences and Mathematics include laboratory work. The class and laboratory portions of them are technically treated as different courses with distinctive numbers and individual grades. A student is usually required to be concurrently enrolled in both class and laboratory. Credit toward graduation cannot be earned for a class or laboratory unless credit is earned in both.

SCHOOL OF PROFESSIONAL STUDIES

Kenneth Blair, Dean

Departments and Faculty

Accounting and Information Technology
J. Bell, P. Bertelli, B. Boehler, J. Buckley, T. Capps, M. Green, D. McGinnis, B. McMechen, M. Meyers, D. Rogers (Chair), G. Wilson

Business Administration
K. Blair, E. Boehler (Acting Chair), D. Dickson, J. Knappenberger, E. Mallory, B. Mayer, H. B. McIntire, T. Ralser, M. Slauson, M. Zimmerer

Education and Teacher Certification
V. Beemer (Early Childhood Education), J. Brigham, A. Bullen, N. Smith (Director), K. Tuinstra

Human Performance and Wellness and Recreation
S. Clough, J. Heaps, J. Krauss, G. Leadbetter, D. Peterson, K. Perrin, D. Schakel, T. Swanson, B. Wiehe (Chair), S. Yeager

Nursing
H. Covington, S. Dickson, M. Forrest, J. Goodhart (Acting Chair), P. Feely, C. Hines (Radiologic Technology Director), B. Hoffman, A. Lambeth, K. Reuss, C. Roy (ADN Director), L. Stahl, S. Stanton, M. Turley, E. Williams

Each student seeking a degree or certificate must obtain a program sheet from his or her faculty adviser or from the Office of the Dean of the School of Professional Studies listing specific requirements for the degree or certificate sought.

Nursing and Allied Health

Each program requires a *separate admission application;* deadlines vary according to the degree sought. For more specific information, see the following or contact the Department of Nursing and Allied Health. **Each new applicant must obtain from Nursing and Allied Health written guidelines explaining specific program requirements.** All programs are fully accredited by the appropriate source including the National League for Nursing, and the Committee of Allied Health Education and Accreditation of the American Medical Association.

Students in most programs offered through the Department of Nursing and Allied Health will be required to participate in clinical situations, etc., at hospitals and other facilities in the community as a part of their program of study. It is understood that these experiences are an integral and essential part of the programs and that all students must participate in them as required by their programs of study. Therefore, should a hospital or other facility deny permission to any student to work at or participate in a required experience at such hospital or other facility, that student may not be allowed to continue his or her program of study. It is the student's responsibility to obtain and maintain the permission of the clinical facilities utilized.

The School of Professional Studies offers academic programs leading to the following baccalaureate (4-year) degrees, associate (2-year) degrees, and certificate programs with the majors or areas of study indicated:

BACHELOR OF BUSINESS ADMINISTRATION

Areas of Concentrations:
- Administrative Office Management
- Business Economics
- Business Computer Information Systems
- Finance
- Management
- Marketing
- Human Resources Management

BACHELOR OF ARTS IN HUMAN PERFORMANCE AND WELLNESS*

Areas of Concentration:
- Adapted Physical Education
- Corporate Fitness/Exercise Science
- Human Performance and Wellness with Teaching

*Pending Approval

BACHELOR OF SCIENCE IN ACCOUNTING

BACHELOR OF SCIENCE IN NURSING (BSN)

BACHELOR OF SCIENCE IN PARKS AND RECREATION RESOURCE MANAGEMENT

ASSOCIATE OF APPLIED SCIENCE
- Business Computer Information Systems
- Nursing
- Office Supervision and Management
  - Accounting Technician
  - Administrative Secretary
  - Legal Secretary
  - Medical Secretary
- Radiologic Technology
- Travel, Recreation and Hospitality Management

ASSOCIATE OF ARTS

Areas of Emphasis:
- Business Administration
- Early Childhood Education
- Office Administration

CERTIFICATE OF COMPLETION

*Legal Assistant

*Check with Office of Continuing Education for details.

CERTIFICATE OF OCCUPATIONAL PROFICIENCY

Early Childhood Education

For more details, see "Degrees and Certificates" in the following section of this catalog. The baccalaureate degrees are alphabetical by title within the baccalaureate section and the associate degrees and certificates are alphabetical within that section.

BACCALAUREATE DEGREES OFFERED AT MESA STATE COLLEGE

Baccalaureate degrees offered at Mesa State College are the Bachelor of Arts (B.A.), Bachelor of Business Administration (B.B.A.), Bachelor of Science (B.S.) and Bachelor of Science Nursing (B.S.N.) degrees as listed below. Concentrations and options available within the baccalaureate degrees are indicated under the degrees. **Degrees are in bold print;** concentrations and options are indented and are not in bold print.

Accounting (B.S.)
Biological Sciences (B.S.)
- Biology with Teaching

Business Administration (B.B.A.)
- Administrative Office Management
- Business/Economics
- Business Computer Information Systems
- Finance
- Management
- Marketing
- Human Resource Management

Computer Science (B.S.)
Economics (B.A.)
- Applied Economics: Administration

English (B.A.)
- Literature
- Writing
- English with Teaching

Environmental Restoration and Waste Management (B.S.)
Fine and Performing Arts (B.A.)
- Art
- Music
  - Commercial
  - Performance
  - Music with Teaching
- Music Theatre
- Theatre
  - Acting/Directing
  - Design/Technical

History (B.A.)
Human Performance and Wellness (B.A.) [Pending approval]
- Adapted Physical Education
- Corporate Fitness/Exercise Science
- Human Performance and Wellness with Teaching (K-12)

Liberal Arts (B.A.)
Mass Communications (B.A.)
- Broadcasting
- News/Editorial
- Public Relations

Mathematics (B.S.)
- Mathematics with Teaching (Elementary or Secondary)
- Statistics

Nursing (B.S.N.)
Parks and Recreation Resource Management (B.S.)

Physical Sciences (B.S.)
- Geology
  - Environmental Geology
  - Geology with Teaching
- Physics
  - Physics with Teaching

Political Science (B.A.)
- Administration of Justice

Psychology (B.A.)
- Counseling Psychology

Selected Studies (B.A.)

Social Science (B.A.)

Sociology (B.A.)
- Anthropology
- Criminology
- Human Services

ACCOUNTING

School of Professional Studies

Bachelor of Science

1. Baccalaureate graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

	Cr. Hrs.
a. General Education	33
b. B.S. Distinction (Math/Computer Science)	6
MATH 113 College Algebra or higher level math	
STAT 214 Business Statistics	
c. Human Performance and Wellness	3

2. Requirements specific to this degree
   a. Required courses 72

ACCT 201	Principles of Accounting I	(3)
ACCT 202	Principles of Accounting II	(3)
ACCT 221	Intermediate Accounting I	(4)
ACCT 222	Intermediate Accounting II	(4)
ACCT 331	Cost Accounting I	(3)
ACCT 332	Cost Accounting II	(3)
ACCT 401	Governmental Accounting	(3)
ACCT 402	Advanced Accounting	(3)
ACCT 411	Auditing I	(3)
ACCT 412	Auditing II	(3)
ACCT 441	Income Tax	(5)
ACCT 442	Advanced Tax and Tax Research	(5)
BUGB 351	Business Law I	(3)
BUGB 352	Business Law II	(3)
CISB 101	Business Data Processing	(2)
CISB 105	Introduction to Business Software	(1)
CISB 205	Advanced Business Software	(3)
ECON 201	Principles of Macroeconomics	(3)
ECON 202	Principles of Microeconomics	(3)
FINA 339	Managerial Finance	(3)
MANG 201	Principles of Management	(3)
MANG 491	Business Policies and Management	(3)
MARK 231	Principles of Marketing	(3)

   b. Concentrations
   There are no concentrations currently available under this degree.
   c. See faculty adviser for a program sheet detailing exact and complete requirements for the major.
   d. Electives (unrestricted) 9
   If desired, a student may use electives toward satisfying requirements for a minor.

BIOLOGICAL SCIENCES

School of Natural Science and Mathematics

Bachelor of Science

1. Baccalaureate graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

	Cr. Hrs.
a. General Education	33
b. B.S. Distinction (Math/Statistics/Computer Science)	6
c. Human Performance and Wellness	3

2. Requirements specific to this degree

a. Required courses 39-41

BIOL 105, 105L	Attributes of Living Systems and Lab	(5)
BIOL 106, 106L	Principles of Animal Biology and Lab	(5)
BIOL 107, 107L	Principles of Plant Biology and Lab	(5)
BIOL 301, 301L	Principles of Genetics and Lab	(5)
BIOL 482	Senior Research and	
BIOL 487	Independent Research	(4)
	OR	
BIOL 483	Senior Thesis	(2)
CHEM 121, 121L	General Chemistry (or higher level CHEM)	(5)
CHEM 122, 122L	General Chemistry (or higher level CHEM)	(5)
PHYS 111, 111L	General Physics (or higher PHYS)	(5)

Additional biology courses must be selected from three of the following four areas:

(1) Cell, Developmental, and Molecular 20

BIOL 201, 201L	Developmental Biology and Lab	(5)
BIOL 202, 202L	Cellular Biology and Lab	(4)
BIOL 330, 330L	Biological Chemistry and Lab	(4)
BIOL 343, 343L	Immunology and Lab	(4)
BIOL 425	Molecular Genetics	(3)
BIOL 442	Pharmacology	(3)

(2) Organismal

BIOL 221, 221L	Plant Identification and Lab	(4)
BIOL 231, 231L	Invertebrate Zoology and Lab	(4)
BIOL 250, 250L	General Microbiology and Lab	(5)
BIOL 331, 331L	Insect Biology and Lab	(4)
BIOL 411, 411L	Mammalogy and Lab	(3)
BIOL 412, 412L	Ornithology and Lab	(4)
BIOL 416, 416L	Ethology and Lab	(4)
BIOL 431, 431L	Animal Parasitology and Lab	(4)
BIOL 450, 450L	Mycology and Lab	(4)

(3) Anatomical and Physiological

BIOL 141, 141L	Human Anatomy and Physiology	(5)
BIOL 241	Pathophysiology	(4)
BIOL 341, 341L	General Physiology and Lab	(3)
BIOL 342, 342L	Histology and Lab	(4)
BIOL 421, 421L	Plant Physiology and Lab	(4)
BIOL 423, 423L	Plant Anatomy and Lab	(5)

(4) Ecology, Evolution, and Systematics

BIOL 211, 211L	Ecosystem Biology and Lab	(4)
BIOL 315	Epidemiology	(3)

BIOL 320	Plant Systematics	(3)
BIOL 321, 321L	Taxonomy of Grasses and Lab	(4)
BIOL 403	Evolution	(3)
BIOL 414, 414L	Aquatic Biology and Lab	(4)
BIOL 415	Tropical Ecosystems	(2)

(5) At least fifty percent of the total BIOL credit hours must be at the 300 level or above.

(6) With prior departmental approval, courses such as special topics, senior research, independent research, and/or independent study may be substituted for course work in the four areas listed above or for the thesis requirement. These substitutions cannot exceed six credit hours.

b. Concentrations—see below

c. See faculty adviser for a program sheet detailing exact and complete requirements for the major and concentration chosen.

d. Electives (unrestricted) 22
If desired, a student may use electives towards satisfying requirements for a minor.

3. Special requirements and recommendations
   a. Biological Sciences majors are encouraged to choose a minor from among those offered within the School of Natural Sciences and Mathematics. Minors most closely associated with the Biological Sciences are chemistry, physics, mathematics, statistics, computer sciences, and geology.
   b. At least ten hours of chemistry courses and one physics course must be taken. Students planning to attend professional schools and some graduate schools are advised to take one year of physics and at least two years of chemistry courses. Mathematics, statistics, and/or computer science courses are requirements for the Bachelor of Science Degree Distinction. It is recommended that courses be taken in all these areas. Students planning to complete graduate or professional degrees are strongly encouraged to work closely with their adviser in planning their curriculum.
   c. See faculty adviser for a program sheet detailing exact and complete requirements for the major and concentration chosen.

CONCENTRATION
Bachelor of Science
BIOLOGICAL SCIENCES

Biology with Teaching

Requirements may vary if a concentration is selected. See faculty adviser for a program sheet detailing exact and complete requirements for the major and concentration chosen.

Students seeking a degree in Biology with Teaching should see their faculty advisers in both Biology and Teacher Certification.

BUSINESS ADMINISTRATION

School of Professional Studies

Bachelor of Business Administration

1. Baccalaureate graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

		Cr. Hrs.
a. General Education		33
b. B.B.A. Distinction (Math/Computer Science)		6
MATH 121	Mathematical Foundations of Business	(3)
(or a higher level math as approved by adviser)		
STAT 214	Business Statistics	(3)
c. Human Performance and Wellness		3

2. Requirements specific to this degree 48

a. Required courses		
ACCT 201	Principles of Accounting I	(3)
ACCT 202	Principles of Accounting II	(3)
ACCT 311	Managerial Accounting, or	
ACCT 221	Intermediate Accounting I, or	
ACCT 331	Cost Accounting	3)
BUGB 211	Business Communications	(3)
BUGB 349	Legal Environment of Business	(3)
CISB 101	Business Data Processing	(2)
CISB 105	Introduction to Business Software	(1)
ECON 201	Principles of Macroeconomics	(3)
ECON 202	Principles of Microeconomics	(3)
FINA 339	Managerial Finance	(3)
MANG 201	Principles of Management	(3)
MANG 301	Organizational Behavior	(3)
MANG 302	Problems in Small Business Management	(3)
MANG 331	Quantitative Decision Making	(3)
MANG 471	Production/Operations Management	(3)
MANG 491	Business Policies and Management	(3)
MARK 231	Principles of Marketing	(3)
b. Concentration—see below		22-24
c. Electives (unrestricted)		9-11

If desired, a student may use electives to satisfy requirements for a minor.

CONCENTRATIONS

Bachelor of Business Administration

BUSINESS ADMINISTRATION

Administrative Office Management
Business/Economics
Business Computer Information Systems
Finance
Management
Marketing
Human Resources Management

Requirements may vary with the concentrations selected. See faculty adviser for a program sheet detailing exact and complete requirements for the major and concentration chosen.

COMPUTER SCIENCE

School of Natural Science and Mathematics

Bachelor of Science

1. Baccalaureate graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

		Cr. Hrs.
a. General Education		33
b. B.S. Distinction (Mathematics/Statistics/Computer Science)		10
MATH 151	Calculus I	(5)
MATH 152	Calculus II	(5)
c. Human Performance and Wellness		3

2. Requirements specific to this degree 50-51

a. Required courses

CSCI 111	Computer Science I	(4)
CSCI 112	Computer Science II	(3)
CSCI 241	Computer Architecture I	(3)
CSCI 242	Computer Architecture II	(3)
CSCI 250	Data Structures	(3)
CSCI 321	Assembly Language Programming	(3)
CSCI 330	Programming Languages	(3)
CSCI 470	Operating Systems Design	(3)
MATH 265	Linear Algebra	(3)
MATH 361	Numerical Analysis	(4)
MATH 370	Discrete Mathematics	(3)
STAT 200	Probability and Statistics	(3)

Select one of the following three courses:

CSCI 131, 131L	Fortran Programming and Lab	(4)
CSCI 335	The C Programming Language	(3)
CSCI 350	Software Engineering and Lab	(3)

Select three of the following:

CSCI 373	Computer Software Systems	(3)
CSCI 380	Operations Research	(3)
CSCI 450	Compiler Structure	(3)
CSCI 460	Data Base Design	(3)
CSCI 480	Theory of Algorithms	(3)
CSCI 482	Theory of Computation	(3)
CSCI 484	Computer Networks	(3)
CSCI 486	Artificial Intelligence	(3)

b. Concentrations

There are no concentrations currently available under this degree.

c. See faculty adviser for a program sheet detailing exact and complete requirements for the major.

d. Electives (unrestricted) 31-32

If desired, a student may use 15-24 hours of electives to satisfy requirements for a minor.

ECONOMICS

School of Humanities and Social Sciences

Bachelor of Arts

1. Baccalaureate graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

	Cr. Hrs.
a. General Education	33
b. B.A. Distinction (Foreign Language)	6
c.Human Performance and Wellness	3

2. Requirements specific to this degree
   a. Required courses 48

ECON 201	Principles of Macroeconomics	(3)
ECON 202	Principles of Microeconomics	(3)
ECON 320	History of Economic Ideas	(3)
ECON 342	Intermediate Macroeconomic Theory	(3)
ECON 343	Intermediate Microeconomic Theory	(3)
ECON 496	Topics (Capstone)	(3)
MATH 121	Mathematical Foundations of Business	(3)
STAT 214	Business Statistics	(3)

   12 hours of upper division credits selected from:

ECON 301	Labor-Management Relations	(3)
ECON 310	Money and Banking	(3)
ECON 312	Economic History of the United States	(3)
ECON 401	Economic Organization and Public Policy	(3)
ECON 410	Public Sector Economics	(3)
ECON 420	International Economics	(3)
ECON 496	Topics	(3)

   12 upper division credit hours selected from the following disciplines:

Accounting	Anthropology	Finance
History	Mathematics	Philosophy
PoliticalScience	Psychology	Sociology
Statistics		

   b. Concentrations—see below
   c. See faculty adviser for a program sheet detailing exact and complete requirements for the major.
   d. Electives 33
   If desired, a student may use electives to satisfy requirements for a minor.

CONCENTRATION

Bachelor of Arts

ECONOMICS

Applied Economics: Administration

Requirements may vary if the concentration is selected. See faculty adviser for a program sheet detailing exact and complete requirements for the major and the concentration.

ENGLISH

School of Humanities and Social Sciences

Bachelor of Arts

1. Baccalaureate graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

	Cr. Hrs.
a. General Education	33
b. B.A. Distinction (Foreign Language)	6
c. Human Performance and Wellness	3

2. Requirements specific to this degree
   a. Required courses — 24

ENGL 254	Survey of English Literature	(3)
ENGL 255	Survey of English Literature	(3)
ENGL 261	Survey of American Literature	(3)
ENGL 262	Survey of American Literature	(3)
ENGL 355	Shakespeare I	(3)
ENGL 421	History of Literary Criticism, or	
ENGL 440	History of the English Language. or	
ENGL 451	Structure of the English Language	(3)
ENGL 494	Senior Seminar	(3)

   One upper division course selected from:

ENGL 301	Classical Greek and Latin Literature	(3)
ENGL 311	English Medieval Literature	(3)
ENGL 313	English Renaissance Literature	(3)
ENGL 315	American Romanticism	(3)
ENGL 316	American Realism and Naturalism	(3)
ENGL 335	The Bible as Literature	(3)
ENGL 415	American Folklore	(3)
ENGL 423	Short Story	(3)
ENGL 435	20th Century American Literature	(3)
ENGL 470	18th Century British Literature	(3)
ENGL 471	British Romanticism	(3)
ENGL 475	Victorian Literature	(3)
ENGL 478	20th Century British Literature	(3)

   b. Concentrations—see below (students must choose one) — 18
   c. Electives (unrestricted) 39
   If desired, a student may use electives to satisfy requirements for a minor.

3. Special requirements and recommendations
   a. Requirement
   All English majors must maintain at least a 3.0 average in their upper division ENGL courses as well as a cumulative GPA of at least 2.0.
   b. Recommendation
   Students should complete a class in criticism such as FINE 494, Critical Analysis of Art, or ENGL 421, History of Literary Criticism.

CONCENTRATIONS
Bachelor of Arts
ENGLISH

Literature
Writing
English with Teaching

Requirements vary with the concentration selected. See faculty adviser for a program sheet detailing exact and complete requirements for the major and concentration chosen.

Students seeking a degree in English with Teaching should see their faculty advisers in both English and Teacher Certification.

ENVIRONMENTAL RESTORATION AND WASTE MANAGEMENT

School of Natural Science and Mathematics

Bachelor of Science

1. Baccalaureate graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

			Cr. Hrs.
a. General Education			33
b. B.S. Distinction (Math and Statistics)			8
MATH 151	Calculus I	(5)	
STAT 200	Probability and Statistics	(3)	
c. Human Performance and Wellness			3

2. Requirements specific to this degree

a. Required Environmental courses			42
ENGS 110	Introduction to Environmental Restoration and Waste Management	(3)	
ENGS 211	Hazardous/Radioactive Waste Management	(3)	
ENGS 212, 212L	Environmental Health and Safety, Lab	(3)	
ENGS 213, 213L	Site Characterization, Lab	(5)	
ENGS 216	Site Remediation	(3)	
ENGS 217	Environmental Law and Regulations	(3)	
ENGS 312,312L	Soil Properties and Characterization, Lab	(4)	
ENGS 315	Disturbed Lands Rehabilitation	(2)	
ENGS 413	Environmental Fate and Transport of Contaminants	(4)	
ENGS 420, 420L	Environmental Instrumentation and Analytical Methods, Lab	(4)	
ENGS 492	Capstone in Environmental Restoration and Waste Managements	(2)	
ENGS 499	Internship	(4)	
b. Required courses from other disciplines:			27
BIOL 105, 105L	Attributes of Living Systems, Lab	(5)	
CHEM 131, 131L	General Chemistry, Lab	(5)	
CHEM 132, 132L	General Chemistry, Lab	(5)	
CHEM 311, 311L	Organic Chemistry, Lab	(5)	
ENGL 385	Technical Writing	(3)	
GEOL 111, 111L	Principles of Physical Geology, Lab	(4)	
c. Eight hours chosen from the following:			8
BIOL 211, 211L	Ecosystem Biology, Lab	(5)	
BIOL 250, 250L	Microbiology, Lab	(5)	
BIOL 330, 330L	Biological Chemistry, Lab	(4)	
CHEM 312, 312L	Organic Chemistry, Lab	(5)	
CHEM 321	Physical Chemistry I	(3)	
CHEM 322	Physical Chemistry II	(3)	
GEOL 351	Applied Geochemistry	(3)	
GEOL 415	Introduction to Ground Water, Lab	(4)	
MANG 201	Principles of Management	(3)	
MATH 152	Calculus II	(5)	
MATH 260	Differential Equations	(3)	
MATH 265	Linear Algebra	(3)	

b. Concentrations
There are no concentrations currently available under this degree.

c. Electives (unrestricted) 9
Environmental Restoration and Waste Management major will concentrate at least nine hours of upper division electives in a focused area of study. These courses must be selected in consultation with an adviser prior to a student's senior year. If desired, a student may use electives to satisfy requirements for a minor.

3. Special Requirements
   a. Grades of less than "C" are not accepted in required courses.
   b. Students must pass a comprehensive/practical exercise within ENGS 492 as a partial graduation requirement.

4. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

FINE AND PERFORMING ARTS

School of Humanities and Social Sciences

Bachelor of Arts

1. Baccalaureate graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

	Cr. Hrs.
a. General Education	33
b. B.A. Distinction (Foreign Language)	6
c. Human Performance and Wellness	3

2. Requirements specific to this degree

a. Required courses (all concentrations except Music with Teaching)			6
FINE 494	Seminar in Critical Analysis of the Arts (all concentrations except Music with Teaching)	(3)	
Fine and Performing Arts course(s) (must be outside concentration except for Music Theatre Concentration)		(3)	
b. Concentrations—see below (students must choose one)			47-70
c. Electives (unrestricted)			7-28

If desired, a student may use electives towards satisfying requirements for a minor.

CONCENTRATIONS

Bachelor of Arts
FINE AND PERFORMING ARTS

Art

Required courses:			47
ARTE 101	Two Dimensional Design	(3)	
ARTE 102	Three Dimensional Design	(3)	
ARTE 151	Basic Drawing	(3)	
ARTE 211	Art History: Ancient-1300	(3)	
ARTE 212	Art History: Europe 1300-1900	(3)	
ARTE 251	Figure Drawing	(3)	
ARTE XXX 200	Level Studio Classes	(6)	
ARTE 300	Exhibitions and Management	(2)	
ARTE 315	Modernist Art History	(3)	
ARTE 316	Post Modern Art History	(3)	
ARTE XXX 300	Level Studio Classes	(6)	
ARTE XXX 400	Level Studio Classes	(6)	
ARTE 494	Senior Seminar and Portfolio	(3)	

Music

Required courses:			45
MUSA 114	Theory I-Introduction	(3)	
MUSA 115	Theory II-Diatonic Concepts	(3)	
MUSA 116	Ear Training and Sightsinging I	(2)	
MUSA 117	Ear Training and Sightsinging II	(2)	
MUSA 214	Theory III	(2)	
MUSA 215	Theory IV	(2)	

MUSA 302	Keyboard Literature, or	
MUSA 303	Symphonic Literature or	
MUSA 318	Vocal Literature	(3)
MUSA 317	Orchestration	(2)
MUSA 326	Music History and Literature I	(3)
MUSA 327	Music History and Literature II	(3)
MUSA 450	Beginning Conducting	(2)
MUSL XXX	Music Lessons	(8)
MUSP 420	Senior Recital	(2)
MUSP XXX	Performance Ensembles	(8)

Options:

Each music student must choose one of the following options and take specific courses required for that option in: 8-25

Music Performance	(8-10)
Commercial Music	(8)
Music with Teaching (K-12)	(8-25)

Students who want the option in Music with Teaching should see their faculty advisers in both Music and in Teacher Certification and refer to the program sheets detailing requirements.

Special Requirements and Recommendations

Each music student must attend weekly recitals and required concerts and pass basic proficiencies.

Music Theatre

Required Courses: 45

HPWA 170	Theory and Practice Modern Dance	(1)
HPWA 175	Theory and Practice Modern Jazz Dance or	
HPWE 178	Tap Dance	(1)
HPWA 176	Theory and Practice Ballet	(1)
HPWA 219	Methods of Ballroom Dancing	(2)
HPWA 253	Beginning Improvisation and Composition in Dance	(3)
HPWA 271	Fundamentals of Modern Dance or	
HPWA 277	Fundamentals of Ballet	(2)
HPWA 372	Theory and Practice Modern Dance or	
HPWA 376	Theory and Practice Ballet	(1)
MUSA 114	Theory I—Introduction*	(3)
MUSA 116	Ear Training and Sightsinging I	(2)
MUSA 130	Class Piano I	(2)
MUSA 131	Class Piano II	(2)
MUSL 237	Private Lessons: Voice	(2)
THEA 151	Acting I: Beginning Acting	(3)
THEA 270	Music Theatre I	(2)
THEA 270L	Music Theatre Performance Lab	(1)
THEA 341	Music Theatre History and Literature	(3)
THEA 351	Acting III: Stage Dialects	(3)
THEA 352	Acting IV: Styles in Acting	(3)
THEA 370	Music Theatre II	(2)
THEA 370L	Music Theatre Performance Lab	(1)
THEA 401	Theatre Management	(3)
THEA 470	Music Theatre III	(2)
THEA 470L	Music Theatre Performance Lab	(1)

*MUSA 110 (Notation) required first if deficiency occurs

Theatre

Required courses:			17
THEA 117, 118	Play Production	(2)	
THEA 217, 218	Play Production	(2)	
THEA 151	Acting I: Beginning Acting	(3)	
THEA 160	Theatre Studies	(1)	
THEA 401	Theatre Management	(3)	
THEA 451	Beginning Directing	(3)	
THEA 492	Senior Production Project	(3)	
Options			
Specific courses are required for options available under this degree			34
Acting Directing Design/Technical			

Requirements may vary with the concentration and option selected. See faculty adviser for a program sheet detailing exact and complete requirements for the major, concentration and option chosen.

HISTORY

School of Humanities and Social Sciences

Bachelor of Arts

1. Baccalaureate graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

	Cr. Hrs.
a. General Education	33
b. B.A. Distinction (Foreign Language)	6
c. Human Performance and Wellness	3

2. Requirements specific to this degree

a. Required courses — 45

HIST 101	Western Civilization	(3)
HIST 102	Western Civilization	(3)
HIST 131	United States History	(3)
HIST 132	United States History	(3)
HIST 404	Introduction to Historical Research	(3)

21 upper division credit hours as follows:

European History, select one course from:

HIST 301	History of England Since 1485	(3)
HIST 330	History of 19th Century Europe	(3)
HIST 331	The 20th Century	(3)
HIST 332	History of Modern Warfare	(3)
HIST 400	The Soviet Union and Eastern Europe	(3)
HIST 430	The Ancient Mediterranean World	(3)

United States History, select one course from:

HIST 342	The Age of Jefferson and Jackson	(3)
HIST 344	The Age of Industry in America	(3)
HIST 346	History of Modern America	(3)
HIST 420	Civil War and Reconstruction	(3)

Third World History, select one course from:

HIST 306	History of South and Southeast Asia	(3)
HIST 310	Latin American Civilization	(3)
HIST 340	History of the Islamic World	(3)
HIST 401	East Asia: The Formative Period	(3)
HIST 403	East Asia and the Modern World	(3)

Topical History, select one course from:

HIST 304	History of Colorado	(3)
HIST 315	American Indian History	(3)
HIST 320	The American West	(3)
HIST 405	Public History	(3)
HIST 410	Environmental History	(3)
ECON 312	Economic History of the U.S.	(3)
	Three additional courses must be selected from those listed above.	(9)

9 upper division credit hours selected from the following disciplines: Anthropology, Economics, English, Literature, Philosophy, Political Science, and Sociology

b. Concentrations

There are no concentrations currently available under this degree.

c. See faculty adviser for a program sheet detailing exact and complete requirements for the major.

d. Electives 36

If desired, a student may use electives to satisfy requirements for a minor.

3. Special recommendations

All history majors are encouraged to take an additional six hours of a language beyond the six required for the B.A. degree distinction.

HUMAN PERFORMANCE AND WELLNESS*

School of Humanities and Social Sciences

Bachelor of Arts

1. Baccalaureate graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

	Cr. Hrs.
a. General Education	33
b. B.A. Distinction (Foreign Language)	6
c. Human Performance and Wellness	3

2. Requirements specific to this degree

a. Required courses — 33

BIOL 141	Human Anatomy and Physiology	(3)
BIOL 141L	Human Anatomy and Physiology Lab	(2)
HPWA 200	Introduction to Human Performance and Wellness	(2)
HPWA 213	Methods of Physical Fitness	(1)
HPWA 233	Methods of Weight Training	(1)
HPWA 234	Prevention and Care of Athletic Injuries	(2)
HPWA 260	School and Personal Health	(3)
HPWA 301	Tests and Measurements	(2)
HPWA 309	Anatomical Kinesiology	(2)
HPWA 350	Motor Development/Learning	(3)
HPWA 370	Biomechanics	(2)
HPWA 370L	Biomechanics Lab	(1)
HPWA 380	Adapted Physical Education	(3)
HPWA 401	Legal Considerations	(2)
HPWA 403	Exercise Physiology	(2)
HPWA 403L	Exercise Physiology Lab	(1)
HPWA 494	Senior Seminar (Capstone)	(1)

b. Concentrations—see below (students must choose one) — 17-28

c. Electives (unrestricted) — 31-24

If desired, a student may use electives to satisfy requirements for a minor.

d. Special requirements

Red Cross Standard First Aid/CRP certification is required.

CONCENTRATIONS

Bachelor of Arts

HUMAN PERFORMANCE AND WELLNESS

Adapted Physical Education
Corporate Fitness/Exercise Science
Human Performance and Wellness with Teaching (K-12)

Requirements vary, depending upon the concentration selected. See faculty adviser for a program sheet detailing exact and complete requirements for the major and concentration chosen.

Students seeking a degree in Human Performance and Wellness with Teaching should see their faculty advisers in both Human Performance and Wellness and Teacher Certification.

*Pending Approval

LIBERAL ARTS (Interdisciplinary Major)

School of Humanities and Social Sciences

Bachelor of Arts

1. Baccalaureate graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

	Cr. Hrs.
a. General Education	33
b. B.A. Distinction (Foreign Language)	6
c. Human Performance and Wellness	3

2. Requirements specific to this degree

a. Required courses — 18

ARTE 115	Art Appreciation	(3)
ENGL 150	Introduction to Literature	(3)
MUSA 220	Music Appreciation	(3)
THEA 141	Theatre Appreciation	(3)

One of the following sequences

(1)	Select two courses from:		
	ENGL 131	World Literature I	(3)
	ENGL 132	World Literature II	(3)
	ENGL 133	World Literature III	(3)
(2)	ENGL 254	English Literature I	(3)
	ENGL 255	English Literature II	(3)
(3)	ENGL 261	United States Literature I	(3)
	ENGL 262	United States Literature II	(3)
(4)*	ARTE 211	Art History, Ancient-1300	(3)
	ARTE 212	Art History, Europe 1300-1900	(3)

*Students choosing the Art primary area may not make this selection.

(5)	MUSA 266	History of Popular Music	(3)
	THEA 145	Introduction to Literature—Drama	(3)

b. Required Primary and Secondary Areas of Study

(1) Students select one Primary Area of Study from among the following and choose courses from a list for that Primary area (15 credit hours must be upper division*): — 18-21

(a) Art	(21)
(b) English	(18)
(c) Philosophy	(18)
(d) Theatre	(18)

*In philosophy only twelve hours must be upper division.

(2) Students select one Secondary Area of Study (different from the Primary Area) from among the following and choose courses from a list for that Secondary area (9 credit hours must be upper division): — 12-15

(a) Art	(15)
(b) English	(12)
(c) Philosophy	(12)
(d) Theatre	(12)

c. Concentrations

There are no concentrations currently available under this degree.

d. See faculty adviser for a program sheet detailing exact and complete requirements for the major.

e. Electives (unrestricted) — 30-33

3. Special requirements
   Students will select both a Primary and a Secondary area of study from the lists shown; these areas may *not* be from the same discipline.

MASS COMMUNICATION

School of Humanities and Social Sciences

Bachelor of Arts

1. Baccalaureate graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

	Cr. Hrs.
a. General Education	33
b. B.A. Distinction (Foreign Language)	6
c. Human Performance and Wellness	3

2. Requirements specific to this degree

a. Required courses			21
MASS 101	Mass Media in America	(3)	
MASS 231	News Writing and Reporting	(3)	
MASS 397	Practicum	(1)	
MASS 421	Journalism Law and Ethics	(3)	
MASS 494	Senior Seminar	(3)	
MASS 499	Internship	(8)	
b. Concentrations—see below (students must choose one)			18
c. Electives (unrestricted)			42

If desired, a student may use electives to satisfy requirements for a minor.

3. Special requirements
   (1) Continuance in the program after the sophomore year will be contingent upon the student's satisfying the following requirements:
      (a) Completion of the English Composition sequence, with at least a 2.5 GPA average and no grade of "D" or "F".
      (b) Completion of the two introductory courses (MASS 101 and MASS 231) in Mass Communications, with at least a 2.5 average and no grade of "D" or "F".
      (c) Maintenance of at least a 2.5 GPA in MASS courses, in addition to at least a 2.0 GPA overall, is necessary for Mass Communications majors to proceed to graduation.

CONCENTRATIONS

Bachelor of Arts

MASS COMMUNICATIONS

News/Editorial
Broadcasting
Public Relations

Requirements vary with the concentration selected. See faculty adviser for a program sheet detailing exact and complete requirements for the major and concentration chosen.

MATHEMATICS

School of Natural Science and Mathematics

Bachelor of Science

1. Baccalaureate graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

	Cr. Hrs.
a. General Education	33
b. B.S. Distinction (Math/Statistics/Computer Science)	6
c. Human Performance and Wellness	3

2. Requirements specific to this degree

a. Required courses			42
MATH 151	Calculus I	(5)	
MATH 152	Calculus II	(5)	
MATH 253	Calculus III	(4)	
MATH 260	Differential Equations	(3)	
MATH 265	Linear Algebra	(3)	
MATH 310	Number Theory	(3)	
MATH 361	Numerical Analysis	(4)	
MATH 369	Math Logic and Discrete Structures	(3)	
MATH 390, 391	Abstract Algebra, or		
MATH 452, 453	Advanced Calculus	(6)	
MATH 450	Complex Variables	(3)	
One of the following:			
STAT 311	Statistical Methods	(3)	
STAT 312	Correlation and Regression	(3)	
STAT 313	Sampling Techniques	(3)	
CSCI 445	Computer Graphics	(3)	
b. Concentrations---see below			
c. Electives (unrestricted)			39

If desired, a student may use electives to satisfy requirements for a minor.

CONCENTRATIONS

Bachelor of Science

MATHEMATICS

Statistics

Mathematics with Teaching (Elementary or Secondary)

Requirements may vary if a concentration is selected. See faculty adviser for a program sheet detailing exact and complete requirements for the major and concentration chosen.

Students seeking a degree in Mathematics with elementary or secondary teaching should see their faculty advisers in both Mathematics and Teacher Certification.

NURSING

School of Professional Studies

Bachelor of Science (B.S.N.)

1. Baccalaureate graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

			Cr. Hrs.
a. General Education			33
Required General Education Courses			
PSYC 121	General Psychology I	(3)	
PSYC 233	Human Growth and Development	(3)	
b. B.S. Distinction (Math, Statistics and Computer Science)			6
MATH XXX	Mathematics course at or above MATH 113 level	(3)	
STAT 200	Probability and Statistics	(3)	
c. Human Performance and Wellness			3

2. Requirements specific to this degree

a. Required courses			71
BIOL 141, 141L	Human Anatomy and Physiology and Lab	(5)	
BIOL 203	Human Nutrition	(3)	
BIOL 241	Pathophysiology	(4)	
BIOL 250, 250L	General Microbiology and Lab	(5)	
NURS 225	Introduction to Nursing	(2)	
NURS 245, 245L	Fundamentals of Nursing and Lab	(5)	
NURS 325	Pharmacology in Nursing	(2)	
NURS 335	Health Assessment	(3)	
NURS 345, 345L	Nursing Process I: The Adult and Lab	(8)	
NURS 355, 355L	Nursing Process II: Expanding Family and Lab	(4)	
NURS 365, 365L	Nursing Process III: The Child and Lab	(4)	
NURS 425, 425L	Nursing Process IV: Community Health and Lab	(5)	
NURS 435, 435L	Nursing Process V: Mental Health and Lab	(5)	
NURS 445, 445L	Nursing Process VI: Advanced Nursing Process Lab	(7)	
NURS 455, 455L	Leadership Process: Theory and Practice and Lab	(5)	
NURS 475	Research Process	(2)	
NURS 485	Professional Perspectives	(2)	

   b. There are no concentrations available under this major.

   c. See faculty adviser for a program sheet detailing exact and complete requirements for the major.

   d. Electives (upper division) 10

   (1) Any upper division courses (6)

   (2) Upper division NURS courses (4)

   (3) Additional Nursing Courses Required for Advanced Placements: for RN's and LPN's (consult adviser for requirements)

   NURS 316 Professional Role Transition (2)
   NURS 316 RN-BSN Bridge Course (4)
   NURS 335L Health Assessment Laboratory (1)

   (4) If desired, a student may use electives towards satisfying requirements for a minor.

3. Special requirements

The BSN program is designed for individuals who desire a professional degree in nursing. The four-year program provides educational experiences to prepare a professional nurse generalist to practice in a variety of health care settings. Advanced placement is available for RN's and LPN's. Contact the Nursing Department for specific information and curriculum plan.

a. Admission requirements include: satisfactory scores on the Scholastic Aptitude Test (SAT), 850 or above, or a composite American College Testing (ACT) score of 21 or better (scores of SAT 810 and ACT 19 will be accepted if the test was taken before October, 1989). High school courses in biology, chemistry and algebra are recommended. All first year college courses must be completed or in progress before a student can be admitted to the BSN program. An admissions committee selects students from applicants who best meet requirements. In addition, anatomy and physiology and microbiology, each with the lab, are required for admission into the program. All admission materials must be on file in the office of the Nursing Department prior to October 1 for consideration for admission into the following spring semester.

b. Registered Nurse students seeking credit for prior nursing learning experiences will follow "The Colorado Nursing Articulation Model" and will be required to take and successfully complete a nursing bridge course specifically designed for RNs entering the program for degree completion or take and achieve a grade of 45 or better on the ACT-PEP examination 403, 457, and 554. Contact the Mesa State College Testing Center to schedule these examinations. Please check with your adviser for further information.

   Students in the baccalaureate nursing program with prior experience and/or state-approved nursing diplomas or associate degrees in nursing may earn credit towards a B.S.N. degree at Mesa State College by: (1) successfully writing specific ACT-PEP tests, thus earning 25 semester hours of non-traditional credit; or (2) successfully completing NURS 316 (see course description for prerequisites), thus being awarded 25 semester credit hours recorded as transfer credit.

c. Students transferring in credit for Human Anatomy and Physiology and/or Microbiology courses taken at other accredited colleges/universities must provide evidence that these courses had separate laboratory components before the course can be accepted to fulfill program requirements. This will not necessarily appear on the transcript.

d. Any RN who desires to enroll in a nursing course for personal enrichment only, must secure permission from the course instructor and must register for "No Credit Desired". If credit is desired, students must be officially accepted into the nursing program prior to enrolling in the Nursing courses to receive credit.

e. Progression requirements: All nursing courses must be completed in sequence. All required 200 level courses (with the exception of BIOL 241 and STAT 200) must be completed before 300 level nursing courses may be taken. BIOL 241 must be successfully completed by the end of the semester when the first 300 level nursing courses are taken. The student may not continue the nursing courses until BIOL 241 is successfully completed. All required 300 level courses must be completed before 400 level nursing courses may be taken. Students must complete all 200 level nursing courses or be an (RN) advanced placement student to enroll in the nursing elective courses. (Students may take any two nursing elective topics in any sequence.)

f. Students must have a 2.0 ("C") on a 4.0 scale or higher grade for all courses required for completion of the Baccalaureate Degree in nursing. This policy applies regardless of when the course was taken. A "D" grade or lower in any required course is not acceptable.

g. Students enrolled in nursing courses having both theory and clinical components must take these components concurrently. If a student receives a grade of less than "C", 2.0 on a 4.0 scale, in either component (theory and/or clinical) both components must be repeated. Certain courses have separate sections, each with theory and clinical, so all sections of the course must be successfully completed to pass the course. The student may not progress to the next nursing course and will have to retake both components the next semester that the course is offered as space is available.
h. Faculty members of a program may withdraw a student due to unsafe clinical practice or behavior jeopardizing professional practice at any time during the semester.
i. Any basic science courses required by the program must have been taken within the last five (5) years to fulfill graduation requirements. These include BIOL 141 and 141L, BIOL 241, BIOL 250 and 250L. If the course was not taken within the last five (5) years, the course must be re-taken or competency proven by a challenge examination. The challenge examination process may only be accomplished if a college-level course has been successfully completed previously with a letter grade of "C" or higher awarded. The final approval for all accepted support course requirements and/or challenge examination will be made by the Department of Nursing and Allied Health.

PARKS AND RECREATION RESOURCE MANAGEMENT

School of Professional Studies

Bachelor of Science

1. Baccalaureate graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

	Cr. Hrs.
a. General Education	33
b. B.S. Distinction (Math/Statistics/Computer Science)	6
c. Human Performance and Wellness	3

2. Requirements specific to this degree

a. Required Courses — 48

PRRM 200	Cultural Foundations of Play, Recreation, and Leisure	(2)
PRRM 210	The Parks and Recreation Professions	(2)
PRRM 300	Recreation Programming: Designing Experience	(3)
PRRM 410	Managing Human Resources in Recreation and Parks	(3)
PRRM 420	Financing, Managing, and Marketing Parks and Recreation	(3)
PRRM 440	Research Studies, Methods and Tools	(3)
PRRM 450	Legal Liabilities and Legislative Foundations	(2)
PRRM 494	Senior Seminar: Professional Issues and Trends	(2)
PRRM 499	Internship	(10)

Select three courses from the following:

PRRM 310	Public Park Systems	(3)
PRRM 311	Community Recreation Systems	(3)
PRRM 312	Resort Management and Development	(3)
PRRM 313	Children's Outdoor Play Settings	(3)

Select three courses from the following:

PRRM 350	Private and Commercial Recreation Systems	(3)
PRRM 351	Community Tourism Systems	(3)
PRRM 352	National and State Park Systems	(3)
PRRM 353	Public and Municipal Park and Recreation Systems	(3)

b. Concentrations

There are no concentrations currently available under this degree.

c. See faculty adviser for a program sheet detailing exact and complete requirements for the major.

d. Electives (unrestricted) — 33

If desired, a student may use electives to satisfy requirements for a minor.

PHYSICAL SCIENCES

School of Natural Science and Mathematics

Bachelor of Science

1. Baccalaureate graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

	Cr. Hrs.
a. General Education	33
b. B.S. Distinction (Math/Computer Science)	6
(1) In Geology, the degree distinction should be satisfied by taking Calculus I (MATH 151) and Probability and Statistics (STAT 200) for 8 credit hours.	
(2) In Physics, the degree distinction should be satisfied by taking Calculus I and II (MATH 151 and 152) for 10 credit hours.	
c. Human Performance and Wellness	3

2. Requirements specific to this degree

a. Concentrations—see below (students must choose one)	57-58
b. Electives (unrestricted)	23-24

If desired, a student may use electives to satisfy requirements for a minor. Minors which complement a student's professional studies are mathematics, computer science, chemistry, and biology. Some minors which broaden a student's cultural perspective are history, literature, and fine arts.

3. Special requirements
Grades of less than "C" are not accepted in required courses in the major.

CONCENTRATIONS

Bachelor of Science
PHYSICAL SCIENCES

Geology

Required courses			58
GEOL 111, 111L	Principles of Physical Geology and Lab	(4)	
GEOL 112, 112L	Principles of Historical Geology and Lab	(4)	
GEOL 203	Introduction to Environmental Geology	(3)	
GEOL 301, 301L	Earth Tectonics and Lab	(4)	
GEOL 331, 331L	Mineral Studies and Lab	(4)	
GEOL 340, 340L	Petrology and Lab	(4)	
GEOL 380	Field Studies	(6)	
GEOL 390	Computer Applications in Geology	(3)	
GEOL 402, 402L	Applications of Geomorphology and Lab	(4)	
GEOL 444, 444L	Stratigraphy and Sedimentation and Lab	(4)	
GEOL 490	Seminar	(3)	
BIOL 105, 105L	Attributes of Living Systems and Lab	(5)	
CHEM 131, 131L	General Chemistry and Lab	(5)	
PHYS 111, 111L	General Physics and Lab	(5)	

Options:
Specific courses are required if the following options available under this degree are chosen:

Environmental Geology
Geology with Teaching

Students who want an option in Geology with Teaching should see their faculty advisers, both in Geology and Teacher Certification.

Physics

Required courses:		57-58
PHYS 121	Classical Physics I	(4)
PHYS 122, 122L	Classical Physics II	(5)
PHYS 223, 223L	Classical Physics III	(4)
PHYS 311	Electromagnetic Theory	(3)
PHYS 320	Modern Physics	(3)
PHYS 321	Quantum Theory I	(3)
PHYS 322	Quantum Theory II	(3)
PHYS 331	Junior Laboratory I	(2)
PHYS 332	Junior Laboratory II	(2)
PHYS 362	Statistical and Thermal Physics	(3)
PHYS 421	Advanced Dynamics	(3)
PHYS 482	Senior Research	(1)
PHYS 494	Seminar (taken two times)	(2)
Six hours (one of which must be at the 400 level) selected from:		
PHYS 352	History and Philosophy of Physics	(3)
PHYS 396	Topics	(3)
PHYS 432	Nuclear and High Energy Physics	(3)
PHYS 441	Solid State Physics	(3)
Required Mathematics Courses		
MATH 253	Calculus III	(4)
MATH 260	Differential Equations	(3)
MATH 360	Methods of Applied Mathematics	(3)
At least three hours of required Mathematics electives selected from:		
MATH 265	Linear Algebra	(3)
MATH 361	Numerical Analysis	(4)
MATH 390	Abstract Algebra	(3)
MATH 450	Complex Variables	(3)
MATH 452	Advanced Calculus	(3)

Options:

Specific courses are required for the option of Physics with Teaching which is available under this degree. Students who want the option in Physics with Teaching should see their faculty advisers, both in Physics and Teacher Certification.

Requirements may vary according to the concentration and option selected. See faculty adviser for a program sheet detailing exact and complete requirements for the major, concentration and option chosen.

POLITICAL SCIENCE

School of Humanities and Social Sciences

Bachelor of Arts

Cr. Hrs.

1. Baccalaureate graduation requirements (for further information, see section on "Degree Requirements" in this catalog)
   - a. General Education 33
   - b. B.A. Distinction (Foreign Language) 6
   - c. Human Performance and Wellness 3

2. Requirements specific to this degree
   - a. Required courses 48

POLS 101	American Government	(3)
POLS 236	State and Local Government	(3)
POLS 261	Comparative Politics	(3)
POLS 452	Political Theory: Classical/Medieval	(3)
POLS 453	Political Theory: Modern	(3)
POLS 490	Senior Seminar: Political Science	(3)
SOCI 310	Methods of Social Research	(3)
STAT 200	Probability and Statistics	(3)

18 credit hours selected as follows:

American Government: 2 courses selected from: (6)

POLS 110	Development of U.S. Constitution	(3)
POLS 325	The American Presidency	(3)
POLS 424	The Legislative Process	(3)
POLS 428	The American Court System	(3)

American Politics: 2 courses selected from: (6)

POLS 342	Public Administration	(3)
POLS 345	Political Parties and Interest Groups	(3)
POLS 350	American Political Thought	(3)
POLS 412	Constitutional Law	(3)

World Politics: 2 courses selected from: (6)

POLS 365	European Government and Politics	(3)
POLS 370	World Politics	(3)
POLS 475	American/Foreign National Security	(3)

6 upper division credit hours selected from the following disciplines: Anthropology, Economics, History, Philosophy, Psychology, or Sociology. (6)

   - b. Concentrations—see below
   - c. See faculty adviser for a program sheet detailing exact and complete requirements for the major.
   - d. Electives 33

     If desired, a student may use electives to satisfy requirements for a minor.

3. Special recommendations:

   Students are encouraged to complete an internship as part of the program. See "Course Description" section for a description of the internships offered.

CONCENTRATIONS
Bachelor of Arts
POLITICAL SCIENCE

Administration of Justice

Requirements may vary if a concentration is selected. See faculty adviser for a program sheet detailing exact and complete requirements for the major and concentration chosen.

PSYCHOLOGY

School of Humanities and Social Sciences

Bachelor of Arts

1. Baccalaureate graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

	Cr. Hrs.
a. General Education	33
b. B.A. Distinction (Foreign Language)	6
c. Human Performance and Wellness	3

2. Requirements specific to this degree
   a. Required courses — 47

PSYC 121	General Psychology I	(3)
PSYC 122	General Psychology II	(3)
PSYC 311 or SOCI 310	Quantitative Research or Methods of Social Research	(3)
PSYC 312, 312L	Experimental Psychology and Lab	(4)
PSYC 314, 314L	Psychology of Learning and Lab	(4)
PSYC 320	Social Psychology	(3)
PSYC 414	Systems and Theories of Psychology	(3)
STAT 200	Probability and Statistics	(3)

   21 upper division credit hours selected from the following: (21)

PSYC 310	Child Psychology	(3)
PSYC 322	Motivation	(3)
PSYC 330	Psychology of Adolescents and Young Adults	(3)
PSYC 340	Abnormal Psychology	(3)
PSYC 350	Psychology of Adulthood	(3)
PSYC 395	Independent Study	(1-3)
PSYC 396	Topics	(1-3)
PSYC 400	Psychological Testing	(3)
PSYC 412	Industrial and Organizational Psychology	(3)
PSYC 416	Memory and Cognition	(3)
PSYC 420	Personality	(3)
PSYC 422	Sensation and Perception	(3)
PSYC 430	Biopsychology	(3)
PSYC 495	Independent Study	(1-3)
PSYC 496	Topics	(1-3)

   b. Concentrations—see below
   c. Electives — 34
      If desired, a student may use electives to satisfy requirements for a minor.

3. Special requirements
   To pursue the Psychology major a student must have completed with at least a "C" grade the following:
   ENGL 111 and 112, English Composition (or the equivalent)
   MATH 110, College Mathematics, or MATH 113, College Algebra or have established mathematics competency
   PSYC 121 and 122, General Psychology I and II
   STAT 200, Probability and Statistics

CONCENTRATIONS
Bachelor of Arts
PSYCHOLOGY

Counseling Psychology

Requirements may vary if a concentration is selected. See faculty adviser for a program sheet detailing exact and complete requirements for the major and concentration chosen.

SELECTED STUDIES

Bachelor of Arts, Selected Studies

Admission to Selected Studies

Formal application for admission is required of all students entering the Selected Studies program. Application will be made with the Dean of the School to which the student's area of studies is assigned for administration.

No freshman will be admitted to the program.

The minimum academic requirements for admission are:

1. Completion of at least 24 semester hours of academic credit exclusive of physical education activity courses and remedial courses.
2. A G.P.A. of 2.50 or better. Transfer or other grades which are less than five years old will be used to determine eligibility for the program.

Admission to the program will be contingent upon completion of a curriculum contract. Curriculum contracts must follow one of the formats listed below:

1. A 72 credit hour major consisting of two primary areas of study containing a least 36 semester hours of credit each.
2. A 72 credit hour major consisting of a primary area of study containing at least 48 semester hours of credit and a secondary area of study containing at least 24 semester hours of credit.
3. A 72 credit hour major consisting of a primary area of study containing at least 36 semester hours of credit and two secondary areas of study containing at least 18 semester hours of credit each.

All curriculum contracts are subject to the following:

1. An area of study (primary or secondary) may consist of coursework from a single academic discipline. In such cases, each of the areas in the program must be taught in an academic discipline with a different coursework prefix.
2. The primary area(s) of study may be interdisciplinary in nature. Such programs must be approved by the dean and department chairs in consultation with faculty advisers in the affected areas. The student is required to present a justification for the particular curriculum in their application.

Applications will be judged on the basis of academic integrity, pre-professional preparation, student's career goals, etc.

3. At least one-half of the credit hours in each area of study must be at the upper division level with the exception that one vocation-technical secondary area of study may be included in the curriculum which will be exempt from this provision.
4. Each major program (all areas of study combined) must contain a minimum of 36 semester hours of upper division credit whether or not the curriculum contains a vocational-technical area of study.
5. Each study area contract must be approved by the Chair of the department teaching the principal discipline contained in the area of study. Since departments are responsible for the academic integrity of curriculum contracts, Chairs may deny the proposed study area curriculum, change it, or require hours in excess of minimums described above. The proposed curriculum must include courses which de-

fine the philosophy and methodology of the academic disciplines comprising the areas of study.

6. At least one-half of the courses contained in the curriculum contract (all study areas combined) must be earned at Mesa State College. Departments may require coursework exceeding this minimum.
7. A student must be in residence as a full-time student at Mesa State College for at least three semesters after being formally admitted to Selected Studies to qualify for the baccalaureate degree.
8. A student must complete all other general education and graduation requirements.

To file an application the student must:

1. Submit copies of all college transcripts.
2. Present a credit evaluation report from the Registrar's office.
3. Present a written application which includes a description of academic and career goals; a definition and description of a clear, unifying theme in the program; a statement of reasons for choosing particular disciplines included in the proposed major program; such other information the student may wish to include in support of the application.
4. Have the application statement reviewed by the dean and chairs of the affected departments. Department Chairs have the responsibility of designating an academic adviser to assist students in selecting coursework for inclusion in the primary and secondary subject areas. The Chair and faculty may deny a student's proposal.
5. Complete a preliminary program proposal in consultation with the various academic advisers. The program proposal must have the approval of the affected department Chairs.
6. File the approved preliminary program proposal with the Dean of the School.

Execution of Curriculum Contracts

It will be the responsibility of the Dean of the School to which the Selected Studies program has been assigned for administration to oversee execution of curriculum contracts, assisted by advisers in each academic department.

Each school will identify one or more persons who will assist the responsible dean in executing curriculum contracts. These school representatives will act as advisers to Selected Studies students whose first primary area of study is being taught in the adviser's school. Assignment of Selected Studies candidates to school advisers will be made by the supervising dean at the time the student is formally admitted to the program.

The supervising dean will notify applicants in writing of formal admission to the program or of rejection for admission. In addition, the supervising dean will keep a file of approved curriculum contract and will approve petitions to graduate in Selected Studies upon completion of curriculum contracts.

Once a student is admitted to Selected Studies under a curriculum contract, that contract must be fulfilled as negotiated unless formally amended. Amendments will be discouraged except for good cause. Amendments to curriculum contracts must be approved by all persons involved in the original area of study negotiations, and appropriate changes must be made in the original contract on file with the supervising dean. Amending a contract does not affect the student's status as an admitted Selected Studies student.

Overall administration of the Selected Studies program is the responsibility of the Dean of the School of Humanities and Social Sciences, who works closely with the other deans to fulfill this responsibility.

SOCIOLOGY

School of Humanities and Social Sciences

Bachelor of Arts

1. Baccalaureate graduation requirements (for further information, see section on "Degree Requirements" in this catalog) — Cr. Hrs.
   a. General Education — 33
   b. B.A. Distinction (Foreign Language) — 6
   c. Human Performance and Wellness — 3

2. Requirements specific to this degree
   a. Required courses — 48

ANTH 201	Cultural Anthropology	(3)
SOCI 310	Methods Social Research	(3)
SOCO 260	General Sociology	(3)
SOCO 264	Social Problems	(3)
SOCO 400	History of Sociology	(3)
SOCO 410	Contemporary Social Theory	(3)
STAT 200	Probability and Statistics	(3)

15 upper division hours selected from the following:

SOCO 300	Political Sociology	(3)
SOCO 310	Sociology of Religion	(3)
SOCO 312	Collective Behavior and Popular Culture	(3)
SOCO 314	Population Impact Problems and Urbanization	(3)
SOCO 316	Social Stratification	(3)
SOCO 330	Crime and Delinquency	(3)
SOCO 350	Sociology of Death and Dying	(3)
SOCO 360	Social Influences of Small Groups	(3)

12 upper division hours selected from the following:

ANTH 310	Qualitative Methods in Social Research	(3)
HSER 301	Introduction to Human Services	(3)
HSER 310	Sex Role Identification	(3)
PSYC 320	Social Psychology	(3)

Or any upper division course from the following disciplines: Economics, History, or Political Science

   b. Concentrations—see below
   c. Electives — 33

If desired, a student may use electives to satisfy requirements for a minor.

CONCENTRATIONS

Bachelor of Arts

SOCIOLOGY

Anthropology
Criminology
Human Services

Requirements may vary if a concentration is selected. See faculty adviser for a program sheet detailing exact and complete requirements for the major and concentration chosen.

SOCIAL SCIENCE (Interdisciplinary Major)

School of Humanities and Social Sciences

Bachelor of Arts

1. Baccalaureate graduation requirements (for further information, see section on "Degree Requirements" in this catalog) **Cr. Hrs.**
   a. General Education 33
   b. B.A. Distinction (Foreign Language) 6
   c. Human Performance and Wellness 3

2. Requirements specific to this degree
   a. Required Courses for all majors 33

ANTH 201	Cultural Anthropology	(3)
ECON 201	Principles of Macroeconomics, or	
ECON 202	Principles of Microeconomics	(3)
GEOG 103	World Regional Geography	(3)
HIST 101	Western Civilization	(3)
HIST 102	Western Civilization	(3)
HIST 131	United States History	(3)
HIST 132	United States History	(3)
POLS 101	American Government	(3)
PSYC 121	General Psychology I or	
PSYC 122	General Psychology II	(3)
SOCO 260	General Sociology or	
SOCO 264	Social Problems	(3)
International subject to be selected from: ANTH 330, ANTH 410, ECON 320, ECON 420, HIST 331, HIST 332, POLS 365, POLS 370		(3)

   b. Required Primary and Secondary Areas of Study 27

   (1) Primary and Secondary Requirements
   Complete the Primary Area and Secondary Area requirements by selecting two academic disciplines from the following: Anthropology, Economics, History, Political Science, Psychology, Sociology

   (2) Primary Area Requirements
   18 credit hours, 15 of which are upper division. Any courses offered under the selected discipline may be chosen.

   (3) Secondary Area Requirements
   9 upper division credit hours in the discipline selected. Any courses offered under the selected discipline may be chosen.

   c. See faculty adviser for a program sheet detailing exact and complete requirements for the major.

   d. Electives 21
   If desired, a student may use electives towards satisfying requirements for a minor.

ASSOCIATE DEGREES AND CERTIFICATES OFFERED AT MESA STATE COLLEGE

Associate degrees offered at Mesa State College are the Associate of Arts (A.A.), Associate of Science (A.S.), and Associate of Applied Science (A.A.S.) degrees. As prescribed by the state, only one A.A. and one A.S. degree may be earned by a student. The various emphases currently defined and available for the student to choose under the A.A. and the A.S. degrees are listed below. A.A.S. degrees are also listed, as well as a Certificate of Occupational Proficiency and two certificates of completion. Other associate degrees and certificates are available through UTEC and may be found in the last section of this catalog.

Associate of Arts (A.A.)
- Liberal Arts
- Business Administration
- Early Childhood Education
- English
- Fine Arts
  - Art
  - Music
  - Theatre
- Humanities
- Office Administration
- Social Science

Associate of Science(A.S.)
- Biology
- Chemistry
- Computer Science
- Engineering
- Geology
- Mathematics
- Physics

Business Computer Information Systems (A.A.S.)
Commercial Art (A.A.S.)
Early Childhood Education (Certificate of Occupational Proficiency)
Engineering Methods (Certificate of Completion)
Environmental Restoration Engineering Technology (A.A.S.)
Legal Assistant (Certificate of Completion) Program Requirements not listed: offered through Continuing Education—contact that office with questions.
Nursing (A.A.S.)
Office Supervision and Management (A.A.S.)
- Accounting Technician
- Administrative Secretary
- Legal Secretary
- Medical Secretary

Radiologic Technology (A.A.S.)
Travel, Recreation, and Hospitality Management (A.A.S.)

ART

School of Humanities and Social Sciences

Associate of Arts

1. Associate of Arts graduation requirements (for further information, see section on "Degree Requirements" in this catalog). Minimum semester hours required: 63-66

			Cr. Hrs.
a. General Education			34
b. Human Performance and Wellness			2
2. Course requirements specific to this degree			
a. Required courses			21
ARTE 101	Two-Dimensional Design	(3)	
ARTE 102	Three-Dimensional Design	(3)	
ARTE 151	Basic Drawing	(3)	
ARTE 211, 212	Art History	(6)	
ARTE 2XX	200 level studios	(6)	
b. Electives			9

Nine hours of electives chosen in consultation with art adviser.

c. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

BUSINESS COMPUTER INFORMATION SYSTEMS

School of Professional Studies

Associate of Applied Science

1. Course requirements for this degree

			Cr. Hrs.
a. Six (6) semester hours of English satisfied by completing the following:			
ENGL 111 and 112 or 115			6
b. Six (6) lower division semester hours chosen from the following disciplines:			
Social or Behavioral Science or Literature			6
c. All of the following courses:			25
ACCT 201	Principles of Accounting I	(3)	
ACCT 202	Principles of Accounting II	(3)	
CISB 101	Business Data Processing	(2)	
CISB 104	BASIC Programming	(1)	
CISB 105	Introduction to Business Software	(1)	
CISB 131	COBOL Programming I	(3)	
CISB 205	Advanced Business Software	(3)	
CISB 231	COBOL Programming II	(3)	
MANG 201	Principles of Management	(3)	
Business electives approved by adviser		(3)	
d. Other course requirements:			6
SPCH 102	Speechmaking	(3)	

2. Electives 17
3. Human Performance and Wellness 2
4. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

BIOLOGY

School of Natural Science and Mathematics

Associate of Science

Emphasis Requirements:
Study directed toward the Associate of Science degree will serve as a basis for the Bachelor of Science degree with the same discipline and also for other programs at Mesa State College and at other colleges. Faculty advisers will assist students in planning programs to meet requirements. Programs of study in the sciences are very sequential and advanced planning for the transition from an associate program to a baccalaureate program is imperative for economy of time and effort.

Minimum semester hours required: 62

1. Associate of Science graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

	Cr. Hrs.
a. General Education	33
b. Human Performance and Wellness	2

2 Course requirements specific to this degree

a. Required courses			15
	BIOL 105, 105L	Attributes of Living Systems and Laboratory	(5)
	BIOL 106, 106L	Principles of Animal Biology and Laboratory	(5)
	BIOL 107, 107L	Principles of Plant Biology and Laboratory	(5)
b. Additional courses in biology specialization should be selected in consultation with adviser.			12

3. Special requirements
General Education and course requirements in discipline area plus electives chosen in consultation with the student's adviser up to the minimum of 62 credit hours comprise the requirements for this emphasis.

4. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

BUSINESS ADMINISTRATION

School of Professional Studies

Associate of Arts

1. Associate of Arts graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

			Cr. Hrs.
a. General Education			34
ENGL 111 and 112		(6)	
SPCH 102		(3)	
Mathematics		(3)	
Science		(4)	
Social and Behavioral Sciences (2 disciplines)		(9)	
Humanities		(9)	
b. Human Performance and Wellness			2

2. Course requirements specific to this degree

a. Required courses			15
ACCT 201	Principles of Accounting I	(3)	
ACCT 202	Principles of Accounting II	(3)	
BUGB 101	Introduction to Business	(3)	
BUGB 211	Business Communications	(3)	
CISB 101	Business Data Processing	(2)	
CISB 104	BASIC Programming or		
CISB 105	Introduction to Business Software	(1)	

3. Electives 12-13

4. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

COMMERCIAL ART

School of Humanities and Social Sciences

Associate of Applied Science

Designed to prepare students for careers in the advertising industry in agencies, corporate marketing, or advertising departments. The student will develop basic skills in visual information design, and pre-reproduction preparation including typesetting, camera-ready copy, and illustration. A variety of techniques, with emphasis on computer graphics, are included in instruction and hands on preparation.

Minimum semester hours required: 72

1. Course requirements for this degree

	Cr. Hrs.
a. Nine (9) semester hours of English satisfied by completing any one of the following sequences:	9
ENGL 111 and 112, or 115	
and	
ENGL 251	
2) Six (6) semester hours selected from the following:	6
ANTH 201, 222 — HIST 101, 102, 131, 132	
ECON 201, 202 — POLS 101, 261	
ENGL 131 and 132 or 133, 150, 141, 142, 145 — PSYC 121, 122	
GEOG 103 — SOCO 144, 260	
b. Human Performance and Wellness	2

2. Course requirements specific to this degree

a. Required courses			55
ARTE 101	Two Dimensional Design	(3)	
ARTE 102	Three Dimensional Design	(3)	
ARTE 151	Basic Drawing	(3)	
ARTE 154	Ink Drawing	(1)	
ARTE 190	Mixed Media	(2)	
ARTE 193	Airbrush	(2)	
ARTE 251	Figure Drawing	(3)	
GRCO 110	Survey of Commercial Art and Printing Processes	(1)	
GRCO 115, 115L	Intro to Computer Graphics and Lab	(2)	
GRCO 120	Typography/Type Design	(2)	
GRCO 121	Basic Layout and Design	(2)	
GRCO 130	Basic Photography	(1)	
GRCO 131	Photo Finishing	(1)	
GRCO 132	Basic Darkroom Techniques	(1)	
GRCO 142, 142L	Mechanical Image Production, Lab	(3)	
GRCO 143, 143L	Computer Composition and Lab	(3)	
GRCO 220	Design and Illustration I	(3)	
GRCO 221	Design and Illustration II	(3)	
GRCO 230, 230L	Process Photography and Lab	(4)	
GRCO 242, 242L	Desktop Imaging and Lab	(4)	
GRCO 243, 243L	Computer Illustration and Lab	(3)	
GRCO 270	Portfolio Construction	(1)	
GRCO 299	Internship	(4)	

(See page 257 for GRCO course descriptions)

3. Special requirements
   Students seeking an Associate of Applied Science degree must obtain a minimum of 2.00 ("C") in each GRCO course and must satisfy all other graduation requirements.
4. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

COMPUTER SCIENCE

School of Natural Sciences and Mathematics

Associate of Science

Study directed toward the Associate of Science degree will serve as a basis for the Bachelor of Science degree with the same discipline and also for other programs at Mesa State College and at other colleges. Faculty advisers will assist students in planning programs to meet requirements. Programs of study in the sciences are very sequential and advanced planning for the transition from an associate program to a baccalaureate program is imperative for economy of time and effort.

Minimum semester hours required: 64

1. Associate of Science graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

	Cr. Hrs.
a. General Education	33
b. Human Performance and Wellness	2

2. Course requirements specific to this degree

a. Required courses			16
	CSCI 111	Computer Science I	(4)
	CSCI 112	Computer Science II	(3)
	CSCI 241	Computer Architecture I	(3)
	CSCI 242	Computer Architecture II	(3)
	CSCI 250	Data Structures	(3)

3. Special requirements and recommendations
   a. It is recommended that a strong background in mathematics (at least Calculus sequence) be completed simultaneously.
   b. General Education and course requirements in discipline area plus electives chosen in consultation with the student's adviser up to the minimum of 64 credit hours comprise the requirements for this emphasis.
4. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

EARLY CHILDHOOD EDUCATION

School of Professional Studies

Associate of Arts

This curriculum will meet the needs of those presently employed in nursery schools or daycare centers and/or those contemplating work in early childhood education. Students will increase their understanding of the education and care of children. Successful students may find employment in private and cooperative daycare centers, nursery schools, children's homes, hospitals, etc. Students will have laboratory experience in the campus Early Childhood Education Center and other similar community facilities.

1. Associate of Arts graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

	Cr. Hrs.
a. General Education	34
The following courses satisfy those requirements and meet the needs of the Early Childhood Education program. Where no course is specified, students may select from the list of general education requirements.	
ENGL 111 and 112	(6)
SPCH 102	(3)
Mathematics (MATH 113 recommended; only courses listed under general education for the Associate of Arts degree satisfy the requirement)	(3-4)
Science	(4)
PSYC 121, 122	(6)
SOCO 260	(3)
Humanities	(9)
b. Human Performance and Wellness	2

2. Course requirements specific to this degree

a. Required courses			32
ARTE 210	Early Childhood Art	(2)	
BIOL 203	Human Nutrition	(3)	
EDEC 110	Infant and Toddler Development and Curriculum	(2)	
EDEC 111	Curriculum in Early Childhood Education	(3)	
EDEC 121	Introduction to Early Childhood	(2)	
EDEC 252	Student Teaching	(5)	
EDEC 260	Child-Care Center Management	(3)	
ENGL 240	Children's Literature	(3)	
HPWA 256	Creative Play Activities in Dance	(2)	
MUSA 241	Music and Methods in Early Childhood Education	(2)	
PSYC 233	Human Growth and Development	(3)	
THEA 213	Creative Play Activities—Drama	(2)	

3. Special requirements and recommendations
   a. First Aid to be taken through the Red Cross
   b. Placement in the program depends on individual maturity and professional growth. A physical exam is required to enter. General education requirements are standard and listed under Graduation Requirements in this catalog.
4. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

EARLY CHILDHOOD EDUCATION

School of Professional Studies

Certificate of Occupational Proficiency

A person may take one course or as many as are needed for state licensing. These are included in the curriculum which follows:

Minimum semester hours required: 27-28

1. Course requirements for this certificate

				Cr. Hrs.
a. All of the following courses:				25
		Sem Hrs	*Con Hrs*	
EDEC 110	Infant and Toddler Development and Curriculum	2	32	
EDEC 111	Curriculum in Early Childhood Ed	3	47	
EDEC 252	Student Teaching	5	240	
EDEC 260	Child Care Center Management	3	47	
HMEC 211	Nutrition	3	47	
PSYC 121	General Psychology	3	47	
PSYC 233	Human Growth and Development	3	47	
SOCO 260	General Sociology	3	47	
b. Choice of two courses from the following:				2-3
ARTE 210	Early Childhood Art	2	32	
EDEC 121	Introduction to Early Childhood	2	32	
ENGL 240	Children's Literature	3	47	
MUSA 241	Music and Methods in Early Childhood Education	2	32	
THEA 213	Creative Play Activities-Drama	2	32	

2. Special requirements and recommendations
   Current Red Cross First Aid Card is required.

3. See faculty adviser for a program sheet detailing exact and complete requirements for this certificate.

ENGINEERING

School of Natural Science and Mathematics

Associate of Science

Study directed toward the Associate of Science degree will serve as a basis for the Bachelor of Science degree with the same discipline and also for other programs at Mesa State College and at other colleges. Faculty advisers will assist students in planning programs to meet requirements. Programs of study in the sciences are very sequential and advanced planning for the transition from an associate program to a baccalaureate program is imperative for economy of time and effort.

Minimum semester hours required: 64

1. Associate of Science graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

	Cr. Hrs.
a. General Education	33
b. Human Performance and Wellness	2

2. Course requirements specific to this degree

a. Required courses		13
ENGR 111	Engineering Graphics and Design	(3)
ENGR 240	Statics	(3)
ENGR 241	Dynamics	(3)
ENGR 251	Circuit Analysis I	(3)
ENGR 251L	Circuit Analysis I Lab	(1)

   b. Additional engineering courses coordinated with the branch of engineering to be studied. Students should consult their adviser for transfer agreements.

3. Special requirements and recommendations
   General Education and course requirements in discipline area plus electives chosen in consultation with the student's adviser up to the minimum of 64 credit hours comprise the requirements for this emphasis.

4. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

ENGINEERING METHODS

School of Natural Science and Mathematics

Certificate of Completion

Minimum semester hours required: 35

1. Course requirements for this certificate
   a. All of the following courses:

CSCI 120	Technical Software	(3)
ENGL 111, 112	English Composition	(6)
ENGR 105, 105L	Basic Engineering Drawing and Lab	(3)
ENGR 106, 106L	Beginning Computer Aided Drafting and Lab	(4)
ENGR 231, 231L	Surveying I and Lab	(3)
ENGS 110	Introduction to Environmental Restoration/Waste Management	(3)
MATH 130	Trigonometry	(3)
MATH 141	Analytical Geometry	(3)
SPCH 102	Speechmaking	(3)

2. Special requirements and recommendations
   Successful completion of this certificate program with a minimum GPA of 2.5 is a prerequisite to entering the Associate of Science Degree, Emphasis in Engineering Program (transfer program).
3. See faculty adviser for a program sheet detailing exact and complete requirements for this certificate of completion.

ENGLISH

School of Humanities and Social Sciences

Associate of Arts

1. Associate of Arts graduation requirements (for further information, see section "Degree Requirements: in this catalog). Minimum requirements: 63

			Cr. Hrs.
a. General Education			34
b. Human Performance and Wellness			2
2. Course requirements specific to this degree			
a. Required courses			18
ENGL 131, 132, 133	Survey of Western World Lit I & II or III	(6)	
ENGL 222	Mythology (Classical)	(3)	
ENGL 150	Introduction to Literature	(3)	
ENGL 254	Survey of English Literature I	(3)	
ENGL 261	Survey of American Literature I	(3)	
b. Electives			9

Nine hours of electives chosen in consultation with English adviser.

c. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

ENVIRONMENTAL RESTORATION ENGINEERING TECHNOLOGY

School of Natural Science and Mathematics

Associate of Applied Science

Minimum semester hours required: 74

1. Course requirements for this degree

			Cr. Hrs.
a. English			6
Social or Behavioral Science or Literature			6
b. All of the following courses:			58
BIOL 105, 105L	Attributes of Living Systems, Lab	(5)	
CHEM 121, 121L	Principles of Chemistry, Lab	(5)	
CHEM 122, 122L	Principles of Organic Chemistry, Lab	(5)	
CSCI 120	Technical Software	(3)	
ENGR 131, 131L	Mapping and Technical Graphics, Lab	(3)	
ENGS 110	Introduction to Environmental Restoration/ Waste Management	(3)	
ENGS 211	Hazardous/Radioactive Waste Management	(3)	
ENGS 212, 212L	Environmental Health and Safety, Lab	(3)	
ENGS 213, 213L	Site Characterization, Lab	(4)	
ENGS 216	Site Remediation	(3)	
ENGS 217	Environmental Law and Regulations	(3)	
ENGS 220, 220L	Introduction to Environmental Instrumentation, Lab	(3)	
ENGS 250	Environmental Compliance	(3)	
ENGS 292	Capstone in Environmental Restoration	(2)	
GEOL 111, 111L	Principles of Physical Geology, Lab	(4)	
MATH 130	Trigonometry	(3)	
STAT 200	Probability and Statistics	(3)	

2. Human Performance and Wellness — 2

3. Special requirements and recommendations
   a. A "D" grade or lower in any required ENGS course is not acceptable.
   b. Students must pass a comprehensive examination/practical exercise within ENGS 292.

4. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

GEOLOGY

School of Natural Science and Mathematics

Associate of Science

Study directed toward the Associate of Science degree will serve as a basis for the Bachelor of Science degree with the same discipline and also for other programs at Mesa State College and at other colleges. Faculty advisers will assist students in planning programs to meet requirements. Programs of study in the sciences are very sequential and advanced planning for the transition from an associate program to a baccalaureate program is imperative for economy of time and effort.

Minimum semester hours required: 62

1. Associate of Science graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

		Cr. Hrs.
a. General Education		33
b. Human Performance and Wellness		2

2. Course requirements specific to this degree

a. Required courses		11
GEOL 111, 111L	Principles of Physical Geology and Laboratory	(4)
GEOL 112, 112L	Principles of Historical Geology and Laboratory	(4)
GEOL 203	Introduction to Environmental Geology	(3)

2. Electives 17

3. Special requirements and recommendations
   General education and course requirements in discipline area plus electives chosen in consultation with the student's adviser up to the minimum of 62 credit hours comprise the requirements for this emphasis.

4. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

HUMANITIES

School of Humanities and Social Sciences

Associate of Arts

1. Associate of Arts graduation requirements (for further information, see section "Degree Requirements: in this catalog). Minimum requirements: 63

	Cr. Hrs.
a. General Education	34
b. Human Performance and Wellness	2

2. Course requirements specific to this degree 27
   a. Twenty-seven credits must be earned in a balanced program drawn from at least three of the following areas, but with not more than 12 credits from any single area (other allied or supporting areas may also be drawn upon):
      Literature, Philosophy, Foreign Languages, Mass Communications. Speech, The Arts, and History of the Arts.
   b. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

MATHEMATICS

School of Natural Science and Mathematics

Associate of Science

Study directed toward the Associate of Science degree will serve as a basis for the Bachelor of Science degree with the same discipline and also for other programs at Mesa State College and at other colleges. Faculty advisers will assist students in planning programs to meet requirements. Programs of study in the sciences are very sequential and advanced planning for the transition from an associate program to a baccalaureate program is imperative for economy of time and effort.

Minimum semester hours required: 64

1. Associate of Science graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

	Cr. Hrs.
a. General Education	33
b. Human Performance and Wellness	2

2. Course requirements specific to this degree

a. Required courses			20
MATH 151	Calculus I	(5)	
MATH 152	Calculus II	(5)	
MATH 253	Calculus III	(4)	
MATH 260	Differential Equations	(3)	
MATH 265	Linear Algebra	(3)	

2. Electives 9

3. Special requirements and recommendations
   a. Recommendation
      CSCI 120 and STAT 200 are highly recommended to be included.
   b. Requirements
      General Education and course requirements in discipline area plus electives chosen in consultation with the student's adviser up to the minimum of 64 credit hours comprise the requirements for this emphasis.

4. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

MUSIC

School of Humanities and Social Sciences

Associate of Arts

1. Associate of Arts graduation requirements (for further information, see section "Degree Requirements: in this catalog). Minimum requirements: 63

	Cr. Hrs.
a. General Education	34
b. Human Performance and Wellness	2

2. Course requirements specific to this degree

a. Required courses			19
MUSA 114*, 115	Theory I and II	(6)	
MUSA 116, 117	Ear Training and Sightsinging I & II	(4)	
MUSA 130	Class Piano I		
or			
MUSA 137	Class Voice I	(2)	
MUSA 220	Music Appreciation	(3)	
MUSP XXX	Vocal or Instrumental Ensembles	(4 total)	

*NOTE: MUSA 110 (Standard Notation) must be taken if the student is not ready for 114.

b. Electives:Eight hours of approved electives must be chosen in consultation with the adviser. 8

c. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

NURSING (ADN)

School of Professional Studies

Associate of Applied Science

1. Course requirements for this degree

			Cr. Hrs.
a. General Education			15
ENGL 111 and 112	English Composition	(6)	
PSYC 233	Human Growth and Development	(3)	
	Social or Behavioral electives	(3)	
CSCI 100	Computers in Our Society	(3)	
b. Human Performance and Wellness			2

2. Course requirements specific to this degree

a. Required core courses			40
NURS 113, 113L	Nursing Concepts I and Lab	(9)	
NURS 123, 123L	Nursing Concepts II and Lab	(9)	
NURS 210, 210L	Nursing Concepts III and Lab	(10)	
NURS 230, 230L	Nursing Concepts IV and Lab	(10)	
NURS 273	Issues in Nursing	(2)	
b. Related study area requirements			14
BIOL 141, 141L	Human Anatomy and Physiology	(5)	
BIOL 241	Pathological Physiology	(4)	
BIOL 250,250L	General Microbiology	(5)	

c. Additional nursing course required for Advanced Placement for LPN (consult adviser for requirements)

NURS 133	LPN-ADN Bridge Course	(3)

3. Special requirements
   a. This program is highly structured with specific prerequisite courses as well as specialized admission requirements. Admission materials must be on file in the office of Nursing and Allied Health by March 1 for consideration the following fall semester. Enrollment is limited.
   b. Graduates are eligible to take the examination for licensure as registered nurses who may serve in first level (staff nurse) positions in hospitals, nursing homes, physicians' offices, and other health agencies where adequate direction is provided.
   c. Admission requirements include a composite ACT score of 18 or above or a composite Enhanced ACT of 20 or above depending on when the ACT was taken, or combined SAT score of 790 or 810 or above depending on when the SAT was taken. A high school diploma or G.E.D. is required. High school courses in biology, chemistry, and algebra or their college equivalent are recommended. An admissions committee selects students from applicants who best meet requirements. *All nursing courses must be completed in sequence.*
   d. All students seeking credit for prior nursing learning experiences will follow "The Colorado Nursing Articulation Model" and will be required to take and successfully complete a nursing "bridge course" specifically designed for an LPN entering the program for degree completion or take and achieve a grade of 45 or better on the ACT-PEP examinations 403, 453, and 554. Contact the Mesa State College Testing Center to schedule these examinations. Please check with your adviser for further information at any time during the semester.
   e. Students transferring in credit for Human Anatomy and Physiology and/or Microbiology courses taken at other accredited colleges/universities must provide evidence that these courses had separate laboratory components before the

course can be accepted to fulfill program requirements. All transfer credit must be evaluated by the Registrar's office for acceptability as general education and general education courses must be at the 100 or 200 level.

f. *Progression*: Students must have a 2.0 ("C") on a 4.0 scale or higher grade for *all* courses required for completion of the Associate of Applied Science degree in Nursing. This policy applies regardless of when the course was taken. A "D" grade or lower in any required course is not acceptable.

g. Students enrolled in nursing courses having both theory and clinical components must take these components concurrently. If a student receives a grade of less than "C", 2.0 or a 4.0 scale, in either component (theory and/or clinical) both components must be repeated. Certain courses have separate sections, each with theory and clinical, so all sections of the course must be successfully completed to pass the course. The student may not progress to the next nursing course and will have to retake both components the next semester that the course is offered as space is available.

h. *Retention:* A student will not be retained in the program if she/he receives a grade in any course in the ADN curriculum below a 2.0. Faculty members of the program may withdraw a student due to unsafe clinical practice or behavior jeopardizing professional practice any time during the semester.

i. Any support courses required by the program must have been taken within the last five (5) years to fulfill graduation requirements. These include BIOL 141 and 141L, BIOL 241, BIOL 250 and 250L. If the course was not taken within the last five (5) years, the course must be re-taken or competency proven by a challenge examination. The challenge examination process may only be accomplished if a college-level course has been successfully completed previously with a letter grade of "C" or higher awarded. The final approval for all accepted support course requirements and/or challenge examination will be made by the Dean of the School of Nursing and Allied Health.

4. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

OFFICE ADMINISTRATION

School of Professional Studies

Associate of Arts

1. Associate of Arts graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

			Cr. Hrs.
a. General Education			34
ENGL 111 and 112		(6)	
SPCH 102		(3)	
Mathematics		(3)	
Science		(4)	
Social and Behavioral Sciences (2 disciplines)		(9)	
Humanities (2 disciplines)		(9)	
b. Human Performance and Wellness			2

2. Course requirements specific to this degree

a. Required business courses			12
ACCT 201	Principles of Accounting I	(3)	
BUGB 211	Business Communications	(3)	
CISB 101	Business Data Processing	(2)	
CISB 104	BASIC Programming or		
CISB 105	Introduction to Business Software	(1)	
MANG 201	Principles of Management	(3)	
b. Required emphasis courses			9
OFAD 153	Beginning Word/Information Processing	(3)	
OFAD 201	Office Management or		
OFAD 202	Records Management	(3)	
OFAD 215	Document Format/Skill Development	(3)	

3. Electives 6

4. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

OFFICE SUPERVISION AND MANAGEMENT: ACCOUNTING TECHNICIAN

School of Professional Studies

Associate of Applied Science

1. Course requirements for this degree

			Cr. Hrs.
a. ENGL 111 and 112 or 115			6
Literature, Social or Behavioral Sciences, or Psychology			6
b. Human Performance and Wellness			2
c. All of the following courses			
(1) Required business courses			43
ACCT 201	Principles of Accounting I	(3)	
ACCT 202	Principles of Accounting II	(3)	
ACCT 205	Ten-Key Operations	(1)	
BUGB 141	Business Mathematics or		
MATH 113	College Algebra or		
MATH 121	Mathematical Foundations of Business or		
MATH 127	Mathematics of Finance	(3,4)	
BUGB 211	Business Communications	(3)	
BUGB 231	Survey of Business Law	(3)	
BUGB 241	Income Tax	(3)	
CISB 101	Business Data Processing	(2)	
CISB 104	BASIC Programming or		
CISB 105	Introduction to Business Software	(1)	
MANG 121	Human Relations in Business	(3)	
MANG 201	Principles of Management	(3)	
OFAD 101	Bookkeeping for Small Business	(3)	
OFAD 201	Office Management	(3)	
OFAD 202	Records Management	(3)	
OFAD 153	Beginning Word/Information Processing	(3)	
OFAD 270	Office Automation: Microcomputer Applications	(3)	
(2) Other required courses			6
ECON 201	Principles of Macroeconomics	(3)	
ECON 202	Principles of Microeconomics	(3)	

2. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

OFFICE SUPERVISION AND MANAGEMENT: ADMINISTRATIVE SECRETARY

School of Professional Studies

Associate of Applied Science

1. Course requirements for this degree

			Cr. Hrs.
a. ENGL 111 and 112			6
Social or Behavioral Science, Psychology or Literature			6
b. Human Performance and Wellness			2
c. All of the following courses			
(1) Required business courses			12
BUGB 141	Business Mathematics	(3)	
BUGB 211	Business Communications	(3)	
CISB 101	Business Data Processing	(2)	
CISB 104	BASIC Programming	(1)	
MANG 121	Human Relations in Business	(3)	
(2) Required office administration courses			27
OFAD 101	Bookkeeping for Small Business	(3)	
OFAD 153	Beginning Word/Information Processing	(3)	
OFAD 201	Office Management or		
OFAD 202	Records Management	(3)	
OFAD 215	Document Format/Skill Development	(3)	
OFAD 221	Transcription Machines/Business and Medical	(3)	
OFAD 253	Intermediate Word/Information Processing	(3)	
OFAD 266	Word/Information Processing: Document Production	(4)	
OFAD 270	Office Automation: Microcomputer Applications	(3)	
OFAD 271	Office Automation: Procedures and Technology	(2)	

2. Electives 9
   Six hours must be business electives.
3. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

OFFICE SUPERVISION AND MANAGEMENT: LEGAL SECRETARY

School of Professional Studies

Associate of Applied Science

1. Course requirements for this degree

			Cr. Hrs.
a. ENGL 111 and 112 or 115			6
Social and Behavioral Science or Literature			6
b. Human Performance and Wellness			2
c. All of the following courses			12
(1) Required business courses			
BUGB 141	Business Mathematics	(3)	
BUGB 211	Business Communications	(3)	
BUGB 231	Survey of Business Law	(3)	
CISB 101	Business Data Processing	(2)	
CISB 104	BASIC Programming	(1)	
(2) Required office administration courses			33
OFAD 101	Bookkeeping for Small Business	(3)	
OFAD 153	Beginning Word/Info Processing	(3)	
OFAD 201	Office Management	(3)	
OFAD 202	Records Management	(3)	
OFAD 215	Document Format/Skill Development	(3)	
OFAD 221	Transcription Machines/Business and Medical	(3)	
OFAD 244	Legal Procedures	(3)	
OFAD 253	Intermediate Word/Info Processing	(3)	
OFAD 266	Word/Information Processing: Document Production	(4)	
OFAD 270	Office Automation: Microcomputer Applications	(3)	
OFAD 271	Office Automation: Procedures and Technology	(2)	
(3) Other required courses			3
SPCH 101	Interpersonal Communications	(3)	

2. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

OFFICE SUPERVISION AND MANAGEMENT: MEDICAL SECRETARY

School of Professional Studies

Associate of Applied Science

1. Course requirements for this degree

			Cr. Hrs.
a. ENGL 111 and 112 or 115			6
Social and Behavioral Science or Literature			6
b. Human Performance and Wellness			2
c. All the following courses			
(1) Required business courses			6
BUGB 141	Business Mathematics	(3)	
BUGB 211	Business Communications	(3)	
(2) Required office administration courses			28
OFAD 101	Bookkeeping for Small Business	(3)	
OFAD 147	Medical Terminology	(4)	
OFAD 153	Beginning Word/Information Processing	(3)	
OFAD 154	Laboratory Techniques	(2)	
OFAD 159	Medical Office Procedures	(3)	
OFAD 215	Document Format/Skill Development	(3)	
OFAD 221	Transcription Machines/Business and Medical	(3)	
OFAD 253	Intermediate Word/Information Processing	(3)	
OFAD 266	Word/Information Processing: Document Production	(4)	
(3) Other required courses			13
BIOL 141	Human Anatomy and Physiology	(3)	
BIOL 141L	Human Anatomy and Physiology Lab	(2)	
HPWA 265	Standard First Aid/Cardio-Pulmonary Resuscitation	(2)	
PSYC 233	Human Growth and Development	(3)	
SOCO 260	General Sociology	(3)	

2. Electives 3

3. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

PHYSICS

School of Natural Science and Mathematics

Associate of Science

Study directed toward the Associate of Science degree will serve as a basis for the Bachelor of Science degree with the same discipline and also for other programs at Mesa State College and at other colleges. Faculty advisers will assist students in planning programs to meet requirements. Programs of study in the sciences are very sequential and advanced planning for the transition from an associate program to a baccalaureate program is imperative for economy of time and effort.

Minimum semester hours required: 62

1. Associate of Science graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

	Cr. Hrs.
a. General Education	33
b. Human Performance and Wellness	2

2. Course requirements specific to this degree

a. Required courses			13
PHYS 121	Classical Physics I	(4)	
PHYS 122	Classical Physics II	(4)	
PHYS 122L	Experimental Mechanics Laboratory	(1)	
PHYS 223	Classical Physics III	(3)	
PHYS 223L	Experimental Electromagnetism Laboratory	(1)	

2. Electives 14

3. Special requirements
   General Education and course requirements in discipline area plus electives chosen in consultation with the student's adviser up to the minimum of 62 credit hours comprise the requirements for this emphasis.

4. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

RADIOLOGIC TECHNOLOGY

School of Professional Studies

Associate of Applied Science

The Radiologic Technology graduate is eligible to take the examination administered by the American Registry of Radiologic Technologists.

1. Course requirements for this degree

			Cr. Hrs.
a. ENGL 111, 112	English Composition		6
b. Social or Behavioral Science (including Psychology or Literature)			6
2. All of the following courses:			71
BIOL 141, 141L	Human Anatomy and Physiology	(5)	
CSCI 100	Computers in Our Society	(3)	
RADT 110	Radiologic Introduction	(3)	
RADT 121, 121L	Radiologic Technology I and Lab	(3)	
RADT 122, 122L	Radiologic Principles I and Lab	(3)	
RADT 123	Clinical Experience I	(4)	
RADT 125	Radiologic Science I	(2)	
RADT 131, 131L	Radiologic Technology II and Lab	(3)	
RADT 132, 132L	Radiologic Principles II and Lab	(3)	
RADT 133	Clinical Experience II	(4)	
RADT 135	Radiologic Science II	(2)	
RADT 243	Clinical Experience III	(10)	
RADT 251	Radiologic Technology III	(3)	
RADT 253	Clinical Experience IV	(10)	
RADT 261	Radiologic Technology IV	(3)	
RADT 263	Clinical Experience V	(10)	
3. Human Performance and Wellness			2

4. Special requirements and recommendations
   a. Applications must be received by September 1 for spring session. Admissions are limited and a pre-admission interview with the program director is suggested. Students are selected on the basis of academic preparation, ACT scores, aptitude for service within the field, and positions available in the program.
   b. Applicants should complete high school courses in biology, physics, chemistry, algebra, geometry, or their college equivalent.
   c. Students must have a 2.00 (C) or higher for all courses required for completion of the Radiologic Technology Program. A "D" grade or lower in any required course is not acceptable. A grade point average of at least 2.00 (C) must be maintained each semester and a grade no lower than 2.00 (C) in any radiologic technology course may be received to continue in the program. Radiology classes must be completed in sequence and may only be taken after being accepted to the program. General education requirements may be taken previously or simultaneously with program courses.
   d. Any support courses required by the program must have been taken within the last five (5) years to fulfill graduation requirements. These include BIOL 141 and 141L and CSCI 100. If the course was not taken within the last five (5) years, the course must be re-taken or competency proven by a challenge examination. The challenge examination process may only be accomplished if a college-level course has been successfully completed previously with a letter grade of "C" or higher awarded. The final approval for all accepted support course re-

quirements and/or challenge examinations will be made by the Department of Nursing and Allied Health.

5. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

SOCIAL SCIENCE (GENERAL)

School of Humanities and Social Sciences

Associate of Arts

Study directed toward the Associate of Arts degree will serve as a basis for the Bachelor of Arts in Social and Behavioral Sciences and also for programs offered in other schools at Mesa State College. Students should consult faculty advisers to plan specific programs that will prepare them for further study in disciplines of their choice.

Minimum semester hours required: 62

1. Associate of Arts graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

	Cr. Hrs.
a. General Education	34
b. Human Performance and Wellness	2

2. Course requirements specific to this degree
   a. Students must take a minimum of 18 hours of lower-division courses from one or more of the following disciplines: 18

Anthropology	Economics
History	Human Performance and Wellness
Political Science	Psychology
Sociology	

   b. Those students wishing to concentrate in a specific discipline should consult with an adviser in that discipline or the Chairperson of the Department of Social Sciences.

3. Electives 8

4. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

THEATRE

School of Humanities and Social Sciences

Associate of Arts

1. Associate of Arts graduation requirements (for further information, see section "Degree Requirements: in this catalog). Minimum requirements: 63

	Cr. Hrs.
a. General Education	34
b. Human Performance and Wellness	2

2. Course requirements specific to this degree

a. Required courses			23
THEA 141	Theatre Appreciation	(3)	
THEA 142	Makeup	(2)	
THEA 143	Costuming	(2)	
THEA 151	Acting I: Beginning Acting		
	or		
THEA 152	Stage Movement	(3)	
THEA 243	Scene Construction, Painting, and Design		
or			
THEA 244	Beginning Lighting	(3)	
Four credits from: Drama Performance 147, 148, 247, 248			
and/or Play Production 117, 118, 217, 218		(4)	
b. Electives			10

Ten hours of electives also must be chosen in consultation with the adviser.

c. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

TRAVEL, RECREATION AND HOSPITALITY MANAGEMENT

School of Professional Studies

Associate of Applied Science

1. Course requirements for this degree

			Cr. Hrs.
a. ENGL 111 and 112 or 115			6
ECON 201 or PSYC 121		3	
GEOG 103		3	
Additional general education class		3	

2. Course requirements specific to this degree

a. Required courses			48
ACCT 201	Principles of Accounting I or		
OFAD 101	Bookkeeping for Small Business	(3)	
BUGB 101	Introduction to Business	(3)	
BUGB 141	Business Mathematics	(3)	
BUGB 231	Survey of Business Law	(3)	
CISB 101	Business Data Processing	(2)	
CISB 104	BASIC Programming or		
CISB 105	Introduction to Business Software	(1)	
MANG 201	Principles of Management	(3)	
MARK 231	Principles of Marketing	(3)	
TRAV 101	Travel Industry I	(3)	
TRAV 102	Travel Industry II	(3)	
TRAV 103	Travel and Tourism Marketing Techniques	(3)	
TRAV 199	Employment Concepts	(1)	
TRAV 201	Management in the Travel Industry I	(3)	
TRAV 215	Computerized Reservations or		
TRAV 217	Hotel Operations	(3)	
TRAV 299	Internship	(12)	

2. Electives 9

Suggested courses:

ACCT 202	Principles of Accounting II	(3)
ECON 202	Principles of Microeconomics or	
PSYC 122	General Psychology I	(3)

3. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

TEACHER CERTIFICATION

Certification to teach in public schools in the state of Colorado requires that a baccalaureate degree be earned and, additionally, that certification be obtained. At Mesa State College, a student may prepare for certification by earning a baccalaureate degree from among the discipline areas specified below for elementary, secondary, or K-12 certification. In addition, a series of education courses must be completed, along with certain requirements of the state and the Mesa State College Teacher Education and Certification Program. Students seeking certification must:

1. Obtain a program sheet for their academic baccalaureate degree from the appropriate School or department adviser. (Examples: B.S. in Mathematics with Elementary Teacher Certification or B.A. in English with Teacher Certification.) This program sheet should be obtained before the student begins work on his or her degree. The requirements on the program sheet must be met for the degree to be granted.
2. Contact the Teacher Education and Certification Department for requirements and courses necessary within the education area to prepare for certification. Many of these requirements are specified below.

   Teacher certification is a separate process from the degree, although both may be pursued at the same time. The assistance of an adviser in the Teacher Education and Certification program is vital and the student needs to contact the department the first semester in his or her degree work.

   Information concerning requirements and courses of study are based upon current requirements of the State of Colorado and Mesa State College. Requirements are subject to modification, therefore, students are advised to consult the Department of Teacher Education for the current status of requirements.

ELEMENTARY TEACHER CERTIFICATION PROGRAM

Colorado Teacher Certification and Elementary Education Endorsement (Kindergarten through Sixth Grade)

Following are the four components of the Mesa State College elementary teacher certification program:

1. Professional Sequence of Coursework for Elementary Teacher Certification

Required Courses		*Semester Hours*
EDUC 220	Foundations and Legal Aspects of Education	3
EDUC 260	Teaching Diverse Populations	2
EDUC 311	Creative and Physical Expression for Children	3
EDUC 320	The Developing Child in the School	3
EDUC 321	Current Issues in Curriculum Development	3
EDUC 350	Exceptionality in the Classroom	3
EDUC 370	Orientation to Educational Technology	3
EDUC 390	The Comprehensive Elementary Language Program	4
EDUC 400	Learning Theories/Teaching Strategies in the Disciplines	3
EDUC 401	Math Mentorship Laboratory	1
EDUC 494	Pre-Internship Seminar	2
EDUC 499c	Teaching Internship and Colloquium: Elementary	12
	Total Hours Required for Teacher Certification	42

II. Academic Disciplines Approved for Elementary Teacher Certification

English	
Liberal Arts	Refer to specific program sheets and consult
Mathematics	with the appropriate major adviser and with the
Psychology	Teacher Certification Department.
Social Science	

III. Requirements Specific to Elementary Teacher Certification

All students are required to complete the general education requirements of Mesa State College. Following are specific courses necessary to satisfy requirements for teacher certification:

ENGL 111	English Composition
ENGL 112	English Composition
MATH 105	Elements of Mathematics I
HPWA 260	School and Personal Health
PSYC 233	Human Growth and Development
SPCH 102	Speechmaking

IV. Additional Requirements for Teacher Certification

Eligibility requirements for entry and formal admission to the Mesa State College Teacher Certification Program are prescribed by the Colorado Department of Education and Mesa State College. Such requirements are generic in that all students seeking certification and endorsement must complete them regardless of major, program area or chosen specialty. Examples of such requirements include a minimum grade point for English Composition and Speech, taking and passing the California Achievement Test, experience with youth and a letter of reference. Each interested student should consult with advisers in both Teacher Certification and his or her major area.

SECONDARY TEACHER CERTIFICATION PROGRAM

Colorado Teacher Certification at the Secondary Level(Grades Seven through Twelve)

Students may seek certification at the secondary level in the following endorsement areas: English, mathematics, science, and social studies. Consultation with advisers in both Teacher Certification and in the major area is required to establish a comprehensive program.

I. Professional Sequence of Coursework for Secondary Teacher Certification Program

Required Courses		*Semester Hours*
EDUC 220	Foundations and Legal Aspects of Education	3
EDUC 260	Teaching Diverse Populations	2
EDUC 320	The Developing Child in the School	3
EDUC 350	Exceptionality in the Classroom	3
EDUC 360	Teaching and Learning in the Secondary Schools	4
EDUC 370	Orientation to Educational Technology	3
EDUC 405	Reading and Writing in the Content Area	4
EDUC 494	Pre-Internship Seminar	2
EDUC 499g	Teaching Internship and Colloquium: Secondary	12
	Total Hours Required for Teacher Certification	36

II. Academic Course Requirements for Secondary Teacher Certification in the Major Area

English	ENGL 455	Methods of Teaching Secondary English	3
Math	MATH 347	Methods of Teaching Secondary Math	3
Science	BIOL 388	Teaching Science in the Secondary School	3
Social Studies	SOCI 340	Methods of Teaching Social Studies Secondary School	3

III. Requirements Specific to Secondary Teacher Certification

ENGL 111	English Composition
ENGL 112	English Composition
PSYC 233	Human Growth and Development
SPCH 102	Speechmaking

K-12 TEACHER CERTIFICATION PROGRAM

Colorado Teacher Certification at the K-12 Level.

Students may seek certification at the K-12 level in music and physical education. Consultation with advisers in both Teacher Certification and the major area is required to establish a comprehensive program.

I. Professional Sequence of coursework for K-12 Teacher Certification

Required Courses		*Semester Hours*
EDUC 220	Foundations and Legal Aspects of Education	3
EDUC 260	Teaching Diverse Populations	2
EDUC 320	The Developing Child in the School	3
EDUC 350	Exceptionality in the Classroom	3
EDUC 370	Orientation to Educational Technology	3
EDUC 405	Reading and Writing in the Content Areas	4
EDUC 494	Pre-Internship Seminar	2
EDUC 499d	Teaching Internship and Colloquium Elementary/Part	6
EDUC 499h	Teaching Internship and Colloquium Secondary/Part	6
	Total Hours Required for Teacher Certification	32

II. Additional Course Requirements for K-12 Teacher Certification in the Major Area—specific education methodology

Music	MUSA 340	Teaching Elementary and General Music	3
	MUSA 440	Teaching Vocal Music, K-12	3
	MUSA 441	Teaching Instrumental Music, K-12	3
Human Performance	HPWA 320	Elementary School Physical Education	3
	HPWA 408	Methods of Secondary Physical Education	3

III. Requirements Specific to K-12 Teacher Certification

ENGL 111	English Composition	3
ENGL 112	English Composition	3
PSYC 233	Human Growth and Development	3
SPCH 102	Speechmaking	3

ELECTIVES AND/OR MINORS

The unrestricted elective hours within the degree are selected by the student from the academic courses at or above the 100 level. These elective hours may be used to fulfill or partially fulfill requirements for a minor. Minors consist of 15-24 semester hours.

There may be prerequisites for the courses required for the minor which will increase the total number of credit hours for a student who has not already taken those prerequisites. It is required that a minor, if selected, be outside the major so as to encourage a secondary focus to broaden the scope of the educational experience.

A course taken to satisfy either a general education requirement or a major requirement cannot be counted toward the minimum 15 credit hour requirement for a minor. In such cases, the student, in consultation with the department offering the minor, must choose a course substitution within the minor discipline.

At least 33 percent of the credit hours required for the minor must be in courses numbered 300 or above.

Program sheets detailing requirements for the approved minors at Mesa State College are available from the office of the dean of the school in which the minor is offered.

Minors currently approved, along with the school in which they are offered, are:

MINOR	SCHOOL
Administration of Justice	Humanities and Social Sciences
Athletic Training	Professional Studies
Art	Humanities and Social Sciences
Biology	Natural Sciences and Mathematics
Business Administration	Professional Studies
Chemistry	Natural Sciences and Mathematics
Classical Studies	Humanities and Social Sciences
Coaching	Professional Studies
Computer Science	Natural Sciences and Mathematics
Dance	Humanities and Social Sciences
Economics	Humanities and Social Sciences
English (Literature or Writing)	Humanities and Social Sciences
Environmental Restoration and Waste Management	Natural Sciences and Mathematics
Geology	Natural Sciences and Mathematics
History	Humanities and Social Sciences
Mass Communications	Humanities and Social Sciences
Mathematics	Natural Sciences and Mathematics
Music (Instrumental or Vocal)	Humanities and Social Sciences
Parks and Recreation Resource Management	Professional Studies
Philosophy	Humanities and Social Sciences
Physics	Natural Sciences and Mathematics
Political Science	Humanities and Social Sciences
Psychology	Humanities and Social Sciences
Sociology	Humanities and Social Sciences
Speech	Humanities and Social Sciences
Theatre	Humanities and Social Sciences
Wellness/Corporate Fitness	Professional Studies

COURSE DESCRIPTIONS

The course descriptions in this catalog indicate the content of the course and the prerequisites when applicable. Courses are listed in alphabetical order, by their four-letter prefix code, followed by a number and title. The number in parentheses at the end of the course title indicates the credit granted, in terms of semester hours, for each course. Generally, the number of semester hours is the number of hours a class will meet each week. Exceptions are noted in individual course descriptions and, in most cases, prerequisites and/or corequisites stated. In the detailed course descriptions, the course number after the prefix indicates the college year in which the courses should ordinarily be taken.

100-199.....Freshman year
200-299.....Sophomore year
300-399.....Junior year
400-499.....Senior year

Courses numbered 001-099 are preparatory in nature, not intended for transfer purposes, and may not be used to fulfill baccalaureate, associate of arts or associate of science degree requirements or electives. Preparatory courses may not be used to meet elective requirements in Associate of Applied Science or Certificate programs.

Courses identified as "Independent Study" are those beyond the scope of the required curriculum. General restrictions and regulations may be found under the *Program* section of this catalog (see "Independent Study" in the index). Specific regulations apply in certain disciplines, as well. Arrangements and permission must be obtained from the appropriate instructor and dean well in advance.

"Topics" courses are offered from time to time and contain material of special interest within a specific discipline not considered elsewhere in the curriculum. Prerequisites vary with course materials, and enrollment requires consent of the instructor.

Mesa State College reserves the right to withdraw any program or course which is not justified due to lack of enrollment or availability of instructors. Other courses may be added if there is sufficient demand. In some programs, certain courses may be offered on an alternate year basis or as determined by demand.

Discipline Index

Subjects (disciplines) offered by Mesa State College are listed below alphabetically followed by the current course prefix, the page number of the individual course descriptions, and the school holding academic responsibility for the subject.

*School

PROF—Professional Studies
H&SS—Humanities and Social Sciences
NS&M—Natural Sciences and Mathematics

ACCOUNTING

School of Professional Studies

ACCT 201 Principles of Accounting (3)
For those interested in obtaining the basic skills necessary to understand an accounting system and financial statements. (Fall/Spring)

ACCT 202 Principles of Accounting II (3)
Continuation of ACCT 201. Prerequisite: ACCT 201. (Fall/Spring)

ACCT 205 Ten-Key Operations (1)
Skill development essential to accountants in the operation of the ten-key electric calculator with emphasis on both speed and accuracy. Prerequisite: ACCT 201. (Fall/Spring)

ACCT 221 Intermediate Accounting I (4)
Development of a foundational understanding of Generally Accepted Accounting Principles and their application to external financial statements. Prerequisite: ACCT 202. (Fall)

ACCT 222 Intermediate Accounting II (4)
Continuation of ACCT 221. Prerequisite: ACCT 221. (Spring)

ACCT 298 Related Work Experience (1,2)
Practical experience and an opportunity to apply academic knowledge in a work situation approved by the School of Professional Studies. Students must apply for this course through their advisers at least six weeks prior to end of the semester preceding the semester in which they wish to take the course. For additional requirements, see adviser. Prerequisite: nine semester hours of course work in the field chosen, cumulative GPA of 2.50 or higher, and consent of instructor. (Fall/Spring)

ACCT 311 Managerial Accounting (3)
Application of accounting information to managerial decision making for the non-accounting student. Topics include budgeting for planning and control, cost-volume-profit relationships, and capital budgeting. Prerequisite: ACCT 202 and CISB 105. (Fall/Spring)

ACCT 331 Cost Accounting I (3)
Costs and their relationship to planning, controlling, inventory valuation, and decision making. Prerequisite: ACCT 202, CISB 105. (Fall)

ACCT 332 Cost Accounting II (3)
Continuation of ACCT 331. Prerequisite: ACCT 331. (Spring)

ACCT 395 Independent Study (1-3)

ACCT 396 Topics (1-3)

ACCT 401 Governmental Accounting (3)
Accounting principles as they apply to governmental units and non-profit operations. Prerequisite: ACCT 222 or consent of instructor. (Spring)

ACCT 402 Advanced Accounting (3)
The course provides in-depth coverage of consolidated financial statements, partnership accounting, bankruptcy, estates, trusts, and international operations. Prerequisite: ACCT 222. (Fall)

ACCT 411 Auditing (3)
Scope and purposes of the work of a certified public accountant. An in-depth study of the theory of auditing, professional ethics of the profession, legal liability of the auditor, theory of accounting systems, and internal control. Prerequisites: ACCT 222, STAT 214. (Fall)

ACCT 412 Auditing II (3)
Continuation of ACCT 411. Application of auditing theory to financial statements. Examination of audit programs, procedures, and work papers used in each phase of an audit. Prerequisite: ACCT 411. (Spring)

ACCT 421 CPA Review and Professional Preparation I (1)
Review and preparation for the CPA examination and the profession of public accounting through a study of typical CPA exam problems. Prerequisite: senior status. (Fall)

ACCT 422 **CPA Review and Professional Preparation II** **(2)**
Continuation of ACCT 421. Prerequisite: ACCT 222 and 332. (Spring)

ACCT 441 **Income Tax** **(5)**
For students in the Bachelor of Science in Accounting program. Covers the Federal Income Tax Law in depth as it deals with individual taxpayers. Introduction to the various tax reference sources that deal with the subject. Prerequisite: ACCT 222 or consent of instructor. (Fall)

ACCT 442 **Advanced Tax and Tax Research** **(5)**
Federal Income Tax Law and filing requirements for corporations, partnerships, estates, trusts, and gifts. The student will be required to participate in the Volunteer Income Tax Assistance program in order to acquire practical experience in preparing tax returns. Prerequisite: ACCT 441. (Spring)

ACCT 495 **Independent Study** **(1-3)**

ACCT 496 **Topics** **(1-3)**

ADMINISTRATION OF JUSTICE

School of Humanities and Social Sciences

ADJU 201 **Introduction to the Administration of Justice** **(3)**
Philosophy, history and development of the American criminal justice system. Survey of the role of law enforcement agencies, the courts, jails, prisons, probation and parole in both juvenile and adult systems. Prerequisites: sophomore standing. (Fall)

ADJU 301 **Law Enforcement Procedures** **(3)**
Analysis of landmark U.S. Supreme Court cases and their impact on operating procedures of law enforcement, the courts, jails, prisons, and allied agencies. Prerequisites: ADJU 201 and junior standing, and/or consent of instructor. (Spring)

ADJU 320 **Treatment of Offenders** **(3)**
The philosophy, history and development of treatment approaches in the criminal justice system including community correctional, probation, institutional and aftercare programs. Prerequisite: ADJU 210, junior standing and/or consent of instructor. (Fall)

ADJU 395 **Independent Study** **(1-3)**

ADJU 396 **Topics** **(1-3)**

ADJU 420 **Criminal Law** **(3)**
Philosophy, history and current state of criminal law with emphasis on analysis and application of Colorado Statutes and the American Law Institute Model Penal Code. Prerequisite: ADJU 201, and junior standing. (Spring)

ADJU 424 **Probation and Parole** **(3)**
Evaluation of theories of crime and delinquency and their application to treatment approaches utilized in probation and parole. Prerequisites: ADJU 201 and junior standing.

ADJU 495 **Independent Study** **(1-3)**

ADJU 496 **Topics** **(1-3)**

ADJU 499 **Internship** **(1-4)**
Provides the student with opportunities to apply theoretical principles in a structured organizational or work environment. Student must have prior instructor and site approval at least one semester in advance of the internship. The student must complete 45 clock hours for each one hour of credit. Prerequisites: senior status in Criminal Justice, G.P.A. in Criminal Justice of 3.0, overall G.P.A. of 2.75 and consent of instructor. (Fall)

ANTHROPOLOGY

School of Humanities and Social Sciences

ANTH 201 Cultural Anthropology (3)
Basic concepts of cultural anthropology including the theoretical perspectives, social and political institutions, ceremonies, and linguistics. Cultural change and cultural destruction are also included. (Fall/Spring)

ANTH 222 World Prehistory (3)
Basic theory and method will be described. Prehistory includes human origins, Stone Age hunters, domestication of animals, the rise of agriculture and the emergence of civilizations. (Fall)

ANTH 301 The North American Indian (3)
Cultural systems of the North American Indian including ideology, revitalization political history, and contemporary conditions. Case studies of selected groups will be emphasized. Prerequisites: ANTH 201. (Fall)

ANTH 310 Qualitative Methods in Social Research (3)
Theoretical, descriptive, and instructive aspects of qualitative social research including theoretical perspectives, field journalism, participant observation, interviewing, ethics, and research design. Students will conduct and discuss brief fieldwork in the community. Prerequisite: ANTH 201. (Spring)

ANTH 330 Religion and Culture (3)
Comparison of organized beliefs in the spiritual world and their relationship to the cultures in which they are practiced. Several theoretical perspectives will be emphasized. Prerequisite: ANTH 201. (Alternate Spring)

ANTH 340 Ethnopsychology (3)
Study of indigenous theories about emotions and cognition and a functionalist analysis relating traditional healing methods to the social and psychological aspects of illness. Prerequisites: ANTH 201 and PSYC 121. (Alternate Fall)

ANTH 350 Regional Study (3)
Specific geographical region will be described. History, politics, economics, ideologies, cultural traditions, and contemporary conditions will be discussed. Prerequisites: ANTH 201. (Alternate Fall)

ANTH 360 Gender and Culture (3)
Study of culturally ascribedroles based on sex, their symbolic basis, and the functionalist and conflict theory explanations for the forces giving rise to them. Prerequisites: ANTH 201. (Alternate Spring)

ANTH 370 Applied Anthropology (3)
Study of the application of anthropological principles in a holistic approach to technological development in other cultures. Topics include sustainable development, cultural preservation, advocacy, ethical and epistemological issues. Prerequisites: ANTH 201, 310 and 350. (Alternate Fall)

ANTH 380 Anthropological Linguistics (3)
Social, psychological, and epistemological aspects of language. Critical assessment of the use of language in writing about anthropology. Corequisite: ANTH 310. Prerequisites: ANTH 201. (Alternate Fall)

ANTH 395 Independent Study (1-3)

ANTH 396 Topics (1-3)

ANTH 405 Global Systems (3)
Analyses from several perspectives of the effect of global systems on cultural change, particularly in non-state cultures. It emphasizes the significance of economy, polity, and ideology in both the global system and the non-state societies. Prerequisites: ANTH 201, 350, and 370. (Spring)

ANTH 410 **World Cultures** (3)
Study of band, tribal, chiefdom, and state societies from a variety of theoretical perspectives, also includes the study of contemporary cultural change in non-state societies. Prerequisites: ANTH 201, 310, 370 and 405. (Alternate Spring)

ANTH 495 **Independent Study** (1-3)

ANTH 496 **Topics** (1-3)

ART

School of Humanities and Social Sciences

The Mesa State College Art Department maintains and periodically displays a collection of student art work and reserves the right to retain one piece of work from each student enrolled in a studio class.

ARTE 101 **Two Dimensional Design** (3)
The principles of form and function in two dimensional design with emphasis on color theory and use. (Fee charged for some of the materials used.) One and one-half hours of lecture and three hours of studio per week. (Fall/Spring)

ARTE 102 **Three Dimensional Design** (3)
The principles of form and function in sculpture and other three dimensional design areas. (Fee charged for some of the materials used.) One and one-half hours of lecture and three hours of studio per week. (Fall/Spring)

ARTE 115 **Art Appreciation** (3)
Some of the hows, whys, and whos of painting, sculpture, and functional design in selected periods and places. (Fall/Spring)

ART SAMPLER COURSES These courses offer brief (sometimes on modular scheduling) introductions to one art medium. (2 hours studio)

ARTE130 **Fibers** (On demand) (1)

ARTE154 **Ink Drawing** (1)
Prerequisite: ARTE 151 or consent of instructor. (Spring)

ARTE 170 **Printmaking** (On demand) (1)

ARTE 192 **Pastels** (1)
Prerequisite: ARTE 151 or consent of instructor. (On demand)

ARTE 193 **Airbrush** (2)
Prerequisite: ARTE 151 or consent of instructor. (Fall/Spring)

ARTE 151 **Basic Drawing** (3)
Freehand drawing of figural and environmental subjects through perceptual exercises and common drawing media. (A model fee may be charged) Six hours of studio. (Fall/Spring)

ARTE 190 **Mixed Media** (2)
Water based media, such as ink, dye, watercolor (both transparent and opaque) acrylic and tempera are used in the creative process). Prerequisite: ARTE 151. (Fall)

ARTE 210 **Early Childhood Art** (2)
Theory and practice of art education for young children through lecture, laboratory and practice teaching culminating in resources for teaching. One hours of lecture and two hours of laboratory per week. (Fall)

ARTE 211 **Art History: Ancient-1300** (3)
A chronological study of the art and architecture of the prehistoric, ancient, and medieval worlds. (Fall)

ARTE 212 **Art History: Europe 1300-1900** (3)
Chronological study of European painting, sculpture, and architecture from the Italian Renaissance to the beginning of the Modernist Period. (Spring)

ART PROCESSES AND MEDIA

These courses introduce traditional materials of the visual arts through studio experiences with lectures on theory and history of the media. (Fee charged for some materials.) One hour of lecture and four hours of studio per week.

ARTE 221	**Metalsmithing**	**(3)**
	Prerequisite: ARTE 102 or consent of instructor. (On demand)	
ARTE 231	**Fibers**	**(3)**
	Prerequisite: ARTE 101 or consent of instructor. (On demand)	
ARTE 241	**Ceramics, Handbuilding**	**(3)**
	Prerequisite: consent of instructor. (Fall/Spring)	
ARTE 242	**Ceramics, Potters' Wheel**	**(3)**
	Prerequisite: ARTE 241 or consent of instructor. (Fall/Spring)	
ARTE 271	**Printmaking—Relief and Intaglio**	**(3)**
	Prerequisite: ARTE 101, 151 or consent of instructor. (Fall)	
ARTE 272	**Printmaking—Lithography**	**(3)**
	Prerequisite: ARTE 101, 151 or consent of instructor. (Spring)	
ARTE 281	**Sculpture—Modeling and Mold Making**	**(3)**
	Prerequisite: ARTE 102 or consent of instructor. (On demand)	
ARTE 282	**Sculpture—Foundry**	**(3)**
	Prerequisite: ARTE 102 or consent of instructor. (Fall)	
ARTE 283	**Sculpture—Carving and Construction**	**(3)**
	Prerequisite: ARTE 102 or consent of instructor.	
ARTE 284	**Ceramic Sculpture**	**(3)**
	Prerequisite: ARTE 102 or consent of instructor.	
ARTE 291	**Painting**	**(3)**
	Prerequisites: ARTE 101, 151, or consent of instructor. (Fall/Spring)	
ARTE 292	**Watercolor Painting**	**(3)**
	Prerequisites: ARTE 101, 151, or consent of instructor.	

ARTE 251 Figure Drawing (3)

Emphasis on the tradition of the human figure using contemporary concepts of composition and techniques, quality drawing tools, and surfaces. Nude models, bones, and anatomy charts as well as reproductions of the work of figurative artists are utilized. (A model fee will be charged.) One hour of lecture and four hours of studio per week. Prerequisite: ARTE 151 or consent of instructor.

ARTE 255 Visual Art Workshop (1)

Intensive study of a selected art medium. Thirty hours of studio work. (Summer)

ARTE 261 Introduction to Computer Art (3)

Basic concepts of computers as a Fine Art tool utilizing the Commodore Amiga computer. History, terminology, hardware, and hands on experience with emphasis on the creative process. Two hours lecture and two hours studio per week. Prerequisites: ARTE 101, 151 or consent of instructor. (Fall)

ARTE 300 Exhibitions and Management (2)

The business of art including art law, studio management, sales practices, presentation of art work, conservation practices, and gallery design. One hour of lecture and two hours of laboratory per week. Prerequisite: junior or senior standing. (Fall)

ARTE 315 Modernist Art History (3)

Sequence of movements and schools of art from 1850 to 1950 including conditions and influences affecting art and the work of major artists, surveyed through slides and reading. Prerequisites: ARTE 211, 212 or consent of instructor. (Fall)

ARTE 316 Post Modern Art History (3)

Art of the second half of the 20th century including conditions and influences affecting art and the work of major artists, surveyed through slides and reading. Prerequisites: ARTE 211, 212, 315 or consent of instructor. (Spring)

ADVANCED STUDIOS
Specific media to be studied in a structured class, or a general studio including a variety of media and individually contracted work. One hour of lecture and four hours of studio per week. Prerequisites: ARTE 101,102, 151,211,212, and at least three hours of the same Processes and Media at the 200 level.

ARTE 321	**Metalsmithing** Prerequisites: ARTE 151, 221. (On demand)	(3)
ARTE 341	**Pottery Production** Prerequisites: ARTE 241 or 102 and 242. (Fall/Spring)	(3)
ARTE 342	**Intermediate Ceramics** Prerequisites: ARTE 241, 242. (Fall/Spring)	(3)
ARTE 352	**Drawing** Prerequisites: ARTE 101, 251.	(3)
ARTE 371	**Printmaking** Prerequisites: ARTE 271. (Fall)	(3)
ARTE 372	**Printmaking** Prerequisites: ARTE 272. (Spring)	(3)
ARTE 381	**Sculpture—Modeling and Moldmaking** Prerequisites: ARTE 281. (On demand)	(3)
ARTE 382	**Sculpture—Foundry** Prerequisites: ARTE 282. (Fall)	(3)
ARTE 383	**Sculpture—Carving and Construction** Prerequisites: ARTE 283.	(3)
ARTE 384	**Ceramic Sculpture** Prerequisites: ARTE 284.	(3)
ARTE 391, 392	**Painting** Prerequisites: ARTE 291. (Fall/Spring)	(3,3)
ARTE 395	**Independent Study**	(1-3)
ARTE 396	**Topics (1-3)**	

ADVANCED STUDIOS
Specialized studio problems contracted by senior-level students preparing for graduate schools, culminating in a faculty examination of each student's portfolio and an exhibition of the student's work. Prerequisite: at least three hours in the same Advanced Studios at the 300 level. (6 hours studio)

ARTE 421	**Metalsmithing** Prerequisite: ARTE 321. (On demand)	(3)
ARTE 441	**Glaze Calculation** Prerequisite: ARTE 341. (On demand)	(3)
ARTE 442	**Kiln Construction** Prerequisites: ARTE 341 or 342. (On demand)	(3)
ARTE 452	**Drawing** Prerequisites: ARTE 352	(3)
ARTE 471	**Printmaking** Prerequisites: ARTE 371. (Fall)	(3)
ARTE 472	**Printmaking** Prerequisites: ARTE 372. (Spring)	(3)
ARTE 481	**Sculpture—Modeling and Moldmaking** Prerequisites: ARTE 381. (On demand)	(3)
ARTE 482	**Sculpture—Foundry** Prerequisites: ARTE 382. (Fall)	(3)
ARTE 483	**Sculpture—Carving and Construction** Prerequisites: ARTE 383.	(3)
ARTE 484	**Ceramic Sculpture** ARTE 101, 102, 151, 211, 212, 384 and at least three hours of the same process course at the 200 level.	(3)
ARTE 491, 492	**Painting** Prerequisites: ARTE 315 or 316, and 391, and 392. (Fall/Spring)	(3,3)

ARTE 455 Visual Art Workshop (1)
Advanced study of a selected art medium. Thirty hours of studio work. Prerequisite: permission of instructor. (Summer, on demand)

ARTE 494 Senior Seminar and Portfolio (3)
Capstone course with topics related to art criticism, history, aesthetics and current art developments. Preparation of portfolios and a professional resume. Students are required to take a comprehensive assessment to be compared with the test they took in basic drawing. Prerequisite: senior standing or consent of instructor. (Spring)

ARTE 495 Independent Study (1-3)

ARTE 496 Topics (1-3)

BIOLOGY

School of Natural Sciences and Mathematics

BIOL 101, 102 General Biology (2,2)
BIOL 101L, 102L General Biology Laboratory (1,1)
Ecology, pollution, drugs, sex education, disease problems, body structure and function, phylum relationships, plant growth and development. A student with a biology major will not receive graduation or general education credit for any of these courses. Two lectures and one two-hour laboratory per week. (Fall/Spring)

BIOL 105 Attributes of Living Systems (4)
BIOL 105L Attributes of Living Systems Laboratory (1)
Cell structure and function. Cell energetics and biochemistry. Ecology and evolution. Four lectures and one two-hour laboratory per week. (Fall/Spring)

BIOL 106 Principles of Animal Biology (3)
BIOL 106L Principles of Animal Biology Laboratory (2)
Broad morphological, physiological, and ecological features of principal phyla of animals and relationships between them. Three lectures and two two-hour laboratories per week. Prerequisite: BIOL 105 or consent of instructor. (Spring)

BIOL 107 Principles of Plant Biology (3)
BIOL 107L Principles of Plant Biology Laboratory (2)
Organisms traditionally assigned to the plant kingdom; bacteria, fungi, green-protists, algae, and true plants. Morphology, reproductive biology, anatomy, and phylogeny of each group. Three lectures and two two-hour laboratories per week. Prerequisite: BIOL 105 or consent of instructor. (Fall)

BIOL 113 Outdoor Survival (3)
Involves vigorous physical activity relating to survival in diverse situations including wilderness survival and survival of biological, nuclear, and chemical warfare. Excellent attendance is required. Three one-hour lectures per week, three overnight weekend field trips and several Saturday trips. (Fall)

BIOL 141 Human Anatomy and Physiology (3)
BIOL 141L Human Anatomy and Physiology Laboratory (2)
Introduction to form and function of the human body. For students in human performance and wellness, nursing, paramedical students, and biology majors. Three lectures and two two-hour laboratories per week. (Fall)

BIOL 201 Developmental Biology (4)
BIOL 201L Developmental Biology Laboratory (1)
Embryonic growth and development of plants and animals. Also errors in normal development, cancer, aging, and related topics. Four lectures and one two-hour laboratory per week. (Alternate Spring)

BIOL 202 **Cellular Biology** (3)
BIOL 202L **Cellular Biology Laboratory** (1)
Form, function, and bioenergetics of the cell. Three lectures and one two hour laboratory per week. Prerequisites: BIOL 106,107, or consent of instructor. (Spring)

BIOL 203 **Human Nutrition** (3)
Introduction to the science of the effects of food on the body and the body's need for and utilization of essential nutrients. (Fall/Spring)

BIOL 211 **Ecosystem Biology** (4)
BIOL 211L **Ecosystem Biology Laboratory** (1)
Ecological studies utilizing the concepts of population biology: energetics, dynamics, distribution, and sociology. Over-night and/or weekend field trips may be required. Four lectures and one three-hour laboratory per week. (Fall)

BIOL 221 **Plant Identification** (2)
BIOL 221L **Plant Identification Laboratory** (2)
Identification of flowering plants through the use of regional floras and recognition of common plant families. Plant collection and herbarium techniques. Two lectures and two two-hour laboratories per week. Prerequisites: BIOL 107. (Fall)

BIOL 231 **Invertebrate Zoology** (3)
BIOL 231L **Invertebrate Zoology Laboratory** (1)
Invertebrate phyla structure, physiology, classification, and life history. Work on an independent project is required. Three lectures and one two-hour laboratory per week. (Alternate Spring)

BIOL 241 **Pathophysiology** (4)
Function of the human body with emphasis on interpretation of those functions in relation to disease processes. Prerequisite: BIOL 141 or 341. (Fall)

BIOL 250 **General Microbiology** (3)
BIOL 250L **General Microbiology Laboratory** (2)
Microorganisms, especially the procaryotic bacteria; culture techniques, biochemical identification, and infectious human diseases. Three lectures and two two-hour laboratories per week. (Spring)

BIOL 301 **Principles of Genetics** (3)
BIOL 301L **Principles of Genetics Laboratory** (2)
Principles of genetics at the organismal, cellular, and molecular level dealing with the genetics of prokaryotic and eukaryotic organisms and viruses. Three lectures and two two-hour laboratories per week. Prerequisites: BIOL 105 and MATH 113; BIOL 202 recommended. (Fall)

BIOL 315 **Epidemiology** (3)
Characteristic patterns of communicable disease occurrence as related to individuals, geographic location, and time; factors affecting disease occurrence, the nature of vital statistics, sampling procedures, and study design. An independent project is required. (Alternate Fall)

BIOL 320 **Plant Systematics** (3)
Systematic botany encompassing principles of classification, nomenclature, and evaluation of current classifications of angiosperms. Prerequisites: BIOL 221. (Alternate Spring)

BIOL 321 **Taxonomy of Grasses** (2)
BIOL 321L **Taxonomy of Grasses Laboratory** (2)
A study of the grass family and grass-like plants (sedges and rushes) dealing with the evolution, classification, and identification of these plants. Two lectures and two two-hour laboratories per week. Prerequisite: BIOL 107 or consent of instructor. (Alternate Spring)

BIOL 330 **Biological Chemistry** (3)
BIOL 330L **Biological Chemistry Laboratory** (1)
Molecules and chemical reactions which are the basis of living systems with emphasis on the structure and function of proteins and the generation and storage of energy. Three lectures and one two-hour laboratory per week. Prerequisites: CHEM 121,122, or equivalent. (Alternate Spring)

BIOL 331 Insect Biology (3)
BIOL 331L Insect Biology Laboratory (1)
Insect taxonomy, structure and function, relationships, ecology, physiology, and reproduction with emphasis placed on the role of insects in the biosphere. Insect collection required. Three lectures and one two-hour laboratory per week. Prerequisites: BIOL 106. (Alternate Fall)

BIOL 341 General Physiology (3)
BIOL 341L General Physiology Laboratory (1)
Function of the circulatory, nervous, respiratory, digestive, urinary, reproductive, and endocrine systems of the human body. Three lectures and one two-hour laboratory per week. Prerequisite: BIOL 106 or consent of instructor. (Alternate Fall)

BIOL 342 Histology (2)
BIOL 342L Histology Laboratory (2)
Microscopic study of tissues and organs. Two lectures and two two-hour laboratories per week. Prerequisites: BIOL 106 or BIOL 107 and consent of instructor. (Alternate Fall)

BIOL 343 Immunology (3)
BIOL 343L Immunology Laboratory (1)
Immune system of animals with emphasis on human immune response. Includes the immune organs and both cellular and humoral responses. An independent research project is required. Three lectures and one two-hour laboratory per week. (Alternate Spring)

BIOL 387 Structured Research (1-2)
Independent research beyond the scope of the published curriculum. Designed for advanced sophomore and junior level students to participate in research activities under the direction of a specific faculty member. Prerequisites: sophomore or junior standing, or consent of instructor. (Fall/Spring)

BIOL 388 Teaching Science in the Secondary School (3)
Methods of teaching and construction of lessons and curricula. To be taken not more than two semesters before student teaching. Lesson presentation and numerous papers required. Required for secondary certification. (Spring)

BIOL 395 Independent Study (1-3)

BIOL 396 Topics (1-3)

BIOL 403 Evolution (3)
Organismal and molecular evolution emphasizing its importance as the unifying theory in biology. Evolution of natural selection on genetic structure of populations. Prerequisites: BIOL 106,107,301, and senior standing. (Spring on demand)

BIOL 411 Mammalogy (2)
BIOL 411L Mammalogy Laboratory (1)
Classification, life histories, and ecology of mammals. Overnight and/or weekend field trips may be required. Two lectures and one two-hour laboratory or three-hour field trip per week. Prerequisites: upper division standing or consent of instructor. (Alternate Fall)

BIOL 412 Ornithology (3)
BIOL 412L Ornithology Laboratory (1)
Classification and life history of birds, including field identification. Overnight and/or weekend field trips may be required. Three lectures and one two-hour laboratory or three-hour field trip per week. Prerequisite: upper division standing or permission of instructor. (Alternate Spring)

BIOL 413 Herpetology (3)
BIOL 413L Herpetology (1)
Classification, evolution, morphology and ecology of amphibians and reptiles. Overnight or weekend field trips may be required. Three lectures and one two-hour laboratory per week. Prerequisites: upper division standing or consent of instructor. (Alternate Spring)

BIOL 414 Aquatic Biology (3)
BIOL 414L Aquatic Biology Laboratory (1)
Classification, life history, and ecology of aquatic animals. Overnight and/or weekend field trips may be required. Three lectures and one two-hour laboratory or three-hour field trip per week. Prerequisite: upper division standing or permission of instructor. (Alternate Spring)

BIOL 415 Tropical Ecosystems (2)
Coral reef, rain forest, and arid desert ecosystems on Caribbean islands. Ten two-hour lectures, ten two-hour laboratories, and ten six-hour field trips conducted at the marine station and primate colony of the University of Puerto Rico. Prerequisites: one year of biological sciences and consent of instructor. (Semester break on demand)

BIOL 416 Ethology (3)
BIOL 416L Ethology Laboratory (1)
Mechanisms and evolution of behavior utilizing captive animals and field trips. Overnight field trips may be required. Three lectures and one two-hour laboratory per week and several field trips, possibly overnight. Prerequisites: BIOL 106,107, and consent of instructor. (Alternate Spring)

BIOL 421 Plant Physiology (3)
BIOL 421L Plant Physiology Laboratory (2)
Plant growth and development at the molecular and cellular level to account for plant growth at the organismic level. Three lectures and two two-hour laboratories per week. (Alternate Spring)

BIOL 423 Plant Anatomy (3)
BIOL 423L Plant Anatomy Laboratory (2)
Form, variability, and structure of the tissues comprising the body of the higher plant. Three lectures and two two-hour laboratories per week. Prerequisites: BIOL 107, 107L. (Alternate Spring)

BIOL 425 Molecular Genetics (3)
Nature and expression of genetic information at the molecular level in prokaryotic and eukaryotic organisms. Prerequisite: BIOL 301. (Alternate Spring)

BIOL 431 Animal Parasitology (3)
BIOL 431L Animal Parasitology Laboratory (1)
Common and important parasites of domestic animals and man. Ecology, epidemiology, diagnosis, and control are discussed with examples from the Protozoa, Trematoda, Cestoda, Nematoda, and Arthropoda. An independent research project is required. Three lectures and one two-hour laboratory per week. (Alternate Fall)

BIOL 441 Endocrinology (3)
BIOL 441L Endocrinology Laboratory (1)
Anatomy and physiology of the endocrine system of vertebrates. Laboratory: emphasis on normal and abnormal endocrine functions. Three lectures and one two-hour laboratory per week. Prerequisite: BIOL 106 or consent of instructor. (Alternate Fall)

BIOL 442 Pharmacology (3)
Principles underlying absorption, distribution, metabolism, and excretion of drugs with emphasis on mechanisms of action and physiological responses. Prerequisite: BIOL 141 or consent of instructor. (Alternate Spring)

BIOL 450 Mycology (2)
BIOL 450L Mycology Laboratory (2)
Fungi, with emphasis on comparative morphology and development, classification, physiology, genetics, and ecological relationships. Emphasis will also be placed on the importance of fungi in industry, agriculture, and medicine. Prerequisites: BIOL 107 or consent of instructor. (Fall)

BIOL 482 Senior Research (2)
Designed to introduce students to appropriate procedures for conducting literature reviews, designing experiments, collecting and analyzing data, and preparing written and oral presentations of such experiments. Two lectures per week or equivalent. Prerequisites: senior standing, 2.80 GPA, and consent of instructor. (Fall)

BIOL 483 Senior Thesis (2)
Students prepare an in-depth thesis elaborating on a major conceptual issue(s) in biology. The purpose of the thesis is to ascertain the student's ability to collect a broad array of information and integrate this into a logical conceptual framework that traverses organizational levels of living systems. The thesis topic must be approved by the instructor. Prerequisites: senior standing and consent of instructor. (Spring)

BIOL 487 Independent Research (2)
Designed to provide students with research experience on a topic of their choice that can be completed in one semester. A detailed report in the form of a scientific journal article must be provided to the instructor. Topic must be approved and directed by a specific faculty member. Corequisites: BIOL 397 highly recommended. Prerequisites: BIOL 482 and consent of instructor. (Spring)

BIOL 495 Independent Study (1-3)

BIOL 496 Topics (1-3)

BIOL 494 Seminar (1)
Current problems, topics, and research procedures in biological sciences and medicine. Topics announced each semester. Prerequisites: sophomore standing and consent of instructor. (Alternate Fall)

BIOL 499 Internship (2,4,6,8,10)
Work experience obtained on a job where assignments are primarily biological projects. The amount of credit award is determined by the school based on the nature of the assignment. Prerequisites: biology major, senior standing with either a 2.80 GPA in major courses, completion of BIOL 482, or consent of instructor. (Fall/Spring/ Summer)

BUSINESS

School of Professional Studies

BUGB 101 Introduction to Business (3)
American business system operations in the economy, business functions, and interrelations between the businessman and his environment. Prerequisites: Can be taken for credit only by students who have completed fewer than 15 credit hours of BUGB, ACCT, MANG, MARK, OFAD, TRAV, CISB, or FINA courses. (Fall/Spring)

BUGB 141 Business Mathematics (3)
Fundamental review of whole numbers, decimals, and fractions. Emphasis is placed on percentage applications to solving various business problems in the areas of buying and selling merchandise, inventory computations, interest computations on notes and savings, consumer credit and installment computation, home mortgage loans, and business depreciation computations. (Fall/Spring)

BUGB 211 Business Communications (3)
Development of a non-defensive, supportive, communication system effectively applied to interpersonal and written transactions within the business organization. Prerequisite: ENGW 111. (Fall/Spring)

BUGB 221 Insurance (3)
Common types of protection offered by insurance, including fire, theft, comprehensive, life, automobile, accident, and health. Emphasis on application of insurance to individuals and small business firms. (Spring)

BUGB 231 Survey of Business Law (3)
Application of law as it applies to employees and individuals not dealing with legal matters of organizations. Topics include contracts, agency law, personal property, business organizations and form, and commercial paper. Especially suited for non-business majors. Students contemplating or enrolled in a four year degree program should take BUGB 349. No credit allowed if credit already established in BUGB 351. (Spring)

BUGB 241 Income Tax (3)
Personal income tax, including filling out personal tax returns, exemptions, determining taxable income, adjustments to gross income, itemized deductions, rental income, depreciation, capital gains and losses. Not for students with an accounting emphasis. (Spring)

BUGB 249 Personal Finance (3)
Personal finance management, including income, personal budgeting, taxes, securing loans, consumer credit, insurance, buying a home, and an introduction to investment. (Spring)

BUGB 349 Legal Environment of Business (3)
Legal framework of business including foundations of the American legal system, anti-trust law, property law, contracts and sales, negotiable instruments, agency relationships, torts, labor law, international business law and the social environment of business. Prerequisites: junior or senior standing or consent of instructor. (Fall)

BUGB 351 Business Law I (3)
Contracts (formation, requirements, interpretation, discharge, and enforcement), agency law, and other contracting parties. Includes analysis of the concept of personal property and an introduction to the partnership form of ownership. Prerequisites: junior or senior standing or consent of instructor. (Fall)

BUGB 352 Business Law II (3)
Corporate form of ownership as artificial persons doing business; Uniform Commercial Code as the primary law covering sales (terms of sales contracts, product liability, performance, and breach); commercial paper (instruments used as a monetary substitute, such as checks, drafts, and promissory notes); credit (security interests in real and personal property); and real property. Prerequisite: BUGB 351 or consent of instructor. (Spring)

BUGB 393 Cooperative Education (3-12)
Cooperative Education provides students an opportunity to put their education to practical use in the workplace under the joint supervision of an employer participating in the Cooperative Education program and a faculty member designated by the institution. (See "Cooperative Education" in this catalog.)

BUGB 395 Independent Study (1-3)

BUGB 396 Topics (1-3)

BUGB 401 International Business (3)
Current international topics in the disciplines of finance, management, and marketing. Concepts, analytical tools, and models are introduced to help explain the diversity and complexity of the international business environment. Prerequisites: senior standing. (Spring)

BUGB 493 Cooperative Education (3-12)
See description of BUGB 393.

BUGB 495 Independent Study (1-3)

BUGB 496 Topics (1-3)

CHEMISTRY

School of Natural Sciences and Mathematics

CHEM 100 Chemistry and Society (3)
Introduction to selected topics in chemistry. Nonmathematical approach with frequent lecture demonstrations and particular attention to chemical technology and its impact on society. (On demand)

CHEM 121 Principles of Chemistry (4)
CHEM 121L Principles of Chemistry Lab (1)
Introduction to fundamental principles of chemistry. Designed for students planning an major in science as well as students with a non-science major. Topics include atomic structure, bonding, periodic table, gas laws, mass relationships, solution theory, oxidation-reduction, electrochemistry, and ionic equilibrium. Four lectures and one three-hour lab per week. Prerequisite: mastery of high school algebra. (Fall/Spring)

CHEM 122 Principles of Organic Chemistry (4)
CHEM 122L Principles of Organic Chemistry Laboratory (1)
Introduction to the chemical and physical properties of selected classes of organic compounds. Four lectures and one three-hour laboratory per week. Prerequisite: CHEM 121 or 131 or one year of high school chemistry and consent of instructor. (Spring)

CHEM 131, 132 General Chemistry (4,4)
CHEM 131L,132L General Chemistry Laboratory (1,1)
Fundamental principles of chemistry. Designed for students planning a major in science. Topics include atomic structure, bonding, periodic law, kinetic theory, gas laws, stoichiometry, phase relationships, solutions, oxidation-reduction, electrochemistry, and equilibrium. Four lectures and one three-hour laboratory per week. Prerequisite: one year of high school chemistry and mastery of high school algebra. (Fall/Spring)

CHEM 151 Engineering Chemistry (4)
CHEM 151L Engineering Chemistry Laboratory (1)
Selected fundamentals of inorganic chemistry. Topics include stoichiometry, periodic law, bonding, gas laws, phase relations, solutions, electrochemistry, and equilibrium. Designed for students of physics and engineering (except chemical engineering.)
Four lectures and one three-hour laboratory per week. Corequisite: MATH 113. Prerequisites: high school chemistry and satisfactory entrance examination scores or CHEM 121. (On demand)

CHEM 311, 312 Organic Chemistry (3,3)
CHEM 311L,312L Organic Chemistry Laboratory (2,2)
Chemical and physical properties of the major classes of organic compounds. Three lectures and two three-hour laboratories per week. Prerequisite: CHEM 132 or consent of instructor. (Fall/Spring)

CHEM 321 Physical Chemistry I (3)
CHEM 322 Physical Chemistry II (3)
Application of methods of physics to chemistry. Study of equilibrium properties of bulk matter, quantum theory with applications to molecular structure. Statistical mechanics used to understand the microscopic origin of thermodynamic laws. Calculations of macroscopic thermodynamic properties made from molecular properties. Connection made in kinetics between thermodynamics, quantum theory and statistical mechanics for study of time-dependent processes. Prerequisites: CHEM 132, PHYS 122 and MATH 152. (Fall/Spring)

CHEM 331 Physical Chemistry Laboratory (2)
Application of the experimental methods of physics to chemical systems. Each student chooses from a list of possible experiments or works with the instructor to develop experiments. Corequisite: CHEM 322. (Spring)

CHEM 395 Independent Study (1-3)

COMPUTER INFORMATION SYSTEMS

School of Professional Studies

CISB 101 Business Data Processing (2)
Basic concepts of computers with focus on terminology, hardware, software, and implication of computers in today's world. Business use of computers including discussion of computer security, privacy of information, future implications, purchasing computers and software, and business application. (Fall/Spring)

CISB 104 BASIC Programming (1)
Basic concepts of programming through use of BASIC language. Several BASIC programs will be written. Prerequisite: CISB 101 or equivalent. (Fall/Spring)

CISB 105 Introduction to Business Software (1)
Current business software. Electronic spread sheets, word processing, and data base software at a beginning level. (Fall/Spring)

CISB 131 COBOL Programming I (3)
Writing programs in COBOL using modern methods of top-down, structured design. Emphasis placed on traditional business applications such as payroll, accounts receivable, and inventory control. Students learn to debug and document programs. Prerequisite: CISB 104 or consent of instructor. (Fall)

CISB 205 **Advanced Business Software** (3)
Students become proficient through a combination of lecture, demonstration, and projects in the advanced use of electronic spread sheets, word processing, and data base management software. Prerequisite CISB 105, ACCT 202. (Fall/Spring)

CISB 231 **COBOL Programming II** (3)
Continuation of CISB 131 including disk, sequential, indexed sequential random processing, and use of operating system resources for systems development. Prerequisite: CISB 131. (Spring)

CISB 295 **Independent Study** (1-3)
CISB 298 **Related Work Experience** (1,2)
See ACCT 298 course description. (Fall/Spring)

CISB 321 **Assembler Language** (3)
See CSCI 321 for course description.

CISB 392 **Management Information Systems** (3)
Use of computers by management as a tool to run businesses more effectively with particular attention to the advantages of using computers in each functional area of a business, problems associated with computerized processing, and the systems approach to problem solution. An in-depth look at various types of information systems as well as the latest concepts, such as database management, decision support and end user programming, allows the student to see the practical application of a computer based information system. Appropriate for all business majors. Prerequisites: ACCT 202. (Fall/Spring)

CISB 395 **Independent Study** (1-3)

CISB 396 **Topics** (1-3)

CISB 442 **Systems Analysis and Design** (3)
Basic systems analysis tools and the procedures for conducting a systems analysis, including systems requirements, initial analysis, general feasibility study, structured analysis, detailed analysis, logical design, and the general systems proposal. Students gain practical experience through projects and/or case studies. Prerequisite: ACCT 202 and at least two programming courses or consent of instructor. (Fall)

CISB 451 **Database Administration** (3)
Covers design and implementation of a Database Management System from a non-technical viewpoint. Recommended for business students with focus on business users in the design of the DBMS, control integrity, and security. DBMS implementation will be through hands-on use of an actual DBMS. Prerequisites: CISB 105,442, ACCT 202. (Spring)

CISB 471 **Advanced Information Systems** (3)
Follows CISB 442 and will integrate management information needs, decision making criteria, and design of manager/computer interactive systems. Computerized management control systems for all major functional modules of an organization will be investigated as well as computer simulations, data base management systems, distributed processing, and structured systems development. Prerequisites: ACCT 311 or 331. (Spring)

CISB 495 **Independent Study** (1-3)

CISB 496 **Topics** (1-3)

COMPUTER SCIENCE

School of Natural Sciences and Mathematics

CSCI 100 **Computers in Our Society** (3)
The impact of computers on society and individuals; purpose and use of software integrated systems. Intended for students in disciplines outside the natural sciences and mathematics. (Fall/Spring)

CSCI 111 Computer Science I (4)
Introduction to problem solving techniques with emphasis on modularity, abstraction, analysis, and correctness of algorithm design. Using Pascal language as a tool, topics covered include the full range of data types and control structures; text and binary file I/O; procedures and functions; units; and trees stacks and lists as abstract data types. Corequisite: MATH 119 or consent of instructor. (Fall/Spring)

CSCI 112 Computer Science II (3)
Continuation of CSCI 111 with further emphasis on algorithm design and analysis, procedural abstraction, data abstraction, and quality programming style. Topics covered include dynamic allocation of variables, recursion, and various implementations of stacks, queues, trees, and lists. Prerequisites: CSCI 111.

CSCI 120 Technical Software (3)
Microcomputer software used primarily for engineering. Introduction to computer aided design, computer aided manufacturing, word processing, spread sheet, database management, and MS DOS graphics. (Fall/Spring)

CSCI 131 FORTRAN Programming (3)
CSCI 131L FORTRAN Programming Laboratory (1)
FORTRAN language emphasizing structured programming. Sub-programs, sequential files, direct access files, and FORTRAN data structures are stressed in programs written. Three lectures and two one-hour laboratories per week. Prerequisite: Math 113 or consent of instructor. (Fall/Spring)

CSCI 133 PASCAL Programming (3)
CSCI 133L PASCAL Programming Laboratory (1)
PASCAL and the concepts of structured programming. Includes programming topics and techniques such as character manipulation, arrays, modular programming, searching and sorting techniques, files and records, and data structures. Three lectures and two one-hour laboratories per week. Prerequisite: MATH 113. (Fall/Spring)

CSCI 135 COBOL Programming (3)
See CISB 131. Computer science students normally enroll in CISB 131 but are offered this course upon demand when CISB 131 is not offered. (Fall/Spring)

CSCI 241 Computer Architecture I (3)
Architecture of a representative processor and its assembly language, introduction to hardware description language, register transfers and sequence control, realization of fetch, address, branch and execute cycles, start, stop and reset the computer, interrupt and memory mapped input-output, peripherals and interfacing. Prerequisite: CSCI 112. (Fall)

CSCI 242 Computer Architecture II (3)
Computer classes and description using PMS or ISPS, description of a few commercial computers, computer arithmetic, binary/octal/hexadecimal number system, hardware for arithmetic operations including floating-point type, processor management, memory organization and schemes, input-output management, control unit and microprogramming, multi- and parallel processors. Prerequisite: CSCI 241. (Spring)

CSCI 250 Data Structures (3)
Information representation, relationships between forms of representations and processing techniques, transformation between storage media, referencing of information as related to the structure of its representation, concepts of arrays, records, files, trees, list and list structure, sorting and search techniques. Prerequisite: CSCI 112. (Fall/Spring)

CSCI 321 Assembly Language Programming (3)
Introduction to assembler, creating and executing assembly language program, organization of machine under study, data definition, addressing techniques, data movement instruction, branching instructions, flag and PSW registers, arithmetic instructions, macros and their implementation, hardware and software interrupts, storing instructions, typical applications. Prerequisites: CSCI 112. (Fall)

CSCI 330 Programming Languages (3)
Algorithmic languages, declarations, storage allocation, subroutines, co-routines, and tasks. The principles and concepts which characterize various classes of high-level, computer-programming languages are covered as well as list-processing language development and use. Analyzes strengths and weaknesses of list processors: SNOBOL, IPLV, LISP, etc. Prerequisites: CSCI 250,321. (Fall/Spring)

CSCI 335 The C Programming Language (3)
Program writing in the C language with emphasis on its capabilities and limitations. Includes scientific computations and business applications equally. Prerequisite: CSCI 112. (Spring)

CSCI 350 Software Engineering (3)
Introduction to software engineering philosophy, project planning, and requirement analysis. The course will also include software metrices, reliability, software testing, software maintenance, reusability, CASE concepts, economics and case studies. Prerequisites: CSCI 111, 112, 250. (Spring)

CSCI 373 Computer Software Systems (3)
Assembly systems, macros, I/O programming, executive systems, protection techniques, generation and maintenance, priority and scheduling techniques for batch processing. Prerequisites: CSCI 241,250. (Fall/Spring)

CSCI 380 Operations Research (3)
Methods of linear and dynamic programming, inventory and replacement models, queuing theory, game theory, PERT, CPM, and simulation. Prerequisites: MATH 152, STAT 200, CSCI 111. (Spring, odd years only)

CSCI 395 Independent Study (1-3)

CSCI 396 Topics (1-3)

CSCI 445 Computer Graphics (3)
Use of the computer to produce images; one, two, and three, dimensional graphics; algorithms and data structures for hidden lines and surfaces; shading; and reflections. Prerequisites: MATH 265 and CSCI 250. (Fall)

CSCI 450 Compiler Structure (3)
Structures and techniques used in compiler writing are discussed with emphasis on Scanners, Symbol Tables, Parsers and code generation. The front end of a recursive descent parser is written for the semester project. Error analysis and code optimization are discussed as time permits. Prerequisites: CSCI 330, 373. (Fall/Spring)

CSCI 460 Data Base Design (3)
Design and implementation of data base systems. The network, hierarchical, and relational approaches to design, and the problems of security and integrity will be discussed. Prerequisite: CSCI 450. (Fall/Spring)

CSCI 470 Operating Systems Design (3)
Aspects of computer operating system design and implementation including memory management, processor management, device management, information management and performance evaluation methods. Prerequisite: CSCI 321. (Fall/Spring)

CSCI 480 Theory of Algorithms (3)
Techniques for analyzing time and space requirements of computer algorithms. Models are set up for analysis and techniques are applied to algorithms related to sorting and searching, pattern-matching, graph problems and other selected problems. The notion of NP-hard problems is introduced and related problems are discussed. Prerequisites: MATH 152, CSCI 250. (On demand)

CSCI 482 Theory of Computation (3)
Computability and automata theory introduced. Regular expressions, finite and pushdown automata, Turing machines, grammars and their relationship to automata, Church-Turing hypothesis, incomputable and undecidable functions and equivalence of computability models are covered. Prerequisites: MATH 369, CSCI 250. (On demand)

CSCI 484 Computer Networks (3)
Topics include: hardware technology for local and long haul networks, circuit and packet switching, interface between computer and network hardware, network architectures and protocols, routing, congestion and flow problems, queuing theory, and reliability issues. Instructors may choose to implement a sample network in which case the contents may be particularized to that network.

CSCI 486 Artificial Intelligence (3)
Introduction to artificial intelligence programming with study of topics such as knowledge representation, expert systems, solution space search, non-deterministic algorithms (neural nets, genetic algorithms), etc. Programs will be written in a selected AI programming language such as Lisp or Prolog. Prerequisites: CSCI 250, MATH 369. (Alternate Spring)

CSCI 494 Seminar (1, 2)
Discussions of specialized topics by students, faculty, or visiting professors. One or two one-hour meetings per week. (Fall/Spring)

CSCI 495 Independent Study (1-3)
CSCI 496 Topics (1-3)

DEVELOPMENTAL COURSES

DEVL 090 College Study and Reading Skills (3)
Instruction in effective study skills needed in college such as note taking, test taking, critical reading, memory and concentration, time management, controlling math anxiety, examining individual learning styles, and goal setting. For students whose academic backgrounds need reinforcement.

ECONOMICS

School of Humanities and Social Sciences

ECON 201 Principles of Macroeconomics (3)
ECON 202 Principles of Microeconomics (3)
Basic concepts of economics. Courses must be taken in sequence and are not open to freshmen. (Fall/Spring)

ECON 301 Labor-Management Relations (3)
Organized labor movement, employer labor policies, collective bargaining, wages and wage regulation, social insurance, and public labor policy. Counts as management course for BBA candidate. Prerequisites: ECON 201,202, or equivalent. (Spring)

ECON 310 Money and Banking (3)
Monetary, credit, and banking systems in the United States. Counts as management course for BBA candidates. Prerequisites: ECON 201,202, or equivalent. (Fall)

ECON 312 Economic History of the United States (3)
Economic development of the United States and the nation's economic institutions from the colonial period to the present. Prerequisites: ECON 201,202 or HIST 131,132, or consent of instructor. (On demand)

ECON 320 History of Economic Ideas (3)
Development of economic analysis, thought, theories, and doctrines from the ancient world to recent times. Prerequisites: ECON 201,202, or equivalent. (Fall)

ECON 342 Intermediate Macroeconomic Theory (3)
Factors determining the level and rate of growth of GNP, the inflation rate, and the employment rate. Policies that have been (or may be) used to influence these variables, and empirical evidences on the relationships among variables are studied also. Prerequisite: ECON 201,202, or equivalent, or consent of instructor. (Fall)

ECON 343 **Intermediate Microeconomic Theory** **(3)**
Problems of resource scarcity in a market economy. Emphasis is placed on an analysis of resource allocation under different forms of competition. Covers theory of the firm, theories of market structure, efficiency, equity, and the application of public policy. Prerequisite: ECON 201,202, or equivalent, or consent of instructor. (Spring)

ECON 395 **Independent Study** **(1-3)**

ECON 396 **Topics** **(1-3)**

ECON 401 **Economic Organization and Public Policy** **(3)**
Political economy of economic organization and public policy including analysis of the structure/conduct dimensions of industry and government institutions and their effects on resource allocation, income distribution, and economic performance. Antitrust, regula tion, and other policies are treated concurrently. Counts as a management course for BBA candidates. Prerequisites: ECON 201,202 or equivalent. (Spring)

ECON 410 **Public Sector Economics** **(3)**
Political economy of government finance including analysis of the effects of government revenue and expenditure policies on resource allocation, income distribution, and economic performance. Counts as a management course for BBA candidates. Prerequisite: ECON 201,202, or equivalent. (Fall)

ECON 420 **International Economics** **(3)**
International trade theory and policy such as balance of payments analysis, international investment flows, and the position of the dollar in foreign exchange transactions. Prerequisites: ECON 201,202, or equivalent. (On demand)

ECON 495 **Independent Study** **(1-3)**

ECON 496 **Topics** **(1-3)**

EDUCATION, EARLY CHILDHOOD

School of Professional Studies

EDEC 100 **Parent Education and Preschool** **(1)**
Parenting skills in a preschool situation. Enrollment of both parent and child is required. (Fall/Spring)

EDEC 110 **Infant and Toddler Development and Curriculum** **(2)**
Curriculum for the age group 0-2 1/2 years. Places emphasis on maintaining healthful, safe environmental activities to stimulate social, language, emotional, intellectual, and physical development. Should be taken in the first semester in which a student is enrolled in the program. (Fall)

EDEC 111 **Curriculum in Early Childhood Education** **(3)**
Philosophy and theory of preschool education, including laboratory experiences for learning about children and the philosophy, goals, and operation of the nursery school. Students spend time in assigned laboratory and participate in group meetings for discussion and evaluation. (Fall/Spring)

EDEC 121 **Introduction to Early Childhood** **(2)**
The field of early childhood, including the facilities and programs offered for young children, and observation of young children at work and play. Licensing and health regulations for children's centers are considered. Should be taken in the first semester in which a student is enrolled in the program. (Fall)

EDEC 196 **Topics** **(1)**

EDEC 252 **Student Teaching** **(5)**
Practice teaching experience in licensed centers under a qualified teacher, supervised by a college instructor, with conferences and evaluations of student's progress. Prerequisite: EDEC 111. (Fall/Spring)

EDEC 260 Child-Care Center Management (3)
Record keeping, budgeting, personal relations, and administrative techniques required in the operation of a child care center. Should be taken in the final semester in which a student is enrolled in the program. (Spring)

EDEC 297 Practicum (1,2)
Supervised experience working with children in child-care and day-care settings or in the Early Childhood Education Center. Accepted by the State Department of Social Services for licensing purposes. Scheduling is flexible. Prerequisite: consent of instructor. (Fall/Spring)

EDUCATION—TEACHER CERTIFICATION

School of Professional Studies

EDUC 220 Foundations and Legal Aspects of Education (3)
An overview of history, philosophy, finance, organizational and curriculum patterns, and current and legal issues appropriate for the beginning education student. Two hours lecture per week plus five hours field experience for 10 weeks during semester. Prerequisites: Formal field experience, ENGW 111, 112, 100 hours of experience with youth and completion of California Achievement Test. (Fall/Spring)

EDUC 260 Teaching Diverse Populations (2)
Interdisciplinary course designed to acquaint students with socialization processes in pre-school through 12th grade classrooms, historically and in a changing technological society. Prerequisites: EDUC 220, PSYC 235, SPCH 102, and successful completion of all sections of the California Achievement Test. (Fall/Spring)

EDUC 311 Creative and Physical Expression for Children (3)
Facilitation of children's creative and physical expression and problem solving in music, art, drama, games, movement and dance. Prerequisites: EDUC 260 and consent of Director of Teacher Certification. (Fall/Spring)

EDUC 320 The Developing Child in the School (3)
Coursework in applied educational psychology, preprimary through 12th grade. Prerequisites: EDUC 260 and consent of Director of Teacher Certification. (Fall/Spring)

EDUC 321 Current Issues in Curriculum Development (3)
Interdisciplinary curriculum course focused on the primary components of elementary level teaching. Prerequisites: EDUC 320 and consent of Teacher Certification Program Director. (Fall/Spring)

EDUC 350 Exceptionality in the Classroom (3)
Coursework providing information about various exceptionalities which include gifted and talented, abused children, ethnicity as it relates to exceptionalities. Prerequisites: consent of Teacher Certification Program Director; EDUC 321 for elementary certification; EDUC 320 for secondary certification. (Fall/Spring/Summer)

EDUC 360 Teaching and Learning in the Secondary School (4)
Comprehensive coursework in curriculum and classroom management. Requires the consolidation of skills and theories in prerequisite courses. Prerequisites: EDUC 350 and consent of Teacher Certification Program Director. (Fall/Spring)

EDUC 370 Orientation to Educational Technology (3)
Designed to acquaint students with the role of audio-visual media and computers in preprimary and 12th grade education. One hour lecture and four hours laboratory per week. Prerequisites: consent of Teacher Certification Program Director. (Fall/Spring)

EDUC 390 The Comprehensive Elementary Language Program (4)
Designed to provide the prospective teacher with a broad, in-depth view of the reading-language program in a changing society. Three hours lecture per week and five hours field experience per week for ten weeks during semester. Prerequisites: formal field experience and consent of the Director of Teacher Certification Program. (Fall/Spring)

EDUC 395 **Independent Study** **(1-3)**

EDUC 396 **Topics** **(1-3)**

EDUC 400 **Learning Theories and Teaching Strategies in the Disciplines** **(3)**
Coursework designed to expose the prospective teacher to learning theories and their applications which are pertinent to social studies, science, and health. Corequisite: EDUC 401. Prerequisites: EDUC 321, 390, consent of Teacher Certification Program Director. (Fall/Spring)

EDUC 401 **Math Mentorship Lab** **(1)**
Working in small groups in a lab setting, prospective teachers will refine their teaching skills in mathematics. Major emphasis will be on such strategies as critical thinking, problem solving, pattern estimating, proving, cooperative groups and developing questions. Corequisites: EDUC 400. Prerequisites: MATH 105, 205. (Summer/Fall/Spring)

EDUC 405 **Reading and Writing in the Content Area** **(4)**
Coursework focused on teaching developmental writing and reading at the secondary level (middle school and high school) within the content areas. Three lecture hours per week plus five hours field experience per week for ten weeks during semester. Prerequisites: formal field experience, EDUC 350, 370, and consent of the Director of Teacher Certification Program. (Fall/Spring)

EDUC 494 **Pre-Internship Seminar** **(2)**
Placed in settings in which they may research and study teaching, preservice teachers will put to use what they have already learned about teaching and learning. One hundred hours internship. Prerequisites: completion of all coursework and consent of Teacher Certification Program Director. (Fall/Spring)

EDUC 495 **Independent Study** **(1-3)**

EDUC 496 **Topics** **(1-3)**

EDUC 497 **Practicum for Professional Educators: Elem/Sec/K-12** **(1-6)**
Designed for the practical application of previously studied theory. Credit is variable based on complexity of study agreed upon with the education adviser. Prerequisites: consent of Teacher Certification Program Director. (Fall/Spring)

EDUC 499C **Teaching Internship and Colloquium: Elementary** **(12)**
A full-time supervised teaching experience designed to allow the intern the opportunity to apply the theories and philosophies acquired in the professional education coursework. A tri-weekly colloquium is included during this 15-week experience. Prerequisites: completion of all coursework and consent of Teacher Certification Program Director. (Fall/Spring)

EDUC 499D **Teaching Internship and Colloquium: Elementary** **(6)**
Available for students who are pursuing K-12 certification: a seven and one-half week experience. Prerequisites: completion of all coursework and consent of Teacher Certification Program Director. (Fall/Spring)

EDUC 499G **Teaching Internship and Colloquium: Secondary** **(12)**
A full-time supervised teaching experience designed to allow the intern the opportunity to apply the theories and philosophies acquired in the professional education coursework. A tri-weekly colloquium is included during this 15-week experience. Prerequisites: completion of all coursework and consent of Teacher Certification Program Director. (Fall/Spring)

EDUC 499H **Teaching Internship and Colloquium: Secondary** **(6)**
Available for students who are pursuing K-12 certification: a seven and one-half week experience. Prerequisites: completion of all coursework and consent of Teacher Certification Program Director. (Fall/Spring)

ENGINEERING

School of Natural Sciences and Mathematics

ENGR 105 Basic Engineering Drawing (3)
Fundamentals of drawing including instrumental and computer aided drafting. Three lectures and two one-hour labs per week. Corequisite: CSCI 100 or 120. Prerequisites: MATH 091 or three years high school mathematics. (Fall/Spring)

ENGR 106 Computer Aided Drafting (3)
Basic principles of computer aided drafting through the development of practical drawing problems using a computer. Two one-hour lectures and two two-hour laboratories per week. Prerequisites: ENGR 105 or consent of instructor. (Spring)

ENGR 111 Engineering Graphics and Design (3)
Basic problem-solving techniques used in engineering and the sciences. Topics include graphics, modeling, experimental methods, data analysis, value judgments, design processes, and decision making in realistic engineering situations. Prerequisites: ENGT 102 or MATH 130 and ENGR 105 or equivalents. (Spring)

ENGR 131 Mapping and Technical Graphics (2)
ENGR 131L Mapping and Technical Graphics Laboratory (2)
Introduction to reading and interpreting maps and graphic documents used in technical fields. Also, students are provided with an introduction to modern concepts of surveying and data gathering methods. Prerequisites: MATH 091 or three years high school mathematics. (Fall)

ENGR 149 Introduction to Spaceflight (3)
Introduction into the science of spaceflight, primarily from a descriptive point of view with emphasis placed on obtaining understanding and appreciation of problems, rewards and excitement associated with space studies and spaceflight. Sample topics: history of spaceflight, mechanics of propulsion and of satellites, living in space, the space shuttle. Some algebra will be used. Prerequisite: MATH 113 or consent of instructor. (Spring)

ENGR 230 Topographical Surveying (2)
ENGR 230L Topographical Surveying Laboratory (1)
Fundamentals of mapmaking including the use of plane table and alidade, basic control, contour mapping, and map reading. Primarily for non-engineering students in related fields (forestry, geology, archaeology). Two lectures and one three-hour laboratory per week. Prerequisite: MATH 130 or consent of instructor. (Fall)

ENGR 231 Surveying I (2)
ENGR 231L Surveying I Laboratory (1)
Principles of surveying and mapping; familiarization with the basic instruments and their use. Includes calculations and field procedures for surveying circular, spiral, and parabolic curves and route planning. Two lectures and one three-hour laboratory per week. Prerequisite: MATH 130 or consent of instructor. (Spring)

ENGR 240 Statics (3)
Principles of statics, study of vectors, forces, couples, force systems and their resultants, force systems of equilibrium (truss analysis, flexible cables, cranes), static friction (pivot and belt), centroids, radii of gyration of areas and masses, and moments of inertia. Prerequisites: MATH 152 and PHYS 121. Corequisites: MATH 253 and PHYS 122. (Fall)

ENGR 241 Dynamics (3)
Angular and linear displacement, velocity and acceleration of particles, rigid bodies in motion, simple vibrations, applications of Newton's laws of motion and the laws of conservation of energy and momentum to solution of problems involving moving particles and rigid bodies subject to external forces. Prerequisites: ENGR 240 and MATH 253. (Spring)

ENGR 251, 252 Circuit Analysis I, II (3,3)
ENGR 251L, 252L Circuit Analysis I, II Laboratory (1,1)
Fundamental principles of electrical engineering, such as electronics, electromechanics, and instrumentation. Basic analysis techniques applied to linear, lumped parameter, and time invariant circuits. Three lectures and two one-hour laboratories per week. Prerequisite: MATH 152 and PHYS 121 with concurrent enrollment in MATH 253 and PHYS 122. (Fall/Spring)

ENGR 253 Electromechanical Devices (3)
Operating principles and analysis of electromechanical devices including transformers, motors, and generators. Prerequisite: ENGR 251. (Spring)

ENGR 255 Thermodynamics (3)
First and second laws of thermodynamics, properties of pure substances, energy in open systems, control volume, steady flow, engineering applications. Prerequisites: PHYS 122 and MATH 152, or consent of instructor. (Spring)

ENVIRONMENTAL RESTORATION

School of Natural Sciences and Mathematics

ENGS 101 Introduction to Environmental Science (2)
Impact of pollution on the earths' environment and biota. The basic scientific approach to solving environmental problems and the impact of politics upon this approach will be examined. General environmental awareness and literacy will also be emphasized. (Spring)

ENGS 110 Introduction to Environmental Restoration/Waste Management (3)
Introduction to the source, characteristics, and concerns of hazardous and radioactive materials in environmental systems. Examination of general approaches toward site assessment, risk analysis, site remediation, mine-land reclamation, and other issues pertinent to hazardous waste management. Development of environmental literacy is emphasized. (Fall)

ENGS 211 Hazardous/Radioactive Waste Management (3)
Handling, treatment, storage, disposal and minimization of hazardous/radioactive wastes. Also, provides an overview of the environmental fate of contaminants along with their potential impact on ecosystems and human health via risk assessment. Prerequisites: ENGS 110 and CHEM 121 or consent of instructor. (Fall)

ENGS 212 Environmental Health and Safety (2)
ENGS 212L Environmental Health and Safety Laboratory (1)
Examination of environmental health and safety issues, risk assessment, control strategies, and implementation. Includes basic toxicology, personal risk assessment, and meets 40-hour OSHA training requirements for working on hazardous waste sites. Requires development of a site safety plan and use of personal protective equipment. (Spring)

ENGS 213 Site Characterization (4)
ENGS 213L Site Characterization Laboratory (1)
Develop knowledge and understanding of the site characterization process, field and laboratory instrumentation, sampling procedures, data interpretation, and analytical laboratory operation and methods. Requires hands-on experience and characterization of an environmental system. Prerequisites: ENGR 131, 131L, ENGS 110, STAT 200. (Fall)

ENGS 214L OSHA Health and Safety Update (1)
Update of the 40-hour OSHA hazardous waste site certification and includes the OSHA supervisor training certification for hazardous waste sites. Prerequisites: ENGS 212L. (On demand)

ENGS 216 Site Remediation (3)
Examination of the overall remediation process. Topics include relationship of risk assessment to remediation, the overall approach towards selection and implementation of remedial technologies, available technologies and their effectiveness, and regulatory impact. Prerequisite: ENGS 211. (Spring)

ENGS 217 Environmental Law and Regulations (3)
A comprehensive course in environmental law and regulations, regulatory agencies, and how they influence the approaches to environmental restoration and waste management. Prerequisite: ENGS 110. (Spring)

ENGS 220 Introduction to Environmental Instrumentation (2)
ENGS 220L Introduction to Environmental Instrumentation Laboratory (1)
Practical aspects concerning the proper use of instrumentation commonly used in environmental assessments and for personal protection with emphasis on correct calibration procedures, routine maintenance and trouble-shooting, limitation and capabilities of instruments, applied theory of operation, quality control and data interpretation. Brief introduction to analytical methods and selection criteria. Prerequisites: ENGS 110 and CHEM 121, or consent of instructor. (Spring)

ENGS 250 Environmental Compliance (3)
Identification of specific and detailed environmental regulatory requirements for a variety of real-world situations including industrial production facilities, waste management facilities, release site cleanups, and federally funded activities. Administrative and technical aspects of achieving and maintaining environmental compliance examined. Roles played by regulators and private sector discussed. Case studies examined. Prerequisites: ENGS 217. (Fall)

ENGS 292 Capstone in Environmental Restoration (2)
Designed to evaluate and strengthen the student's knowledge of environmental restoration/waste management issues and refine communication skills. Major presentation required on a real environmental project. Employment opportunities also explored. Prerequisites: ENGS 213, 214. (Spring)

ENGS 296 Topics (1-3)

ENGS 312 Soil Properties and Characterization (3)

ENGS 312L Soil Properties and Characterization Laboratory (1)
General physical, chemical and biological properties of soils. The formation, characterization, and classification of soils will be presented. Applied discussions concerning environmental problems. Prerequisites: one semester of chemistry and biology or consent of instructor. (Fall)

ENGS 315 Disturbed Land Rehabilitation (2)
Mining techniques, other sources of land disturbances, reclamation legislation, reclamation techniques and other practical considerations. The interface of hazardous waste sites and land rehabilitation will be discussed. Prerequisites: GEOL 111 and ENGS 312 or consent of instructor. (Alternate Spring)

ENGS 395 Independent Study (1-3)

ENGS 396 Topics (1-3)

ENGS 413 Environmental Fate and Transport of Contaminants (4)
Factors influencing the transport of contaminants in the environment, how to predict its partitioning, and important parameters which can be used to diagnose its fate. Overview of environmental chemistry, physical influence, and waste properties. Usefulness and limitations of predictive models examined, along with simulation experiments. Requires use of computers. Prerequisites: ENGS 312, 312L, GEOL 415, coruputer literacy or consent of instructor. (Spring, alternate years)

ENGS 420 Environmental Instrumentation and Analytical Methods (3)
ENGS 420L Environmental Instrumentation and Analytical Methods Laboratory (3)
Examination of analytical instrumentation and methods used to characterize environmental systems; fundamental theory of operation, limitations, and applicability of analytical instrumentation and methods. Emphases on data interpretation, regulatory implications and QA/QC concepts. Prerequisites: CHEM 132, 311, STAT 200 or consent of instructor. (Spring)

ENGS 492 Capstone in Environmental Restoration/Waste Management (2)
Current environmental restoration/waste management issues. Refinement of students' communication skills. Intended to broaden students' perspectives and knowledge using guest speakers and class discussions. Requires independent study to be presented in class. Prerequisites: senior standing or consent of instructor. (Spring)

ENGS 495 **Independent Study** (1-3)

ENGS 496 **Topics** (1-3)

ENGS 499 **Internship** (5)
Work experience on a job directly related to environmental restoration projects or hazardous waste management. Requires a term paper, oral presentation describing the experience and at least 225 contact hours. Prerequisites: junior or senior standing in the Environmental Restoration/Waste Management program or consent of instructor. (On demand)

ENGLISH

School of Humanities and Social Sciences

ENGL 086, 087 **Vocational Communications I, II** (3,3)
For students enrolled in Industry and Technology programs; emphasizes business communications, and meets requirements for the AAS degree. (Fall/Spring)

ENGL 090 **Basic Writing** (3)
For students who need more background for formal college writing. Basic writing skills including grammar, punctuation, and the writing of paragraphs and short essays. (Fall/Spring/Summer)

ENGL 091, 092, 093 English Skills (Modular Concept)
For students who have specific deficiencies in one or more of the following: (On demand)

ENGL 091	Basic Grammar (Module 1)	(1)
ENGL 092	The Sentence (Module 2)	(1)
ENGL 093	Punctuation (Module 3)	(1)

ENGL 111 **English Composition** (3)
Effective ways to communicate ideas through writing clear, concise, and well-planned papers. Prerequisite: Students will be expected to write an acceptable entrance exam and may be asked to take ENGL 090 if they cannot do so. (Fall/Spring)

ENGL 112 **English Composition** (3)
Theory and strategy of research, critical writing, and literature. Prerequisite: ENGL 111. (Fall/Spring)

ENGL 115 **Technical Writing** (3)
Experience with writing which students may encounter in technical professions, requiring the traditional research paper, a technical report, graph with text, questionnaire, description or definition, application letter and resume, and technical speech. Prerequisite: ENGL 111. (Fall/Spring)

ENGL 121 **English Spelling/Vocabulary** (3)
Spelling improvement based on 600 most commonly misspelled words. Basic rules, pronunciation, and vocabulary with particular attention given to Greek and Latin roots, prefixes, and suffixes. (Spring)

ENGL 129 **Honors English** (3)
Designed to fulfill the composition requirements (English 111 and 112) for baccalaureate students whose ACT or SAT scores are high and whose writing skills are good. Permission is required to enroll. Readings in literature serve as the basis for writing persuasive essays, research papers, and critical analyses. (Fall/Spring)

ENGL 131 **Survey of Western World Literature I** (3)
Major works of Western literature from Classical periods. (Fall)

ENGL 132 **Survey of Western World Literature II** (3)
Major works of Western literature from the Renaissance. (Spring)

ENGL 133 **Survey of Western World Literature III** (3)
Major works of Western literature from the Post-Renaissance period. (Fall/Spring)

ENGL 145 **Oriental Literature** (3)
Prose, poetry, and plays of early India, China, and Japan. (Spring)

ENGL 150 Introduction to Literature (3)
Study of short stories, novel, essays, and poetry. (Fall/Spring)

ENGL 222 Mythology (Classical) (3)
Basic myths of the Greeks and Romans, the cultures that produced them, and modern concepts of the Classical tradition. (Fall/Spring)

ENGL 240 Children's Literature (3)
History of children's literature. A survey of contemporary authors and illustrators of picture books, stories, and poetry, and the criteria to evaluate literature for pre-school through early elementary ages. (Fall)

ENGL 251 Creative Writing: Formulas in Fiction (3)
Focus on techniques for managing plot and creating action, dialogue, interchange, conflict, and characterization. (Fall)

ENGL 252 Creative Writing: Style in Fiction (3)
Techniques for improving stylistic control of prose. (Spring)

ENGL 253 Creative Writing: Poetry (3)
Students will produce and critique original poetry in conjunction with close examination of contemporary poetry and its techniques. (On demand)

ENGL 254 Survey of English Literature I (3)
English literature from its beginnings, including major works and writers, through the early 18th century. (Fall)

ENGL 255 Survey of English Literature II (3)
English literature, including major writers and works from mid-18th century to present day. (Spring)

ENGL 261 Survey of American Literature I (3)
Beginning with the Puritans and writers of the Revolution as a background to the works of the Romantics and Transcendentalists such as Bryant, Irving, Cooper, Poe, Melville, Emerson, Thoreau, Longfellow, and Whitman. (Fall)

ENGL 262 Survey of American Literature II (3)
Principal modern authors such as Dickinson, Clemens, Crane, Frost, Sandburg, Anderson, Lewis, Eliot, Faulkner, Hemingway, and Stevens. (Spring)

ENGL 285 Expository and Persuasive Writing (3)
Analyses of and practice in expository and persuasive writing, with emphasis on style, structure, organization and audience. Focuses on writing professional, academic and/or political essays. (Fall)

ENGL 301 Classical Greek and Latin Literature (3)
Readings in English of outstanding Greek and Roman authors, exploring major classical genres and emphasizing the development of epic, comedy, tragedy, and lyric poetry against the background of Greek history, philosophy, and religion. Prerequisites: 100 or 200 level literature course. (Alternate Spring)

ENGL 311 English Medieval Literature (3)
Major works of the medieval period including Chaucer. Prerequisites: 100 or 200 level literature course. (Alternate Fall)

ENGL 313 English Renaissance Literature (3)
Major writers of the seventeenth century, emphasizing Milton, including the metaphysical and caroline poets. Prerequisites: 100 or 200 level literature course. (Alternate Spring)

ENGL 315 American Romanticism (3)
Major writers from the Romantic Age of America. Prerequisites: 100 or 200 level literature course. (Alternate Spring)

ENGL 316 American Realism and Naturalism (3)
Distinctive American novels from the beginning of Realism and Naturalism to the present. Prerequisites: 100 or 200 level literature course. (Alternate Fall)

ENGL 335 The Bible as Literature (3)
The Old Testament as a literary masterpiece. (Fall)

ENGL 355 Shakespeare I (3)
Early and mature plays, including genres of comedy, history, tragedy, and romance, emphasizing close textual reading in conjunction with cultural and intellectual contexts.

ENGL 365 Adolescent Literature (3)
Past and present adolescent literature including analysis of fiction, non- fiction, drama, and poetry, with a focus on contemporary themes, issues, and trends. (Spring)

ENGL 385 Advanced Technical Writing (3)
Writing for the technical world including computer writing. Prerequisites: ENGL 112 or ENGL 115. (Alternate Spring)

ENGL 386 Roots of Modern Rhetoric (3)
A survey of the history of rhetoric from classical Greece to the present with emphasis on the Greco-Roman tradition. Prerequisites: 200 level writing course. (Alternate Fall)

ENGL 395 Independent Study (1-3)

ENGL 396 Topics (1-3)

ENGL 415 American Folklore (3)
American folklore with an emphasis on collecting Colorado and especially Western Colorado lore. (Alternate Fall)

ENGL 421 History of Literary Criticism (3)
Development of literary criticism from the Classical period through the 19th Century, emphasizing the relationship between criticism and tradition in developing the art and substance of Western literature. (Spring)

ENGL 423 Short Story (3)
History and examples of short stories which reveal the development of plot, setting, character, symbol, point of view, theme, humor, satire, and fantasy. Prerequisites: 100 or 200 level literature course. (Spring)

ENGL 424 Literature and Science (3)
Literature's relationship with science affecting the fine arts, social thought, and human value. (On Demand)

ENGL 435 20th Century American Literature (3)
Major works from 20th Century American writers. Prerequisites: 100 or 200 level literature course. (Alternate Spring)

ENGL 440 History of the English Language (3)
Historical development of the English language; its internal formation as shaped by external political, social, and intellectual forces. Indo-European roots and the Germanic, Norman, French, and Latin influences are considered. (Fall)

ENGL 451 Structure of the English Language (3)
Study of modern English through the use of structural techniques and linguistic principles. Prerequisites: Junior or senior standing or consent of the instructor. (Fall)

ENGL 455 Methods of Teaching English (3)
Theory and practice of teaching English in the junior and senior high schools; current techniques, materials, and media for the teaching of composition, literature, and the English language. Prerequisite: senior standing in the teacher certification program. (Spring)

ENGL 470 18th Century British Literature (3)
Conceptual framework of the Enlightenment in England's representative essayists, poets, novelists, and playwrights: Goldsmith, Wycherley, Dryden, Congreve, Steele, Sheridan, Gay, Pope, Swift, Defoe, and Johnson. Prerequisites: 100 or 200 level literature course. (Alternate Fall)

ENGL 471 British Romanticism (3)
Humanity's deepest personal feelings as expressed by writers attempting to discover a higher reality than that offered by materialism or rationalism. Authors represented are Blake, Coleridge, Wordsworth, Byron, Shelley, and Keats. Prerequisites: 100 or 200 level literature course. (Alternate Spring)

ENGL 475 Victorian Literature (3)
Nineteenth century British literature based upon representative works of major poets, novelists, and prose writers. Prerequisites: 100 or 200 level literature course. (Alternate Fall)

ENGL 478 20th Century British Literature (3)
Major works from 20th Century British writers. Prerequisites: 100 or 200 level literature class. (Alternate Spring)

ENGL 492 Advanced Writing (3)
Professional writing of fiction, non-fiction, and analysis through the roles of writer-as-artist, scholar, freelancer, editor, book reviewer, and critic. Prerequisites: 200 level writing course. (Fall/Spring)

ENGL 494 Seminar in Literature (3)
Requiring an evaluation of an important literary work or works and requiring students to interpret, analyze, criticize, and present research. Prerequisites: senior standing, consent of instructor. (Fall/Spring)

ENGL 495 Independent Study (1-3)

ENGL 496 Topics (1-3)

FINANCE

School of Professional Studies

FINA 338 Fundamentals of Investments (3)
Analytical approach to the investment environment, valuation of equity securities, portfolio theory and the analysis of investments other than equity securities. Prerequisite: MATH 121; junior standing or consent of instructor. (Fall)

FINA 339 Managerial Finance (3)
Acquisition, allocation, and management of funds within the business enterprise. Financial goals, funds flow, valuation, capital budgeting, and financing strategies. Prerequisites: ACCT 202, MATH 121, STAT 214. (Fall)

FINA 395 Independent Study (1-3)

FINA 396 Topics (1-3)

FINA 439 Problems in Managerial Finance (3)
Case studies and readings in financial management involving concepts, practices and techniques introduced and developed in FINA 339. Prerequisite: FINA 339. (Spring)

FINA 441 Theory of Financial Management (3)
Financial theory pertaining to capital structure, dividend policy, valuation, cost of capital, and capital budgeting. Prerequisite: FINA 339. (Spring)

FINA 495 Independent Study (1-3)
FINA 496 Topics (1-3)

FINE ARTS

School of Humanities and Social Sciences

FINE 101 Man Creates (3)
An interdisciplinary survey of human creative efforts as they relate to each other. Art, drama, and music are compared with similarities stressed. (Fall/Spring)

FINE 395 **Independent Study** (1-3)

FINE 396 **Topics** (1-3)

FINE 494 **Seminar in Critical Analysis of the Arts** (3)
Theory and practice of arts criticism. (Fall)

FINE 495 **Independent Study** (1-3)

FINE 496 **Topics** (1-3)

FINE 499 **Internship** (8,15)
Part or full-time work in various aspects of arts management. Sites may include galleries, musical, theatrical or other performing organizations, arts centers, or other situations that meet the instructor's approval. Half-time equals eight semester hours credit; full-time equals 15 semester hours credit. Prerequisite: junior standing in visual or performing arts. May also require selected courses in business, social science, etc. as appropriate to the internship sought. (Summer/Fall/Spring)

FOREIGN LANGUAGES

School of Humanities and Social Sciences

FRENCH

FLAF 111 **First-Year French I** (3)
FLAF 112 **First-Year French II** (3)
Introduction to the French language and culture. (Fall/Spring)

FLAF 251 **Second-Year French** (3)
FLAF 252 **Second-Year French II** (3)
Grammar review, vocabulary distinction, and readings in the French language. Prerequisites: two years of high school French, FLAF 111 and 112, or consent of instructor. (On demand)

GERMAN

FLAG 111 **First-Year German I** (3)
FLAG 112 **First-Year German II** (3)
Introduction to the German language. (Fall/Spring)

FLAG 251 **Second-Year German I** (3)
FLAG 252 **Second-Year German II** (3)
Grammar review, vocabulary distinction, and readings in the German language. Prerequisites: two years of high school German, FLAG 111 and 112, or consent of instructor. (On demand)

FLAG 290 **Special Studies: German** (1,2)
Study beyond the scope of the existing curriculum.

SPANISH

FLAS 111 **First-Year Spanish I** (3)
FLAS 112 **First-Year Spanish II** (3)
Basic competency in understanding, speaking, reading, and writing. (Fall/Spring)

FLAS 114 **Conversational Spanish I** (3)
FLAS 115 **Conversational Spanish II** (3)
A beginning level class for adult students who wish to develop a basic vocabulary for speaking and understanding Spanish socially, on the job or south of the border. (Fall/Spring)

FLAS 117 **Career Spanish I** (3)
FLAS 118 **Career Spanish II** (3)
For students with or without prior knowledge of Spanish who wish to speak and understand the vocabulary and phrases most frequently encountered in the fields of air transportation, agriculture, automotive services, business, child care, education, engineering, geology, hotel, motel, restaurant and resort management, law enforcement, pre-dentistry, nursing, pre-medicine, ranching, retail sales, social work, and travel, recreation, and hospitality management. (Fall/Spring)

FLAS 251 **Second-Year Spanish I** (3)
FLAS 252 **Second-Year Spanish II** (3)
Reinforces and expands the four basic language skills developed in the first- year course and provides exposure to a wider variety of cultural materials and situations. Prerequisites: two years of high school Spanish, FLAS 111 and 112, or consent of instructor. (Fall/Spring)

FLAS 311 **Third-Year Spanish I** (3)
FLAS 312 **Third-Year Spanish II** (3)
Continuation of the study of Spanish with emphasis on improving speaking, reading, and writing skills. Reading content will include the literature, culture and history of Spain. Prerequisites: FLAS 251 and 252 or consent of instructor.

OTHER LANGUAGES

FLAV 290, 390 **Special Studies In Foreign Languages** (1,2,3)
These courses are currently offered through Outreach: Ancient Greek, Latin, Advanced French, German, Spanish and other Classical and Modern Languages as permitted by interest and instructor availability.

FLAV 395 **Independent Study** (1-3)

FLAV 396 **Topics** (1-3)

FLAV 495 **Independent Study** (1-3)

FLAV 496 **Topics** (1-3)

GEOGRAPHY

School of Humanities and Social Sciences

GEOG 103 **World Regional Geography** (3)
Survey of world geography by major world regions including an analysis of the physical elements, the inhabitants, and human occupancy patterns and an evaluation of the potential of teach region for sustaining human populations. (Fall/Spring)

GEOLOGY

School of Natural Sciences and Mathematics

GEOL 100 **Survey of Earth Science** (3)
Physical makeup of the earth, its history, and geology. One field trip is required. Intended for students with majors other than one of the sciences. (Fall/Spring)

GEOL 103 **Weather and Climate** (3)
Non-mathematical introduction to elements of local and global weather: the atmosphere, cloud formation, precipitation, seasons, optical phenomena and violent storms. Students practice making 24-hour weather forecasts. (Fall)

GEOL 105 **Geology of Colorado** (3)
Introduction to minerals, rocks, geologic time scale and basic geologic terms, followed by geology of Colorado taught with the aid of movies and slides. A one-day field trip is required. (Fall/Spring)

GEOL 111 **Principles of Physical Geology** **(3)**
GEOL 111L **Principles of Physical Geology Laboratory** **(1)**
Materials that make up the earth and surface and interior processes that interact to produce the present features of the earth. Laboratory: minerals, rocks, topographic maps, earthquakes, and landforms. Four lectures and one two-hour laboratory per week. (Fall/Spring)

GEOL 112 **Principles of Historical Geology** **(3)**
GEOL 112L **Principles of Historical Geology Laboratory** **(1)**
Origin of the earth and life, changes recorded in rocks and fossils using the geologic time scale and techniques of dating to place events in sequence. @CD3:Laboratory: topographic and geologic maps, hand samples of rocks, reconstruction exercises, and fossils to interpret regional and general geologic history. One all-day field trip is required. Four lectures and one two-hour laboratory per week. Prerequisite: GEOL 111 or consent of instructor. (Spring)

GEOL 202 **Introduction to Field Studies** **(3)**
Mapping of several small areas using plane table and alidade, transit, and pace and compass methods. Profiles, cross-sections, and maps are prepared. Three lectures per week and some unscheduled time is required to do mapping projects. Prerequisite: consent of instructor. (Spring)

GEOL 203 **Introduction to Environmental Geology** **(3)**
Relationship of man to the geological environment through consideration of population, pollution, waste disposal, resource depletion, land use, governmental policy and natural hazards. One field trip required. (Fall/Spring)

GEOL 301 **Earth Tectonics** **(3)**
GEOL 301L **Earth Tectonic Laboratory** **(1)**
Descriptive geometry, occurrences of rock structures, principles of rock deformation, and origin of stresses. Laboratory: stereographic and graphical solution of structural problems, the study of maps and cross sections, and some field problems. Three lectures and one two-hour laboratory per week. Prerequisites: GEOL 111 and Math 130. (Fall)

GEOL 325 **Introduction to Engineering Geology** **(3)**
Geologic principles applied to construction problems; case histories of major projects. Field trips and term project required. Prerequisite: GEOL 111 or consent of instructor. (On demand)

GEOL 331 **Mineral Studies** **(3)**
GEOL 331L **Mineral Studies Laboratory** **(1)**
Morphology and classification of crystals; chemistry and genesis of minerals. Laboratory: identification of minerals and crystals by spectroscope, X-ray diffraction, and hand specimens. Three lectures and one two-hour laboratory per week. Prerequisite: CHEM 131 or consent of instructor. (Fall)

GEOL 333 **Geology of the Grand Canyon** **(1)**
Three two-hour evening lectures with films and slides used to preview the Grand Canyon and surrounding area. A strenuous backpacking trip is required to the bottom and out of the canyon. Prerequisites: GEOL 100, 105 or 112. (Spring break/on demand)

GEOL 340 **Petrology** **(3)**
GEOL 340L **Petrology Laboratory** **(1)**
Origin, composition, and classification of igneous, sedimentary, and metamorphic rocks. Laboratory: identification of rocks in hand specimens and some thin sections, and some analytical techniques. Three lectures and one two-hour laboratory per week. Prerequisite: GEOL 331. (Spring)

GEOL 351 **Applied Geochemistry** **(3)**
Geochemistry and its relationship to weathering and soils, geochemical surveys and prospecting techniques, reactions of contaminants with earth materials, and methods of reducing environmental degradation. Prerequisites: GEOL 111, 111L, CHEM 121, 121L, 122 and 122L. (On demand)

GEOL 359 **Non-Metallic Mineral Deposits** **(3)**
Origin, location, and economics of non-metallic geologic commodities, including phosphates, evaporites, oil, gas, coal, and sedimentary uranium deposits. Students give oral and written reports on two localities. Prerequisites: CHEM 131,131L,132,132L, or consent of instructor. (Alternate Spring)

GEOL 361 Metallic Mineral Deposits (3)
Ore genesis, mineral associations, alterations, residual deposits, and placer deposits of minerals. Students give oral and written reports on two deposits. Prerequisites: GEOL 331,331L, CHEM 131, 131L, 132, 132L or consent of instructor. (Alternate Spring)

GEOL 380 Field Studies (6)
Techniques used by the field geologist including section measuring, use of aerial photographs, plane table and alidade, and collection of samples. Data used to prepare geologic maps and reports. Students will camp out approximately three weeks during this course. Five eight-hour days per week. Prerequisites: GEOL 111,112,301,331,340. (Summer, alternate years)

GEOL 390 Computer Applications in Geology (3)
Quantitative methods of geologic data analysis with the data manipulated on the computer. Methodical approach with limited theoretical emphasis; statistical concepts; special programs for graphical presentation and analysis. Three lectures per week and computer laboratory time to complete exercises are required. Prerequisite: GEOL 111, 111L, 112, 112L, or consent or instructor. (Fall)

GEOL 395 Independent Study (1-3)

GEOL 396 Topics (1-3)

GEOL 402 Applications of Geomorphology (3)
GEOL 402L Applications of Geomorphology Laboratory (1)
Knowledge of landform genesis and shaping processes is applied to solve modern problems with emphasis on local soils, slopes, rivers, erosional surfaces, and structural framework. Laboratory and field studies used to explore frost, running water, slope movement, ground water, wind, and glaciers which have affected the local environment. Practical techniques of measurement and interpretation, including statistical and computer techniques, used to produce models of landscape development. A term project must be completed. Two major field trips are required. Four lectures and one two-hour laboratory per week. Prerequisite: consent of instructor. (Fall)

GEOL 404 Geophysical Prospecting (3)
GEOL 404L Geophysical Prospecting Laboratory (1)
Exploration for mineral and petroleum deposits and preliminary environmental investigation of sites for engineering projects with emphasis on refraction and reflection seismic, gravity, magnetic, electrical, and radioactive methods. Laboratory: interpretation of data and field trips. Four lectures and one two-hour laboratory per week. Prerequisites: GEOL 111,112, PHYS 112 (calculus is recommended but not required) or consent of instructor. (Fall)

GEOL 405 Solid Earth Geophysics (3)
Classical physics applied to the study of the earth with emphasis on the origin of the earth, its gravitational, geomagnetic, and geothermal characteristics, seismicity, the dynamics of the earth's crust, plate tectonics, and continental drift. One field trip required. Prerequisites: GEOL 404 or consent of instructor. (On demand)

GEOL 411 Paleontology (3)
GEOL 411L Paleontology Laboratory (1)
Taxonomy, morphology, ecology, and geologic range of most groups of invertebrate fossils. Laboratory: field identifications of guide fossils. A one-day field trip is required. Two lectures and one two-hour laboratory per week. Prerequisite: beginning Biology course or consent of instructor. (Spring)

GEOL 415 Introduction to Ground Water (3)
Relationships of ground water to other water sources, hydrologic cycle, water balance, hydrologic characteristics of rocks, hydraulics and equations defining flow, ground water quality, and contamination, exploration and measurement techniques (including geophysical procedures), state and federal regulations, and computer modeling. Prerequisites: GEOL 111, 111L, MATH 130, and at least high school level biology, chemistry and physics. (Spring)

GEOL 444 **Stratigraphy and Sedimentation** (3)
GEOL 444L **Stratigraphy and Sedimentation Laboratory** (1)
Sequences of sedimentary rocks with emphasis on rock classification and the correlation between the local section and nearby areas, including the Grand Canyon. Sedimentary environments are stressed. Laboratory: field identification of sedimentary rocks using laboratory samples and local outcrops. Two one-day field trips are taken. Three lectures and one two-hour laboratory per week. (Fall)

GEOL 476 **Optical Mineralogy and Petrography** (2)
GEOL 476L **Optical Mineralogy and Petrography Laboratory** (2)
Theories and principles of optical mineralogy and the microscope descriptions of rocks are applied to their classifications. Laboratory: study of thin sections. Two lectures and two two-hour laboratories per week. Prerequisites: GEOL 331,340, PHYS 112. (On demand)

GEOL 490 **Seminar** (3)
Well logging techniques and characteristics of well logs; recent developments, concepts, and theories relating to petroleum, mineral deposits, tectonics; and other topics of current interest are discussed by students in a seminar setting. Prerequisites: upper division standing and consent of instructor. (Spring)

GEOL 495 **Independent Study** (1-3)

GEOL 496 **Topics** (1-3)

HISTORY

School of Humanities and Social Sciences

HIST 101, 102 **Western Civilizations** (3,3)
Political, social, economic, and cultural history of Western mankind from ancient times to modern times. (Fall/Spring)

HIST 131, 132 **United States History** (3,3)
History of the United States from Colonial period to modern times. (Fall/Spring)

HIST 136 **Introduction to the Afro-American Experience** (3)
Afro-American experience from beginnings in Africa to the present. (On demand)

HIST 137 **Introduction to the Chicano Experience** (3)
Spanish and Indian backgrounds and the social, cultural, economic, and political roles of Chicanos in the United States since 1848. (On demand)

HIST 301 **History of England Since 1485** (3)
England, Great Britain and the Empire/Commonwealth from the first Tudor to the present. Prerequisites: HIST 101, 102. (On demand)

HIST 304 **History of Colorado** (3)
History of the state from pre-historic to modern times. (Fall/Spring)

HIST 306 **History of South and Southeast Asia** (3)
History of those areas of Asia within the influence of Indic Civilization, with emphasis on the roles of Hindu, Buddhist, and Muslim religions. Prerequisites: HIST 101, 102. (On demand)

HIST 310 **Latin American Civilization** (3)
Historical development of Latin America from pre-Columbian times to the present. Prerequisite: HIST 102 or consent of the instructor. (Fall)

HIST 315 **American Indian History** (3)
American Indian history from pre-Columbian America to the present with an emphasis on federal Indian policy. Case studies will also address the adaptation of Indian people to changing social and economic conditions. Prerequisites: HIST 131 and 132. (Fall)

HIST 320 **The American West** (3)
The American West from pre-Columbian times through the Twentieth Century with special emphasis on the diverse cultures and ecological factors which have defined the region. Prerequisites: HIST 131,132, or consent of instructor. (Fall)

HIST 330 History of 19th Century Europe (3)
Political, social, intellectual, and diplomatic forces operating in Europe between the French Revolution and World War I. Prerequisites: HIST 101, 102. (Spring)

HIST 331 The 20th Century (3)
Investigation of the development of our modern world since World War I with emphasis on Europe and its role in that process. Prerequisites: HIST 101, 102 or consent of the instructor. (Fall)

HIST 332 History of Modern Warfare (3)
War, its causes, consequences, and impact on history from the 18th century to the present. Prerequisites: HIST 101, 102. (Fall)

HIST 340 History of the Islamic World (3)
The origins, spread, and influence of the Islamic world, including the Middle East and North Africa with emphasis on its position in modern world affairs. Prerequisites: HIST 101,102. Prerequisites: HIST 101, 102. (Spring)

HIST 342 The Age of Jefferson and Jackson (3)
The social and intellectual developments in America from 1800-1850 with special emphasis on the influences of Presidents Thomas Jefferson and Andrew Jackson. Prerequisites: HIST 131,132, or consent of instructor. (Fall)

HIST 344 The Age of Industry in America (3)
The social, intellectual, and political events in the United States from the end of the Civil War to the beginning of the Great Depression. Prerequisites: HIST 131,132, or consent of instructor. (Fall)

HIST 346 History of Modern America (3)
The social, intellectual, and political events in the United States from the Great Depression to the present. Prerequisites: HIST 131,132, or consent of instructor. (Spring)

HIST 395 Independent Study (1-3)

HIST 396 Topics (1-3)

HIST 400 The Soviet Union and Eastern Europe (3)
Imperial Russia, the Soviet Union, and Eastern Europe from 1900 to the present. Prerequisite: HIST 101, 102 or consent of instructor. (Spring)

HIST 401 East Asia: The Formative Period (3)
China, Japan, Korea, and Vietnam before the coming of the West. Prerequisites: HIST 101, 102. (Fall)

HIST 403 East Asia and the Modern World (3)
China, Japan, Korea, and Vietnam since 1840. Prerequisite: consent of instructor. Prerequisites: HIST 101, 102. (Spring)

HIST 404 Introduction to Historical Research (3)
History-specific research with emphasis on utilization of primary documents and practice in conducting research and reporting results. Prerequisite: twelve hours college history courses or consent of instructor. (Fall)

HIST 405 Introduction to Public History (3)
Exploration of non-academic historical skills employed in museum work, archival management, and positions with historical societies and historic preservation agencies. Career opportunities will be examined. Prerequisites: HIST 131, 132, or consent of instructor. (Spring, alternate years)

HIST 410 Environmental History of the U.S. (3)
The evolution of public attitudes and governmental policies and practices relative to the wilderness, natural-resource development, and the natural environment from colonial times to the present. Prerequisites: HIST 131,132, or consent of instructor. (Spring)

HIST 420 Civil War and Reconstruction (3)
The causes and outcomes of the American Civil War and Reconstruction periods. Prerequisites: HIST 131,132, or consent of instructor. (Spring)

HIST 430 **The Ancient Mediterranean World** **(3)**
The Mediterranean world from pre-classical times to the fall of the Roman Empire. Prerequisites: HIST 101,102, or consent of instructor. (Fall)

HIST 495 **Independent Study** **(1-3)**

HIST 496 **Topics** **(1-3)**

HUMAN PERFORMANCE AND WELLNESS

School of Professional Studies

ACADEMIC

HPWA 100 **Health and Wellness** **(1)**
The presentation of information concerning the benefits, positive effects, assessment, and implementation of healthy life styles. (Fall/Spring)

HPWA 157 **Repertory Dance** **(1)**
Student participation in the production of dance work supervised by faculty or guest artist. Students must audition. Corequisite: One dance technique class. (Fall/Spring)

HPWA 170 **Theory and Practice Modern Dance** **(1)**
Theory and practice of modern dance. Prerequisites: HPWE 170 or consent of instructor. (Fall/Spring)

HPWA 175 **Theory and Practice Modern Jazz Dance** **(1)**
Intermediate principles of Modern Jazz Dance including theory and technique. Prerequisites: HPWE 175 or consent of instructor. (Spring)

HPWA 176 **Theory and Practice Ballet** **(1)**
Theory and practice of ballet. Prerequisites: HPWE 176 or consent of instructor. (Fall)

HPWA 200 **Introduction to Human Performance and Wellness** **(2)**
An orientation to the breadth, scope, nature, and history of the professional program in human performance and wellness. (Fall)

The following series of courses is designed to acquaint prospective physical educators and recreators with the skills, instructional procedures, techniques, progressions and officiating of selected sports normally taught in the public schools and played in recreational facilities.

HPWA 210 **Methods of Archery** (On demand) **(1)**
Prerequisite: HPWE 119 or consent of instructor.

HPWA 213 **Methods of Physical Fitness** (Spring) **(1)**
Prerequisite: HWPA 100

HPWA 215 **Methods of Softball** (Alternate spring) **(1)**
Prerequisite: HPWE 152 or consent of instructor.

HPWA 216 **Methods of Flag Football** (Alternate fall) **(1)**
Prerequisite: HPWE 166 or consent of instructor.

HPWA 217 **Methods of Handball and Racquetball** (Alternate fall) **(1)**
Prerequisite: HPWE 123 or consent of instructor.

HPWA 219 **Methods of Ballroom Dancing** (Alternate fall) **(2)**

HPWA 220 **Methods of Folk and Square Dance** (Alternate fall) **(2)**

HPWA 222 **Methods of Basketball** (Alternate fall) **(1)**
Prerequisite: HPWE 164 or 165 or consent of instructor.

HPWA 223 **Methods of Volleyball** (Alternate fall) **(1)**
Prerequisite: HPWE 162 or 163 or consent of instructor.

HPWA 224 **Methods of Golf** (Alternate spring) **(1)**
Prerequisite: HPWE 115 or 116 or consent of instructor.

HPWA 225 **Methods of Tennis** (Alternate fall) **(1)**
Prerequisite: HPWE 121 or 122 or consent of instructor.

HPWA 226 **Methods of Badminton** (Alternate spring) **(1)**
Prerequisite: HPWE 117 or consent of instructor.

HPWA 227 **Methods of Track and Field** (Spring) (2)
HPWA 228 **Methods of Soccer** (Alternate spring) (1)
Prerequisite: HPWE 156 or consent of instructor.
HPWA 229 **Methods of Gymnastics, Stunts, and Tumbling** (Fall) (2)
HPWA 230 **Methods of Aerobics Training** (Alternate Spring) (1)
HPWA 231 **Methods of Bowling** (Alternate fall) (1)
Prerequisite: HPWE 113 or 114 or consent of instructor.
HPWA 232 **Methods of Wrestling** (On demand) (1)
Prerequisite: HPWE 145 or consent of instructor.
HPWA 233 **Methods of Weight Training** (Spring) (1)
Prerequisites: HPWE 129 or HPWE 128 or consent of instructor.
HPWA 234 **Prevention and Care of Athletic Injuries** (2)
Procedures and techniques involved in preventing and treating common injuries associated with competitive athletics. (Fall)

The following series of courses is designed to acquaint students with the rules and procedures of officiating selected competitive sports.

HPWA 240 **Sports Officiating—Football** (Alternate fall) (1)
HPWA 241 **Sports Officiating—Basketball** (Alternate fall) (1)
HPWA 242 **Sports Officiating—Volleyball** (Alternate spring) (1)
HPWA 245 **Sports Officiating—Baseball and Softball** (Alternate spring) (1)
HPWA 246 **Sports Officiating—Track and Field Events** (Alternate spring) (1)

HPWA 250 **Lifeguard Training** (2)
An American Red Cross course leading to certification of qualified students. Prerequisites: Standard first aid and CPR or consent of instructor. (Alternate fall)

HPWA 251 **Water Safety Instructors Course** (2)
An American Red Cross course leading to certification of qualified students. Prerequisite: Lifeguard Training Certificate. (Alternate fall)

HPWA 253 **Beginning Improvisation and Composition in Dance** (3)
Theory and practice in basic principles of dance composition. (Alternate spring)

HPWA 256 **Creative Play Activities in Dance** (2)
Emphases on creative movement exploration for children in dance through the Laban theories of body, effort, space and relationship. (Fall/Spring)

HPWA 257 **Repertory Dance** (1)
Student participation in the production of a dance supervised by faculty or guest artist. Prerequisites: Audition or consent of instructor. Corequisite: one technique class. (Fall/Spring)

HPWA 260 **School and Personal Health** (3)
School and personal health problems with emphasis on the development of proper health attitudes and practices, and application of health knowledge and practice in school situations. (Fall/Spring)

HPWA 265 **Standard First Aid and Cardio-Pulmonary Resuscitation** (2)
Knowledge and skills required to meet the needs of most emergency first aid and CPR situations. (Fall/Spring)

HPWA 270 **Theory and Practice of Modern Dance** (1)
Intermediate work in theory and practice of modern dance. Prerequisites: HPWA 170 or consent of instructor. (Fall)

HPWA 271 **Fundamentals of Modern Dance** (2)
Exploration of the elementary principles of modern dance through the technical and academic process. Prerequisites: HPWA 170 or consent of instructor. (Fall)

HPWA 276 **Theory and Practice Ballet** (1)
Intermediate work in theory and practice of ballet. Prerequisites: HPWA 176 or consent of instructor. (Fall)

HPWA 277 Fundamentals of Ballet (2)
Elementary principles of ballet through the technical and academic process. Prerequisites: HPWA 176 or consent of instructor. (Spring)

HPWA 297 Practicum (1,2)
Supervised assistantship with physical educators or recreation practitioners. (Fall/Spring)

HPWA 297B Choreography Practicum I (1)
Student practice in choreographing and producing an original dance work. Prerequisites: HPWA 253 or consent of instructor. (Fall/Spring)

HPWA 301 Tests and Measurements in Physical Education (2)
Modern testing and evaluation programs applied to physical education including biological, neuromuscular, personal, social, and interpretive development.
Prerequisite: HPWA 200. (Spring)

HPWA 302 Advanced Athletic Training Principles (3)
Lectures and laboratory presentations relative to physical aspects of Sports Training; rehabilitation, nutrition, prevention, evaluation and injury management. The medical aspects of sports are emphasized. Prerequisites: HPWA 254, and BIOL 141 or consent of instructor. (On demand)

HPWA 307 Philosophy and Psychology of Coaching (2)
Fundamental philosophical and psychological principles related to coaching competitive athletic teams. (Alternate spring)

HPWA 309 Anatomical Kinesiology (2)
The mechanics of sport-related human movement through a study of selected physical, anatomical, and physiological factors affecting human performance. Prerequisites: BIOL 141,141L, HPWA 200. (Fall)

The following is a series of courses designed to acquaint students with fundamental techniques, movements, strategies, patterns, and ethics of selected competitive athletics. Prerequisites: comparable methods course for each or consent of instructor.

HPWA 310	**Sports Theory—Football** (Alternate fall)	**(2)**
HPWA 311	**Sports Theory—Basketball** (Alternate fall)	**(2)**
HPWA 313	**Sports Theory—Baseball and Softball** (Alternate spring)	**(2)**
HPWA 314	**Sports Theory—Track and Field Events** (Alternate spring)	**(2)**
HPWA 315	**Sports Theory—Volleyball** (Alternate fall)	**(2)**

HPWA 320 Elementary School Physical Education (3)
The selection and instruction of physical activities for children including movement exploration and fundamentals, rhythms, stunts and tumbling, creative dance, low key and classroom games, and physical fitness. (Fall)

HPWA 326 Methods of Teaching Ballet and Modern Dance (3)
Theory and application of methods of teaching ballet and modern dance. Prerequisites: HPWA 270, 276 or consent of instructor. (Alternate spring)

HPWA 350 Motor Development/Learning (3)
Life span motor development: age changes, maturity, sex, and individual differences. Motor learning in childhood and adolescence and the relation of motor performance to other aspects of behavior. Prerequisites: HPWA 200. (Fall)

HPWA 357 Repertory Dance (1)
Student participation in the production of a dance supervised by faculty or guest artist. Students must audition. Corequisite: one technique class in ballet, modern, jazz or tap dance. (Spring)

HPWA 370 Biomechanics (2)
HPWA 370L Biomechanics Laboratory (1)
Application of the principles of mechanics, physics, and mathematics to the analysis of sport activities, and the selection and teaching of motor skills through the application of methods and concepts of motion analysis. Primarily for physical educators, recreation therapists, and athletic coaches. Prerequisites: BIOL 141,141L,HPWA 309. (Spring)

HPWA 372 Theory and Practice Modern Dance (1)
Advanced theory and practice of modern dance. Prerequisite: HPWA 270 or consent of instructor. (Fall)

HPWA 375 Organization and Administration of Physical Education and Sports (2)
Organizational structures and administration techniques in physical education and sports. (Fall)

HPWA 376 Theory and Practice Ballet (1)
Advanced work in theory and practice of ballet. Prerequisites: HPWA 276 or consent of instructor. (Fall)

HPWA 380 Adapted Physical Education (3)
Physical activity, its modification and adaptation for the physically and mentally disabled participant. Prerequisites: HPWA 200 or PRRM 210, or consent of instructor. (Spring)

HPWA 395 Independent Study (1-3)

HPWA 396 Topics (1-3)

HPWA 397 Choreography Practicum II (1)
Student practice in choreographing and producing an original dance work. Prerequisites: HPWA 297B or consent of instructor. (Fall/Spring)

HPWA 401 Legal Considerations in P.E. and Sports (2)
Introduction for Physical Educators, Coaches, and those who teach in the recreational setting to their legal duties and responsibilities. (Spring)

HPWA 403 Physiology of Exercise (2)
HPWA 403L Physiology of Exercise Laboratory (1)
The effects of various types of exercise upon human body structure and function. Prerequisite: HPWA 213 and BIOL 141,141L. (Fall)

HPWA 407 Curriculum Development in Physical Education (2)
Curriculum planning, implementation and evaluation for K-12 physical education programs. Prerequisite: HPWA 200. (Fall)

HPWA 408 Methods of Teaching Physical Education in Secondary Schools (3)
Instructional strategies on a practical application level for prospective secondary physical education teachers preparatory to entry into student teaching. Field experiences are required to supplement lectures and discussions. Prerequisites: completion of at least half of all physical education course-work required for certification. (Fall)

HPWA 457 Repertory Dance (1)
Student participation in the production of a dance supervised by faculty or guest artist. Students must audition. Corequisite: one dance technique class from ballet, modern, jazz or tap. (Spring)

HPWA 473 Motor Assessment for Exceptional Students (3)
Measurement concepts and appropriate instruments for use in determining current levels of performance among students with special needs. Development of appropriate physical education programs based on assessment results. Prerequisites. HPWA 350 and 380. (Alternate spring)

HPWA 480 Special Populations—Psychomotor Disabilities and Implications (3)
Designed to provide student with advanced knowledge concerning the relationship between disabilities and physical activity. A multidisciplinary approach to the etiology and functional implications of psychomotor disabilities. Prerequisites: HPWA 350 and 380. (Alternate spring)

HPWA 494 Senior Seminar (1)
Opportunity for senior students to contribute and participate in discussion and research of current issues. (Fall)

HPWA 495 Independent Study (1-3)

HPWA 496 Topics (1-3)

HPWA 497 Choreography Practicum (1-2)
Student practice in choreographing and producing an original dance work. Prerequisites: HPWA 297B or consent of instructor. (Fall/Spring)

HPWA 499 Internship (3-12)
Work experience obtained on a job where assignments are related to the student's specific concentration area within the Human Performance and Wellness degree. Prerequisites: Human Performance and Wellness major, senior standing. (Summer/Fall/Spring)

ACTIVITY

The following courses meet the physical education requirement for graduation. All students seeking a baccalaureate must take HPWA 100 along with one course from the Aerobic Fitness list below and one additional course from either the Aerobic Fitness list or the Lifetime Activity list. All students seeking an associate degree must take HPWA 100 plus one course from the Aerobic Fitness list. Each activity course is scheduled for an eight-week module and includes lectures on the history, rules, and techniques of the activity and participation in the activity. Students are examined both on knowledge of the activity and proficiency in the activity. No HPWE courses may be used as electives toward any degree or certificate.

HPWE Aerobic/Fitness Activity Courses (1 each)

HPWE 101	Beginning Swimming
HPWE 102	Intermediate Swimming
HPWE 104	Water Polo
HPWE 105	Water Aerobics
HPWE 112	Hiking
HPWE 121	Beginning Tennis
HPWE 122	Intermediate Tennis
HPWE 123	Racquetball
HPWE 124	Intermediate Racquetball
HPWE 125	Handball
HPWE 126	Fitness Walking
HPWE 127	Physical Conditioning
HPWE 128	Intermediate Weight Training
HPWE 129	Weight Training
HPWE 130	Fitness
HPWE 131	Low-Impact Aerobics
HPWE 132	High-Impact Aerobics
HPWE 132	Aerobics
HPWE 133	Skiing
HPWE 135	Cross-Country Skiing
HPWE 139	Roller Skating
HPWE 141	Bicycling
HPWE 145	Wrestling
HPWE 147	Track and Field
HPWE 156	Soccer
HPWE 158	Speedball
HPWE 160	Field Hockey
HPWE 164	Beginning Basketball
HPWE 165	Intermediate Basketball
HPWE 166	Flag Football
HPWE 175	Modern Jazz Dance I
HPWE 178	Tap Dance
HPWE 179	Dance Performance Group
HPWE 180	Varsity Football
HPWE 181	Varsity Basketball
HPWE 182	Varsity Baseball
HPWE 183	Varsity Wrestling
HPWE 184	Varsity Tennis
HPWE 185	Varsity Volleyball
HPWE 186	Varsity Softball
HPWE 189	Varsity Cross Country

Prerequisites for all "Intermediate" or Part II classes: the corresponding beginning course or consent of instructor.

HPWE	Varsity Athletics (1 each)
HPWE 180, 280, 380, 480	Varsity Football
HPWE 181, 281, 381, 481	Varsity Basketball
HPWE 182, 282, 382, 482	Varsity Baseball
HPWE 183, 283, 383, 483	Varsity Wrestling
HPWE 184, 284, 384, 484	Varsity Tennis
HPWE 185, 285, 385, 485	Varsity Volleyball
HPWE 186, 286, 386, 486	Varsity Softball
HPWE 189, 289, 389, 489	Varsity Cross Country

Physical education courses numbered 180-189 designates the first year of varsity athletics; 280-289, the second; 380-389, the third; and 480-489, the fourth. These courses must be taken in sequence. In addition to the rules above for HPWE courses, the following apply:

Only one varsity sport activity course, numbered HPWE 180-189, may be used to meet the College physical education activity requirement.

A student may elect to register for a particular varsity sports class for credit as many as four times (once at each level).

Varsity sports activity credit at the 300 and 400 level may not be counted towards the forty (40) credit hour upper division requirement for graduation unless they are a required part of a degree program.

HPWE Lifetime Activity Courses (1 each)

HPWE 103 Diving
HPWE 106 Scuba I
HPWE 107 Scuba II
HPWE 108 Canoeing
HPWE 110 River Rafting
HPWE 113 Beginning Bowling
HPWE 114 Intermediate Bowling
HPWE 115 Beginning Golf
HPWE 116 Intermediate Golf
HPWE 117 Badminton
HPWE 119 Archery
HPWE 137 Horseback Riding
HPWE 143 Orienteering
HPWE 149 Gymnastics
HPWE 152 Softball
HPWE 154 Beginning Baseball
HPWE 155 Intermediate Baseball
HPWE 162 Volleyball
HPWE 163 Intermediate Volleyball
HPWE 168 Hatha Yoga & Relaxation I
HPWE 169 Hatha Yoga & Relaxation II
HPWE 170 Beginning Modern Dance
HPWE 172 Square Dance
HPWE 173 Folk Dance
HPWE 174 Social Dance
HPWE 176 Beginning Ballet

HUMAN SERVICES

School of Humanities and Social Sciences

HSER 301 Introduction to Human Services (3)
Exploration of human services agencies, programs, funding, philosophies, history, and career opportunities. Prerequisites: PSYC 121,122 and SOCO 260,264, or consent of instructor. (Fall)

HSER 310 Sex Role Identification and Human Sexuality (3)
Interdisciplinary study of sex role differences (stereotypes), sexual biology, cross-cultural comparisons of attitudes toward sexuality, trends in sexual moralities, sexual deviance, and sexual dysfunctions and their treatment. Prerequisites: six hours of social science or consent of instructor. (Spring)

HSER 320 Drugs in Society (3)
Pharmacological, especially the social-psychological, effects of many drugs commonly self-administered today. Emphasis on consequences of abuse and strategies for limiting abuse. Prerequisites: PSYC 121,122, or consent of instructor. (On demand)

HSER 395 Independent Study (1-3)

HSER 396 Topics (1-3)

HSER 495 Independent Study (1-3)

HSER 496 Topics (1-3)

HSER 499 Internship (4)
Regular weekly meetings on campus with a faculty supervisor in addition to an off-campus internship. Prerequisites: senior standing in the Bachelor of Arts program in Social and Behavioral Sciences and consent of instructor. Internship must be arranged for the semester prior to enrollment. (Fall/Spring)

HUMANITIES

School of Humanities and Social Sciences

HUMA 200 History and Development of Books (3)
History and development of the book from hieroglyphic texts to the present viewed in the context of changing technologies and various social, cultural, and economic influences. (Spring)

HUMA 201 **Field Studies in Humanities** **(1)**
Study/travel tours of varying lengths in the United States and foreign countries to acquaint students in some depth with particular aspects of world culture (language, the arts, literature, etc.) both contemporary and historical. (On demand)

HUMA 301 **Field Studies in Humanities** **(3)**
Prerequisite: junior or above standing. (On demand)

HUMA 395 **Independent Study** **(1-3)**

HUMA 396 **Topics** **(1-3)**

HUMA 495 **Independent Study** **(1-3)**

HUMA 496 **Topics** **(1-3)**

HUMA 499 **Internship** **(8)**
See faculty adviser for details. (On demand)

INTERDISCIPLINARY STUDY

School of Humanities and Social Sciences

INTR 400 **San Juan Symposium** **(6)**
An interdisciplinary study of regional biology, geology, and history, combining classroom study on campus with field study in the San Juan Mountains of Colorado. Elective credit only; may not be used to meet requirements of a discipline in Mesa State College degree programs. Prerequisites: upper division standing and consent of instructors. Not open to freshmen and sophomores. (Summer/on demand)

LEGAL ASSISTANT

School of Professional Studies

LEGA 198 **Introduction to Legal Assistant** **(3)**
Techniques and procedures needed by Legal Assistants nationwide. Provides a perspective of the person in the profession, seeks to develop ethics, moral, and professional standards, and enthusiasm and loyalty between employer and employee. Prerequisite: admission to the Legal Assistant Program. (Fall)

LEGA 200 **Real Property** **(3)**
Ownership and interests in land, including security interests; methods of determining who has an interest in property, such as title examination; types of interests which may attach other than complete ownership; documents relating to property interests and their preparation; and pleading, practice, and procedure. Prerequisite: admission to the Legal Assistant Program.

LEGA 202 **Business Organizations** **(2)**
Basic types or forms of businesses and advantages and disadvantages of each, including the documents and forms necessary to form each type of business organization. Organizations studied include proprietorships, partnerships, and corporations. Prerequisite: admission to the Legal Assistant Program.

LEGA 204 **Decedent Estates** **(2)**
Passage of title to property at death, by will, or otherwise. Estate planning and preparation of the basic document of transfer—the will; intestate succession, planning of estates, tax matters, probate, will contests, and the necessary pleadings, practice, and procedure. Prerequisite: admission to the Legal Assistant Program.

LEGA 206 **Creditor's Rights** **(3)**
Methods of debt collection and enforcement of judgments and basic practice in Federal Bankruptcy Court. Areas covered: bills, notes, and other debts securing judgment; enforcement of money judgments, liens, garnishments, Federal Bankruptcy, and necessary pleadings, practice, and procedure. Prerequisite: admission to the Legal Assistant Program. (Fall)

LEGA 207 Introduction to Law and Legal Research (3)
Theories of constitutional law, civil and criminal, statutory, court systems, pleadings, and forms; methods of research to locate written laws and court decisions; theories of tort, agency, contracts, and personal property. Preparation and pleadings for court use; legal ethics, general practice, and procedure. Prerequisite: admission to the Legal Assistant Program. (On demand)

LEGA 210 Litigation (3)
Introduction to the adversary system of justice and preparation for the graduate to assist attorneys in all aspects of civil litigation, including family law, from the initial client interview through pre-trial discovery and motion practice to trial and post-trial motions and appeals. Students taking this course must be in the Legal Assistant Program. (On demand)

MANAGEMENT

School of Professional Studies

MANG 121 Human Relations in Business (3)
Human side of organizations: morale, motivation, human needs, minorities as working partners, leadership styles, organizational environment, and other human forces having an impact on business structures. (Fall/Spring)

MANG 201 Principles of Management (3)
Management as the process of achieving organizational goals or objectives by and through others. Emphasizes functions performed by managers and how they are influenced by forces both within and outside the organization. Managers' use of resources will be investigated. (Fall/Spring)

MANG 221 Supervisory Concepts and Practices (3)
For practicing or potential supervisors and managers who hold or will hold first-line to middle-level management positions. Focuses on the management functions of planning, organizing, staffing, directing, and controlling and their relation to the daily job of the supervisor. (On demand)

MANG 298 Related Work Experience (1,2)
Practical experience and an opportunity to apply academic knowledge in a work situation approved by the School of Business. Students must apply for this course through their advisers at least six weeks prior to end of the semester preceding the semester in which they wish to take the course. For additional requirements, see adviser. Prerequisite: nine semester hours of course work in the field chosen, cumulative GPA of 2.50 or higher, and consent of instructor. (Fall/Spring)

MANG 300 Small Business Management (3)
Aspects of management uniquely important to small business firms; the economic and social environment in which they function. Prerequisite: MANG 201 or consent of instructor. (Fall)

MANG 301 Organizational Behavior (3)
Human behavior, its causes and effects in organizational settings. Description of and development of an understanding of human behavior in such settings. Prerequisite: MANG 201 or consent of instructor. (Fall)

MANG 302 Problems in Small Business Operations (3)
Analysis of managerial problems of small business; preparing a business plan, case studies, outside speakers, and individual reports of local small business enterprises. Students must have an understanding of elementary accounting, finance, and business law. Prerequisites: MANG 201, MARK 231, or consent of instructor, and three hours of ACCT courses beyond 202. (Spring)

MANG 331 Quantitative Decision-Making (3)
Application of inferential statistics to realistic business situations; use of quantitative tools to enhance business decision-making ability. Descriptive statistics for data summarization, probability theory, distributions, estimation, and index numbers with emphasis on hypothesis testing, analysis of variance, regression/correlation, time series, and introduction to operations research and linear programming. Prerequisites: MATH 121 or 127, STAT 214. (Spring)

MANG 351 Career Research and Development (3)
Principles and techniques involved in a job search with emphasis on conducting career research, identification of goals, preparing a job campaign, and elements of a job interview. Preparation of a job kit including a prospect list, resume, cover letter, advertisements, prospect letters, and sales and follow-up letters which can be used in a job search. Prerequisite: junior or senior standing or consent of instructor. (Fall)

MANG 371 Human Resource Management (3)
Effective use and adaptation to the human resources of an organization through the management of people-related activities including interface activities forming the core of personnel management: work, staffing, compensation, appraisal, training, development, organizational maintenance, and unions. Prerequisites: MANG 201, junior or senior standing, or consent of instructor. (Spring/even years only)

MANG 395 Independent Study (1-3)

MANG 396 Topics (1-3)

MANG 401 Advanced Problems in Small Business Operations I (6)
A Small Business Institute program sponsored by the School of Business and Small Business Administration enables students to furnish management assistance to members of the small business community. Practical training, supplementing academic theory by handling problems in a real business environment. Students must apply at least six weeks before the end of the semester preceding the semester in which they wish to participate. Credit not available through competency or challenge. Prerequisite: MANG 302 and/or consent of instructor. (Fall)

MANG 402 Advanced Problems in Small Business Operations II (6)
Continuation of MANG 401. Prerequisites: MANG 302 and/or consent of instructor. (Spring) (Not necessary to complete MANG 401 before 402.)

MANG 421 Credit and Collection Management (3)
Consumer and commercial credit in relationship to the management of credit by business firms, legal aspects of credit extension and current legislation. Information on credit operations of business for both students of business and practicing businessmen. Prerequisites: ACCT 202, MANG 201 or consent of instructor. (Spring)

MANG 471 Production/Operations Management (3)
The use of resources in producing goods and services; concepts of planning, scheduling, and controlling productive activities and physical resources. Prerequisites: MANG 331, FINA 339. (Fall/Spring)

MANG 491 Business Policies and Management (3)
Duties and responsibilities of top management in establishing policies, objectives, and future plans for business organizations. Includes complex cases taken from actual experiences in situations involving policy decisions. Required of all BBA and BS students during the last semester of the senior year. Prerequisites: all required core and emphasis courses must be completed or concurrently enrolled and senior standing. (Fall/Spring)

MANG 495 Independent Study (1-3)

MANG 496 Topics (1-3)

MANG 498 Related Work Experience (1,2)
See MANG 298 course profile. (Fall/Spring)

MANG 499 Internship (3-12)
Opportunity to learn more about management functions and activities through exposure to an actual business or agency environment. Observation and participation in management activities enable students to relate classroom theory to on-the-job experiences. Students must apply for this course at least six weeks prior to the end of the semester preceding the semester in which they wish to take the course. Credit not available through competency or challenge. Prerequisites: BBA major, second semester junior or senior, and consent of instructor. (Fall/Spring/Summer)

MARKETING

School of Professional Studies

MARK 231 Principles of Marketing (3)
Use and development of marketing strategy and the effects of buyer motivation. Major functions of marketing, buying, selling, distribution, pricing, advertising, and storage are studied. A contrast is made between the two marketing institutions: wholesaling and retailing. (Fall)

MARK 232 Advertising (3)
Modern advertising principles including advertising practices, terminology, the communication process, advertising agencies, media, and methods. Advertising from the business viewpoint, its importance to the consumer and the economy. (Spring)

MARK 235 Principles of Selling (3)
The salesperson as a counselor whose role is to help buyers make better decisions. Professional salesmanship is recognized as an integral function in modern society with basic sales techniques studied and practiced in sales presentations. Prerequisites: MARK 231. (Fall/Spring)

MARK 325 Retailing (3)
The retailing environment including retail opportunities, sales stimulation, operating policies and practices, control and service. Case studies and outside speakers supplement class lectures. Prerequisite: MARK 231. (Fall)

MARK 395 Independent Study (1-3)

MARK 396 Topics (1,3)

MARK 432 Advanced Marketing (3)
In-depth complex marketing problems confronting modern business. Development of marketing strategy to allow the firm to progress toward its corporate objectives. Prerequisite: MARK 231. (Fall)

MARK 433 Marketing Research (3)
Marketing research theory and techniques designed to educate the student in the use of the scientific method, develop analytical ability, present basic marketing research tools, and develop proficiency in the art of writing research reports. Cases and actual research projects will be utilized. Prerequisites: MANG 331, MARK 432. (Spring)

MARK 495 Independent Study (1-3)

MARK 496 Topics (1-3)

MASS COMMUNICATIONS

School of Humanities and Social Sciences

MASS 101 Mass Media in America (3)
The role played by media in the everyday lives of citizens, and the economic impact on society. (Fall)

MASS 221 Radio Production and Announcing (3)
Theory and operation of all technical equipment in a radio control room and studio. Develops voice and reading for broadcasting. (On demand)

MASS 231 News Writing and Reporting (3)
Fundamentals of news gathering and writing, interviewing, reporting and writing of newsworthy events and personalities. Work begins on computer VDTs. Stories are submitted for publication and broadcast. Prerequisite: MASS 101 or consent of instructor.

MASS 302 Photojournalism (3)
Photojournalism techniques to develop skills, comparable to that of the professional in Mass Media. Each student will develop a portfolio demonstrating a variety of photojournalism skills and prepare pictures for a show. Student furnish 35mm single lens reflex camera and materials. Prerequisites: MASS 101 and 231. (Fall)

MASS 321 Broadcast Writing (3)
Techniques and practice in writing broadcast scripts, including news, advertising and documentary. Prerequisite: MASS 231 or consent of instructor. (Spring)

MASS 335 Public Relations Concepts (3)
Historical and theoretical approach to contemporary public relations with emphasis on the persuasion process and ethics, propaganda, and advertising techniques in the mass media. Prerequisites: MASS 231 or consent of instructor. (Fall)

MASS 341 Editing, Layout and Design (3)
News evaluation, copy reading, headline writing, page make-up, and similar duties of a publication copy editor using computer editing and make-up. Prerequisite: MASS 231 or consent of instructor. (Fall)

MASS 351 Public Affairs and Feature Reporting (3)
Reporting on governmental agencies, including courts, police, city and county governments, school boards, and legislatures with emphasis on interpretive skills. Includes feature reporting, sports, human interest, and series articles. Prerequisite: MASS 231 or consent of instructor. (Spring/alternate years)

MASS 361 Television Production (3)
Studio and control room operation as well as out of studio production, emphasizing video console equipment, cameras, microphones, and video editing. Prerequisite: MASS 221 or consent of instructor. (Spring/alternate years)

MASS 371 Mass Media Advertising (3)
Designed to acquaint students with principles of mass media advertising. Study of advertising in perspective, advertising barriers, propaganda techniques, layout and design, and actual production for major media: newspapers, radio, and television. Includes work on computers. Prerequisites: MASS 231, 335. (Alternate Spring)

MASS 395 Independent Study (1-3)

MASS 396 Topics (1-3)

MASS 397 Practicum (1)
Experience with campus media including publications and/or radio station under faculty supervision. Prerequisite: MASS 121, or consent of instructor.
(Fall/Spring)

MASS 421 Journalism Law and Ethics (3)
Ethical principles and state and federal laws affecting the reporting of news, expression of opinion, news photos, advertising, and publication of newspapers. Prerequisite: upper class standing or consent of instructor. (Fall)

MASS 435 Public Relations Campaigns (3)
Campaigns and case histories presenting the scope of PR, research methodology, and audience targeting. Practical application of PR theory. Prerequisite: MASS 335 or consent of instructor. (Spring)

MASS 461 Advanced Television Production (3)
Advanced techniques in television production with an emphasis on using ENG/EFP cameras in out-of-studio situations and in video editing. Production of short videos as well as studio productions required. Prerequisites: MASS 221, 321, 361. (Fall, on demand)

MASS 494 Seminar (3)
Major issues of the media in modern culture and media criticism. Prerequisite: Upper division standing. (Spring)

MASS 495 Independent Study (1-3)

MASS 496 Topics (1-3)

MASS 497 Practicum (1)
See MASS 397 course profile.

MASS 499 Internship (8,12,15)
Work in newspapers, radio, television, advertising or public relations positions, or other situations that meet instructor's approval. Prerequisite: MASS 231 and 421, plus either MASS 341 and 351, or 361. (Fall/Spring/Summer)

MATHEMATICS

School of Natural Sciences and Mathematics

MATH 015 Basic Mathematics (3)
Review of addition, subtraction, multiplication, and division of whole numbers, decimals, fractions; ratios, measurements and algebraic notation. For reinforcing previous knowledge or for learning the basic arithmetic process. (Fall/Spring)

MATH 020 Basic Algebra (3)
Basic algebra processes including operations with signed numbers, literal expressions, linear equations, fractions, factoring, graphs, and quadratic equations. For reinforcing previous knowledge or learning the basic algebraic processes. (Fall/Spring)

MATH 091 Intermediate Algebra (3)
Further study in topics of algebra. Includes properties of real and complex numbers; laws of exponents and radicals; factoring polynomials; solving linear and quadratic equations and inequalities; rational expressions and complex fractions; introduction to functions and relations; applications. Prerequisites: one year high school algebra or MATH 020. (Fall/Spring)

MATH 105 Elements of Mathematics I (3)
Problem solving, sets, numeration systems, integers, number theory and rational numbers. The underlying mathematical processes and mathematical reasoning are stressed. Designed for the prospective elementary teacher. Prerequisite: interview and consent of instructor. (Fall/Spring)

MATH 110 College Mathematics (3)
Essential concepts of mathematics for students in social sciences, psychology, nursing, etc. Topics include solving equations, graphing, sets, calculators, counting, probability, logic, geometry, summations, interest, annuities, and descriptive statistics. Prerequisites: two years of high school math at the algebra level or higher, or Math 091 or equivalent. (Fall/Spring)

MATH 113 College Algebra (4)
Systems of integers, rational numbers, real numbers, complex numbers, conic sections, linear and quadratic relations, exponential and logarithmic functions, functions and their graphs, systems of equations, higher-degree equations, and inequalities. Prerequisite: MATH 091 or two years of high school algebra. (Fall/Spring)

MATH 119 Precalculus Mathematics (5)
Polynomials, exponential and circular functions, inverse functions, conditional equations, matrices, determinants, systems of equations, complex numbers, vectors, theory of equations, binomial theorem, and trigonometric functions. Prerequisite: MATH 113 or three years of high school mathematics or consent of instructor. Trigonometry recommended. (Fall/Spring)

MATH 121 Mathematical Foundations of Business (3)
Linear and quadratic functions, graphs, linear programming, differential and integral calculus techniques as applied to administrative decision-making, providing business students with a mathematical background that includes the basic quantitative skills and methods for solving business-related quantitative problems. Prerequisite: MATH 113 or two years of high school algebra. (Fall/Spring)

MATH 127 Mathematics of Finance (3)
Simple interest, simple discount, compound interest, continuously compounded interest, annuities, perpetuities, capitalization, determining payment size, determining outstanding principle, and constructing amortization schedules, including the derivation of mathematical formulae and the methods for solving many financial problems. Prerequisites: MATH 113 or consent of instructor. (Fall)

MATH 130 Trigonometry (3)
Trigonometric and circular functions, their graphs, triangle solution techniques, identities, solving trigonometric equations and inequalities and vectors. Prerequisite: MATH 113 or consent of instructor. (Fall/Spring)

MATH 141 Analytical Geometry (3)
Cartesian coordinates, distances, parallels, perpendiculars, locus of an equation, general line forms, general plane forms, general quadratic forms, polar coordinates, vectors in two and three dimensions, and other selected topics. Prerequisites: MATH 130 or consent of instructor. (Spring)

MATH 146 Calculus for Biological Sciences (5)
Sets, functions, derivatives, integrals, trigonometry, series, exponential and logarithmic functions, partial derivatives, and multiple integration taught from an intuitive point of view with many examples from the biological sciences. Prerequisite: MATH 113 or consent of instructor. (On demand)

MATH 151 Calculus I (5)
Functions, limits of functions, derivatives, definite integral, antiderivatives, applications, trigonometric exponential and logarithmic functions. Prerequisite: MATH 119 or consent of instructor. (Fall/Spring)

MATH 152 Calculus II (5)
Trigonometric and hyperbolic functions, techniques of integration, series, conics, polar coordinates, and parametric equations. Prerequisite: MATH 151. (Fall/Spring)

MATH 205 Elements of Mathematics II (3)
Decimal numbers, probability, statistics, geometry, and the metric system. @CD3:A continuation of MATH 105 designed for the prospective elementary teacher. Prerequisite: MATH 105 or consent of instructor. (Fall/Spring)

MATH 253 Calculus III (4)
Vectors in three-dimensional space, vector functions, partial derivatives, directional derivative and multiple integrals. Prerequisite: MATH 152. (Fall/Spring)

MATH 260 Differential Equations (3)
Techniques of solving differential equations of order one, linear differential equations, linear equations with constant coefficients, non-homogeneous equations, variation of parameter techniques, and Laplace transform methods. Prerequisite: MATH 253 or consent of instructor. (Spring)

MATH 265 Linear Algebra (3)
Matrices, solving systems of equations, determinants, vectors, vector spaces, linear transformations and eigenvalues. Prerequisite: MATH 253 or consent of instructor. (Fall/ Spring)

MATH 305 Euclidean Geometry (3)
Development of Euclidean Geometry including basic concepts of logic, axiomatic proofs, inductive reasoning, algebraic proofs in Cartesian coordinates, computer programming applications, and the van Hiele method. Intended for students seeking teacher certification. Prerequisites: Calculus II or consent of instructor. (Spring)

MATH 310 Number Theory (3)
Classical number theory including the fundamental theorem of arithmetic, congruences, and linear diophantine equations. Prerequisite: MATH 152. (On demand)

MATH 347 Methods of Teaching Secondary Mathematics (3)
Methods and techniques of teaching mathematics at the secondary education level. Presentation of short lessons by students will constitute a major part of the course. Prerequisite: consent of instructor. (Fall)

MATH 360 Methods of Applied Mathematics (3)
Selection of advanced mathematical techniques of particular use to scientists and engineers including the theory of linear spaces, transform techniques and harmonic analysis, partial differential equations, and tensor analysis on manifolds. Applications are stressed. Prerequisite: MATH 260. (Spring)

MATH 361 Numerical Analysis (4)
Elementary numerical analysis using the hand-held programmable calculator including Taylor's theorem, truncating errors, iteration processes, least squares methods, numerical solution of algebraic and transcendental equations, systems of equations, ordinary and partial differential equations, integral equations, interpolation, finite differences, eigenvalue problems, relaxation techniques, approximations, and error analysis. Prerequisites: MATH 152. (Fall)

MATH 369 Mathematical Logic and Discrete Structures (3)
Elementary logic, induction, recursion, recurrence relations, sets, combinatorics, relations, functions, graphs, trees, and elementary abstract structures. Prerequisites: MATH 121 or 151, MATH 265 or consent of instructor. (Fall)

MATH 370 Discrete Mathematics (3)
Applications of logic, Boolean algebra and computer logic, abstract structures, coding theory, finite-state machines, and computability. Prerequisites: MATH 369 or MATH 265 and consent of instructor. (Spring)

MATH 380 History of Mathematics (3)
History of mathematics from antiquity to the present with emphasis upon the development of mathematics concepts and the people involved. Prerequisite: MATH 152. (Spring)

MATH 385 Modern Geometry (3)
Classical Euclidean geometry of polygons and circles, synthetic geometry, constructions, inversive geometry, finite geometry, geometric transformations, and convexity. Prerequisites: MATH 253. (Fall)

MATH 390 Abstract Algebra (3)
Mathematical induction, equivalence relations, classical group theory--including quotient groups and group isomorphisms and homomorphisms—and an introduction to rings and fields. Prerequisite: MATH 265. (Alternate Fall)

MATH 391 Abstract Algebra II (3)
Topics in algebraic structures on groups, rings, fields, and modules. Prerequisites: MATH 390. (Alternate Spring)

MATH 395 Independent Study (1-3)

MATH 396 Topics (1-3)

MATH 450 Complex Variables (3)
Algebra of complex numbers, analyticity, differentiation and integration of complex functions, Cauchy's integral formulae, and series. Prerequisite: MATH 253. (Fall)

MATH 452 Advanced Calculus (3)
Sequences, Euclidean spaces, limits of functions, continuity, differentiation, and integration. Prerequisite: MATH 253. (Alternate Fall)

MATH 453 Advanced Calculus II (3)
Uniform continuity, topology in metric spaces, normed linear spaces, the differential and Rn, Stone-Weierstrass Theorem, connectedness, compactness, complete metric spaces. Prerequisite: MATH 452. (Alternate Spring)

MATH 460 Linear Algebra II (3)
Characteristics and minimal polynomial, Cayley-Hamilton Theorem, invariant subspaces, bilinear forms, primary decomposition theorem, dual vector spaces. Prerequisite: MATH 265. (Spring)

MATH 495 Independent Study (1-3)

MATH 496 Topics (1-3)

MUSIC

School of Humanities and Social Sciences

ACADEMIC

MUSA 110 Standard Notation (2)
Basic components of written music: note reading, scales, key signatures, intervals, and fundamental rhythm and chord structures. Open to all students. May be required of music majors as prerequisite to MUSA 114. (Fall/Spring)

MUSA 114 Theory I-Introduction (3)
Harmonic principles of the "common-practice" period including scales, intervals, triads and 7th chords. Introduction to part writing and voice leading. Prerequisite: satisfactory score on theory placement examination; concurrent enrollment in MUSA 116; concurrent enrollment in MUSA 130 or prior knowledge of the keyboard. (Fall)

MUSA 115 Theory II-Diatonic Concepts (3)
Continuation of MUSA 114, extending to all types of diatonic 7th chords, and their usages. Includes advanced rules of tonal harmonization. Prerequisite: MUSA 114 or consent of instructor; concurrent enrollment in MUSA 117. Concurrent enrollment in MUSA 131 or prior knowledge of the keyboard is required. (Spring)

MUSA 116 Ear Training and Sightsinging I (2)
Skills developed in reading rhythms, sightsinging, and listening. Emphasis on beginning melodic, harmonic, and rhythmic dictation. To be taken concurrently with MUSA 114. (Fall)

MUSA 117 Ear Training and Sightsinging II (2)
Further development of skills in sightsinging, rhythmic recognition, advanced listening abilities, including dictation of melodic and harmonic intervals, chord progressions, and two, three, and four-part chorales. To be taken concurrently with MUSA 115. Prerequisite: MUSA 116. (Spring)

MUSA 128 Workshop in Music (1,2,3)
Consists of specialized workshops in various aspects of music made possible by visiting artists and/or lecturers. (Fall/Spring, on demand)

MUSA 130 Class Piano I (2)
For major and non-major students. Application of scales, chords and elements of music at the keyboard and development of repertoire. Recommended for all elementary, early childhood majors and music theatre majors. Prerequisite: MUSA 110 (music majors only). (Fall/ Spring)

MUSA 131 Class Piano II (2)
The student gains further expertise at the keyboard. Prerequisite: MUSA 130 or consent of instructor. (Fall/Spring)

MUSA 137 Class Voice I (2)
Fundamentals of singing, interpretation and solo repertoire for beginning voice students. (Fall)

MUSA 138 Class Voice II (2)
Concepts of phonetics, language (diction for singers), and solo repertoire. Prerequisite: MUSA 137. (Spring)

MUSA 214 Theory III-Chromatic Concepts (2)
The full use of chromaticism through secondary dominants, altered chords, Neapolitan and augmented sixth chords, and modulation techniques. Continues into 20th Century including the use of advanced chromaticism, serialism, and atonality. Prerequisite: MUSA 115. (Fall)

MUSA 215 Theory IV—Twentieth Century Form and Analysis (2)
Study of various compositional approaches and techniques of the 20th Century, and correlated with the study of musical form. (Spring)

MUSA 216 Keyboard Harmony (2)
Keyboard and theory skills applied to perform harmonization of a given line, transposition at sight, and open score realization and sightreading at the keyboard. Prerequisite: MUSA 214 and 230. (Spring)

MUSA 220 Music Appreciation (3)
Masterpieces of music, composers, and performers useful for the music student who has a weak background in the Masters. (Fall/Spring)

MUSA 228 Workshop in Music (1,2,3)
Consists of specialized workshops in various aspects of music made possible by visiting artists and/or lecturers. (Fall/Spring, on demand)

MUSA 230 Class Piano III (2)
A concentrated study of repertoire in preparation for the piano proficiency exam. Maximum keyboard time will develop coordination and flexibility. Prerequisites: MUSA 130,131, or consent of instructor. (Fall)

MUSA 232 String Techniques and Materials (2)
Study of violin, viola, cello, and string bass in a class situation. Emphasis is on fundamentals of playing techniques at an elementary level. (Alternate Fall)

MUSA 233 Woodwind Instruments Techniques and Materials (2)
Study of flute, oboe, clarinet, bassoon, and saxophone in a class situation. Emphasis is on fundamentals of playing techniques at an elementary level. (Alternate Fall)

MUSA 234 Brass Instrument Techniques and Materials (2)
A concentrated course to develop a knowledge of the brass instruments and to acquire sufficient skill to demonstrate good tone, technique, and breath control. (Alternate Spring)

MUSA 235 Percussion Instrument Techniques and Materials (2)
The study of methods and materials for teaching beginning percussion in the public school. Includes practical instruction on the instruments utilized in the marching band, orchestra, and stage band. (Alternate Spring)

MUSA 236 Electronic Instrument Techniques and Materials (2)
The study of methods and materials for the introduction to the use of electronic instruments, including the areas of sound reinforcement (microphones and amplification) and sound generation (synthesis) by electronic means. (Alternate Spring)

MUSA 241 Music and Methods in Early Childhood Education (2)
For students who will be working with preschoolers and kindergarten-age students. Through the creative process students develop simple tunes and gain knowledge and appreciation of music. (Fall/Spring)

MUSA 266 History of Popular Music (3)
Differences in style, musical elements, lyrical content, and outstanding artists/writers in the areas of popular, rock, Country Western, and jazz idioms. Evolutionary aspects and social significance are introduced as background references. Guest lectures, class listening sessions, film strips, and music video augment the lecture sessions. Open to all students. (Fall/Spring)

MUSA 268 Improvisation (2)
Materials and techniques for improvisation, including chord and scale construction, modality, harmonic patterns, linear concepts, with emphasis on technique, style and idiomatic usage. (Fall)

MUSA 302 Keyboard Literature (3)
Survey of keyboard music from early Baroque composers such as John Bull to present day composers. Emphasis on composers' styles, various editions, performers, and performance practice. Prerequisites: MUSA 230 or consent of instructor. (Alternate Spring)

MUSA 303 Symphonic Literature (3)
Survey of music from early instrumental to present-day compositions. Emphasis on composers' styles, orchestras, conductors; chamber orchestra music also included. Prerequisites: MUSA 215. (Alternate Fall)

MUSA 310 Accompanying Techniques (2)
Development of accompanying proficiency, including listening skills, form, and analysis of the music to be performed; rehearsing techniques; accompanying repertoire for vocal, instrumental, and ensemble playing. Prerequisites: MUSA 214,216 or consent of instructor. (Alternate Fall)

MUSA 316 Counterpoint (2)
Study and writing of 18th Century counterpoint, analysis of contrapuntal forms including two- and three-part inventions and fugue. Prerequisite: MUSA 215. (Alternate Fall)

MUSA 317 Orchestration (2)
Choral and instrumental arranging; instrumentation, scoring, and analysis of harmonic styles of various composers. Students are required to compose and arrange original works. Prerequisite: MUSA 215. (Spring)

MUSA 318 Vocal Literature (3)
Follows the changing patterns, styles, and fashions of the secular art-song from medieval Europe to Europe and America of the day. Prerequisites: MUSA 137,138 or pervious enrollment in private vocal studies. (Alternate Spring)

MUSA 326 Music History and Literature I (3)
Literature and styles of the master composers of music through Ancient, Medieval, Renaissance, and Baroque music. Course work is designed for the fine arts major, utilizing a lecture and listening laboratory format and one scholarly research paper of the student's choice. Open to any student with sufficient background. Prerequisite: consent of instructor. (Fall)

MUSA 327 Music History and Literature II (3)
Literature and styles of the master composers of music through the Classic, Romantic, and Modern ages. Course work is designed for the fine arts major, utilizing a lecture and listening laboratory format and one scholarly research paper of the student's choice. Open to any student with sufficient background. Prerequisite: consent of instructor. (Spring)

MUSA 328 Workshop in Music (1,2,3)
Consists of specialized workshops in various aspects of music made possible by visiting artists and/or lecturers. (Fall/Spring, on demand)

MUSA 337 Diction for Singers (3)
Pronunciation of Italian, German, and French as applied to the performance of vocal literature. (Alternate Fall)

MUSA 340 Teaching Elementary and General Music: Methods, Principles and Materials (3)
For music education majors to provide an overview of goals and activities to be included in elementary and general music classes. Weekly laboratory experiences. Prerequisites: MUSA 115, 220. (Alternate Fall)

MUSA 360 The Music Business (1)
Designed to facilitate entry into the professional music arena by providing a background in the business aspects of the profession. Includes contracts, marketing, recording, TV, radio, film, the Musician's Union, AFTRA, royalties, managers, agents, club owners, and alternate careers. Recommended prerequisites: MUSA 266. (Alternate Fall)

MUSA 361 Songwriting (1)
Basic skills for the songwriter including correct notation techniques, phrasing, line and climax, standard forms, harmonic and rhythmic idioms, lyrics and content, and preparation of lead sheets. Recommended prerequisite: MUSA 114, 266. (Alternate Fall)

MUSA 362 Commercial Arranging (1)
Elementary arranging skills including instrumentation, basic problems and principles of orchestration for various groups and functions, standard musical textures, standard voicing techniques, special harmonic practices and analysis of professional arrangements. Prerequisites: MUSA 236, 266. (Alternate Spring)

MUSA 395 Independent Study (1-3)

MUSA 396 Topics (1-3)

MUSA 410 Vocal Pedagogy (3)
The physiology of the human vocal mechanism, various teaching styles, vocal problems related to various age groups, and vocal repertoire pertinent to all age groups and levels of development. Prerequisites: MUSA 137,138 or previous or concurrent enrollment in private vocal studies. (Alternate Spring)

MUSA 428 Workshop in Music (1,2,3)
Consists of specialized workshops in various aspects of music made possible by visiting artists and/or lecturers. (Fall/Spring, on demand)

MUSA 440 Teaching Vocal Music K-12: Methods, Principles, and Materials (3)
Concepts and materials preparatory for teaching vocal music in the public schools. Content deals with the adolescent voice, vocal techniques and rehearsal approaches, development of the elementary, middle/junior high school, and senior high vocal program, and choral repertoire appropriate for each level. Prerequisites: MUSA 137, MUSL 137 or MUSP 150. (Spring, alternate years)

MUSA 441 Teaching Instrumental Music K-12; Methods, Principles and Materials (3)
Designed to investigate many of the problems that future instrumental music teachers will encounter in the profession. Activity will be centered on developing teaching competencies, administration of the program and materials and equipment needed for the instrumental music program. Prerequisites: All MUSA 100-300 courses. (Spring, alternate years)

MUSA 450 Beginning Conducting (2)
Basic concepts and techniques necessary to conduct music competently. Students will be expected to master patterns, fermatas, dynamics, etc. Observation of other conductors and score study is included. Required of all music majors. Prerequisites: MUSA 327. (Alternate Fall)

MUSA 451A Advanced Conducting, Instrumental (2)
MUSA 451B Advanced Conducting, Choral (2)
More difficult techniques such as advanced meters, advanced score study, interpretive conducting and ensemble rehearsal techniques. Required of all music education majors. Prerequisites: MUSA 450. (Alternate Spring)

MUSA 495 Independent Study (1-3)
MUSA 496 Topics (1-3)

APPLIED MUSIC LESSONS

Applied music lessons may be taken for credit. Students meet weekly with an individual instructor assigned by the music department. An instructional fee is required, and lessons may be taken twice at each level. Music majors required to attend and perform at weekly recitals.

Applied music lessons are offered in the following:

MUSL 130, 230, 330, 430	**Keyboard** (Fall/Spring)	(1)
MUSL 131, 231, 331, 431	**Guitar** (Fall/Spring)	(1)
MUSL 132, 232, 332, 432	**Strings** (Fall/Spring)	(1)
MUSL 133, 233, 333, 433	**Woodwind** (Fall/Spring)	(1)
MUSL 134, 234, 334, 434	**Brass** (Fall/Spring)	(1)
MUSL 135, 235, 335, 435	**Percussion** (Fall/Spring)	(1)
MUSL 136, 236, 336, 436	**Electronic Instruments** (Fall/Spring)	(1)
MUSL 137, 237, 337, 437	**Voice** (Fall/Spring)	(1)
MUSL 138, 238, 338, 438	**Composition** (Fall/Spring)	(1)

PERFORMING

Performance ensembles may be taken twice at each level for credit.

MUSP 101, 201 Music Performance Experience (1)
For students wishing to participate in instrumental and vocal ensembles for fine arts credit toward general education requirements. See music faculty for assignment to appropriate group based on interest and ability. May be taken twice at each level; three semesters are needed to satisfy the fine arts requirement.

MUSP 140, 240, 340, 440 Symphonic Band (1)
An ensemble of music students and students from other disciplines who perform a wide variety of literature selected from standard and current concert band repertoire. (Fall/Spring)

MUSP 141, 241, 341, 441 Symphony Orchestra (1)
Students who demonstrate proficiency on orchestra instruments, through audition with the conductor, may become members of the Grand Junction Symphony and receive credit. (Fall/Spring)

MUSP 144, 244, 344, 444 Jazz Ensemble (1)
A group utilizing stage band instrumentation and performing many local and required concert engagements. By audition; preference given to members of Symphonic Band. (Spring)

MUSP 145, 245, 345, 445 (Section A) Instrumental Ensemble-Woodwinds (1)
(Section B) Instrumental Ensemble-Brass (1)
(Section C) Instrumental Ensemble-Strings (1)
(Section D) Instrumental Ensemble-Percussion (1)
(Section E) Instrumental Ensemble-Guitar (1)
(Section F) Instrumental Ensemble-Piano (1)
Groups organized upon the talents and interests of the members. Specified ensembles may be offered from time to time in the format of String Quartets, Woodwind, and Brass Choirs, etc. A minimum of one public performance per each term of enrollment is required. (Fall/Spring)

MUSP 146, 246, 246, 446 Community Performance Organizations (1)
Students and other musicians in the community who desire college credit are allowed to demonstrate ability in their medium and to become, by audition,members of various musical groups and receive credit. Each level may be repeated once for credit.

MUSP 150, 250, 350, 450 Concert Choir (1)
The major large choir, open to all students and staff who enjoy singing, with final membership approved by the director. Concert Choir performs great choral literature of all types representing Mesa State College in formal concerts both on and off campus including concert tours, performing large-scale masterworks with orchestra. (Fall/Spring)

MUSP 156, 256, 356, 456 Chamber Choir (1)
An advanced smaller choral ensemble which performs vocal literature from Renaissance to Contemporary art music including jazz. Chamber Choir performs on and off campus, on concert tours, and at the annual Madrigal Dinners. Staff and students are eligible by audition; membership in Concert Choir generally a prerequisite. (Fall/Spring)

MUSP 157, 257, 357, 457 Men's Chorus (1)
Campus-wide chorus open to all interested students and faculty. Performs all types of music written for combined men's voices. Concertizes in conjunction with other college choral ensembles and in separate performances on-off campus. Prerequisites: Taken in sequence or with consent of instructor. (Fall/Spring)

MUSP 158, 258, 358, 458 Women's Chorus (1)
Performances include the complete range of music written for combined women's voices, both on and off-campus, and in conjunction with the other college choral ensembles in Music Department concerts. Prerequisites: consent of director. (Fall/Spring)

MUSP 159, 259, 359, 459 Vocal Jazz Ensemble (1)
Exploration of wide range of vocal literature. Performances given, both on and off campus. Prerequisites: consent of instructor. (Spring)

MUSP 162, 262, 362, 462 Combo (1)
Interested students team up with a rhythm section in learning tunes and "head" charts, improving skills and making practical application of improvisation. (Fall/Spring)

MUSP 164, 264, 364, 464 Commercial Big Band (1)
A laboratory band which focuses on the swing styles of the 1940s big bands. Instruction in phrasing, interpretation, improvisation, tone production, and reading. Enrollment by audition; preference given to those enrolled in Symphonic Band. (Fall)

MUSP 395 Independent Study (1-3)

MUSP 396 Topics (1-3)

MUSP 420 **Senior Recital** (2)
Preparation for senior level recital in student's performance medium. Recital must be given during term in which the student is registered in this course and must be supervised by the student's major applied music professor. (Fall/Spring)

MUSP 495 **Independent Study** (1-3)

MUSP 496 **Topics** (1-3)

NURSING

School of Professional Studies

NURS 113 **Nursing Concepts I** (7)
NURS 113L **Nursing Concepts I Laboratory** (2)
The concept of man as a system with focus on the holistic approach to nursing. Blends theory and practice including the scientific principles for basic nursing procedures and skills. The nursing process provides the method for practice of basic skills to individuals undergoing medical and surgical interventions to correct dysfunctions. Prerequisite: acceptance into the ADN program. (Fall)

NURS 123 **Nursing Concepts II** (5)
NURS 123L **Nursing Concepts II Laboratory** (4)
Evaluation of common mental and physical dysfunctions experienced by patients of all ages, including those experiencing childbirth, with focus on identifying the input, output, and throughput when using the nursing process in providing care to patients. (Spring)

NURS 133 **LPN-ADN Bridge Course** (3)
Designed to ensure that the licensed practical nurse graduate possesses the knowledge and skill to succeed in upper level associate degree courses. Introduction to selected content related to care of adults and the childbearing family. Clinical laboratory allows students to apply content. Previous nursing course credit will be held in escrow until successful completion of the course. Prerequisites: Graduation from a state approved licensed practical nurse program with evidence of a current license. Corequisite: NURS 210, 210L. (On demand)

NURS 210 **Nursing Concepts III** (5)
NURS 210L **Nursing Concepts III Laboratory** (5)
General systems theory in evaluation of dysfunctions of all ages including the human adaptive capabilities throughout the life span and utilization of the nursing process. The impact on the child and adolescent is emphasized. (Fall)

NURS 225 **Introduction to Nursing** (2)
Theoretical foundation of nursing practice. Historical, legal, political and ethical issues affecting nursing and the health care delivery system are examined. Co-requisites: concurrent enrollment in NURS 245 and 245L. Prerequisites: acceptance into the BSN program, successful completion of BIOL 141, 141L, 250, and 250L. (Fall)

NURS 230 **Nursing Concepts IV** (5)
NURS 230L **Nursing Concepts IV Laboratory** (5)
General systems approaches to patients throughout the life span; dysfunction of various sub-systems with emphasis on the psychological components of man and the use of the nursing process. (Spring)

NURS 245 **Fundamentals of Nursing** (3)
NURS 245L **Fundamentals of Nursing Laboratory** (2)
Development of selected interpersonal, communication, and psychomotor skills to assist individuals in meeting their health care needs. Begins to use the nursing and teaching process in assisting individuals to meet health needs. Co-requisite: concurrent enrollment in NURS 225. Prerequisite: acceptance into the BSN program; successful completion of BIOL 141, 141L, 250 and 250L.

NURS 273 **Issues in Nursing** **(2)**
ADN Exit course exploring the effect of recent trends and issues while examining historical components of nursing. Students are encouraged to become aware of potential problems experienced during the transition from student to practicing nurse. (Spring)

NURS 315 **Professional Role Transition** **(2)**
Designed to facilitate the transition between the technical nurse graduate to the professional practice of nursing at the baccalaureate level. For returning RN and LPN students. (Fall)

NURS 316 **RN-BSN Bridge Course** **(4)**
Designed to ensure that the technical nurse (RN) graduate possesses the knowledge and skill to succeed in upper level baccalaureate courses. Will introduce selected content related to care of adults and the childbearing family. Clinical laboratory allows students to apply content and gain skills in physical assessment techniques. Previous nursing course credits will be held in escrow until successful completion of the course. Prerequisites: Graduation from a state-approved diploma or associate degree program in nursing. Corequisites: NURS 315. (On demand)

NURS 325 **Pharmacology in Nursing** **(2)**
Modern drug therapy with the study of specific classifications, terminology, theories, and techniques of safe administration. Prerequisite: concurrent enrollment in NURS 345, 345L or all of the following: 355, 355L and 365, 365L. (Fall)

NURS 335 **Health Assessment** **(3)**

NURS 335L **Health Assessment Laboratory** **(1)**
Assessment of the health status, history taking, and physical examination of adults and children. Prerequisite: concurrent enrollment in NURS 345, 345L or all of the following: 355, 355L and 365, 365L. (NURS 335L for RNs only—on demand) (Fall/Spring)

NURS 345 **Nursing Process I: The Adult** **(4)**
NURS 345L **Nursing Process I: The Adult Laboratory** **(4)**
Application of the nursing process in the care of individuals. Pathophysiological problems of moderate intensity and relative stability are explored. (Fall/Spring)

NURS 355 **Nursing Process II: Expanding Family** **(2)**
NURS 355L **Nursing Process II: Expanding Family Laboratory** **(2)**
The cognitive, psychomotor and affective skills essential to the care of the expanding family through the trimesters of pregnancy. (Fall/Spring)

NURS 361 **Living with Loss** **(2)**
Theories of attachment and loss applied to situational and maturational losses. (Alternate Spring)

NURS 362 **Spiritual Aspects of Caring** **(2)**
Theoretical approaches to man's spiritual nature and the application of theories to the helping relationship. (Alternate Spring)

NURS 363 **Women's Health Issues** **(2)**
Topics and issues that influence women's health in contemporary society. Foundations of alternative health services are discussed. (Alternate Fall)

NURS 365 **Nursing Process III: The Child** **(2)**
NURS 365L **Nursing Process III: The Child Laboratory** **(2)**
Health and illness needs of the child within the developing family. Pathophysiological and psychosocial dysfunctions of children and adolescents are explored. (Fall/Spring)

NURS 395 **Independent Study** **(1-3)**

NURS 396 **Topics** **(1-3)**

NURS 425 **Nursing Process IV: Community Health** **(3)**
NURS 425L **Nursing Process IV: Community Health Laboratory** **(2)**
Orientation to community public health including a study of background, development and trends. Students apply community health principles in the care for individuals, families, and groups in a community setting. Prerequisites: completion of 300 level nursing courses. (Fall/Spring)

NURS 435 Nursing Process V: Mental Health (3)
NURS 435L Nursing Process V: Mental Health Laboratory (2)
In-depth examination of psychosocial adaptive modes in relation to mental health maintenance and restoration; emphasis on psychosocial developmental theories, principles of communication and relationship development. Includes assessment of emotional disorders and psychotherapeutic interventions. Prerequisite: completion of 300 level nursing courses. (Fall/Spring)

NURS 443 Power and Political Dynamics in Nursing (2)
Political influences and social forces in history which impact nursing. The utilization of power and politics are analyzed as methods to further the potential of nursing. Topics include role conflict of the working woman, attitudes toward masculinity and femininity, finances and economy, networking, and keys of career success. (Alternate Spring)

NURS 445 Nursing Process VI: Advanced Nursing Process (3)
NURS 445L Nursing Process VI: Advanced Nursing Process Laboratory (4)
Advanced concepts essential for nursing care of clients requiring intervention in relation to complex multisystem illness or injury. Provides opportunities for direct patient care in both structured and unstructured settings. Prerequisites: completion of required 300 level nursing courses. (Fall/Spring)

NURS 455 Leadership Process: Theory and Practice (3)
NURS 455L Leadership Process: Theory and Practice Laboratory (2)
Focuses on the humanistic management process. The systems approach to management theory, principles, and concepts is developed. Planning, organizing, directing, and controlling are examined as they apply to the delivery of nursing care. Prerequisite: completion of required 300 level nursing courses.
(Fall/Spring)

NURS 461 Health Care Systems (2)
Overview of the multiple roles of the health care delivery system including both traditional and alternative methods; and the impact of insurance programs, federal government, and consumerism on health delivery. The roles of providers and personnel in the delivery of health care in the U.S. and other countries are discussed. Prerequisite: consent of instructor. (Alternate Fall)

NURS 462 Psychosocial Issues (2)
Current psychosocial issues which affect individual, family and community systems. Behavior is viewed in the context in which it occurs, with emphasis on interactions between the client and his environment. Assessment of dysfunctions and facilitation of health promoting or restorative behaviors are discussed. Prerequisite: consent of instructor. (Alternate Fall)

NURS 464 The Older Adult (2)
Theories of aging with emphasis on the age normal changes as well as social influences affect the older adult. Ethical and legal considerations of the elderly as well as resources are identified. Prerequisite: senior standing or instructor consent. (Alternate Spring)

NURS 475 Research Process (2)
The relationship between nursing research and the system of nursing are examined; processes and methodology of scientific investigation involving content relevant to the use of research studies in nursing are presented. Prerequisite: STAT 200 or other acceptable statistic course. (Fall/Spring)

NURS 485 Professional Perspectives (2)
Trends and issues affecting nursing and health care delivery systems with emphasis on the role of the professional nurse in shaping health care for the future. Marketing strategies are identified. Prerequisite: completion of 300 level nursing courses.

NURS 495 Independent Study (1-3)
NURS 496 Topics (1-3)

OFFICE ADMINISTRATION

School of Professional Studies

OFAD 101 Bookkeeping for Small Business (3)
For persons keeping accounting records in a legal, medical, or other professional office or those who will work in the accounting department of a small retail firm. Fundamental accounting principles including opening through closing a set of books. Not advised for four-year accounting majors. No credit allowed if credit already established in ACCT 201. (Fall/Spring)

OFAD 147 Medical Terminology (4)
Basic medical terminology as applied to major systems of the body and related diseases. Includes special applications related to medical practice with emphasis on spelling. (Fall)

OFAD 151 Keyboarding (3)
Keyboard, basic word processing commands, minimum skill with instruction and practice on letters, reports, and tables. (Fall/Spring)

OFAD 153 Beginning Word/Information Processing (3)
Introduces word/information processing concepts, functions, and terminology; provides an overview of the document production cycle with related hardware and software; provides in-depth, hands-on experience with a leading microcomputer word processor. Such features as creating a document, revising, formatting, paginating, merging, document assembly, disk management, and other relevant features will be covered. Two to three hours per week of arranged laboratory is required in addition to regularly scheduled classes. Prerequisites: OFAD 151 or knowledge of keyboard. (Fall/Spring)

OFAD 154 Laboratory Techniques (2)
Basic lab procedures such as blood counts, urinalysis, EKG, etc. Actual lab experience. Prerequisite: BIOL 141 or consent of instructor. (Spring)

OFAD 159 Medical Office Procedures (3)
Medical office management, patient reception, record keeping, care of equipment and supplies, communication skills, and assisting the physician and patient including examination room techniques. Prerequisites: OFAD 147, 215, or consent of instructor. (Spring)

OFAD 201 Office Management (3)
Office organization including work in the office, office layout, equipment, supplies and forms, personnel problems, costs, control of office work, methods of recognizing and solving office communication problems, awareness of successful human relations, changing technologies and philosophies of business, and technical terminology used in business. (Spring)

OFAD 202 Records Management (3)
Institutional and legal requirements for developing, storing and maintaining business and personnel information systems. Management of computerized and non-computerized systems emphasized including storage and retrieval using alphabetic, geographic, numeric and subject methods for manual, micro-records, and computerized systems; and control of records management programs. (Fall)

OFAD 215 Document Format/Skill Development (3)
Emphasizes skill development and formatting of mailable letters, manuscripts, and business forms to a level required in the average office on electronic typewriters and microcomputers. Prerequisite: OFAD 153 or consent of instructor. (Fall/Spring)

OFAD 221 Transcription Machines/Business and Medical (3)
Fundamental skills, speed, and accuracy of business or medical transcription on electronic equipment. Prerequisites: OFAD 215 or consent of instructor. (Fall/Spring)

OFAD 244 Legal Procedures (3)
American court systems, branches of civil and criminal law, and secretarial procedures relating to ethical behavior and office management techniques in a law office. Includes practice in preparing legal forms and documents with emphasis on speed, accuracy, and mailability, and procedures to help develop confidence and poise necessary in a professional office. Prerequisite: typing proficiency. (Fall)

OFAD 253 Intermediate Word/Information Processing (3)
Continuation of OFAD 153. Provides hands-on experience with the more advanced features of word processing, including graphics and desktop publishing. Prerequisite: OFAD 153. (Spring)

OFAD 266 Word/Information Processing: Document Production (4)
Office standards examined and applied to the production of business documents on microcomputers and electronic typewriters; document analysis procedures and productivity measurement techniques presented with emphasis on decision-making and problem-solving. Prerequisites: OFAD 215. (Spring)

OFAD 270 Office Automation: Microcomputer Applications (3)
Microcomputer applications used in the office automation environment, including accounting applications, integrated software (word processing, spreadsheets, data base, graphs), desktop managers, graphics, telecommunication, electronic mail; hands-on experience according to student's major and software availability. Arranged laboratory is required in addition to regularly scheduled classes. Prerequisites: CISB 101. (Fall)

OFAD 271 Office Automation: Procedures and Technology (2)
Concepts of office automation through the integration of technology, procedures, and people; procedures of the traditional office contrasted with those of the evolving automated office in relation to both document production skills and administrative support functions; emphasis on decision-making and problem-solving skills needed in the evolving automated office environment. Prerequisites: OFAD 215. (Spring)

OFAD 295 Independent Study (1,2)

OFAD 296 Topics (1,2,3)

OFAD 298 Related Work Experience (1,2)
See ACCT 298. (Fall/Spring)

OFAD 299 Internship (6,12)
On-the-job office occupations training for a minimum of 17 hours per week for six semester hours credit in a two-year program and 34 hours per week for 12 semester hours credit in a four-year program at an approved work station in the business community. Job placement is on the basis of the student's program of study and employment goals. Prerequisites: sophomore standing and consent of instructor. (Fall/Spring)

PSYCHOLOGICAL COUNSELING AND GUIDANCE

School of Humanities and Social Sciences

PCGU 320 Career Development (3)
Theories of, and factors influencing, career development such as assessment, career maturity, decision making, problem solving, and planning. Current developments in adult career and life development will be discussed including life stages, transitions, midlife crisis, stress, and adjustments necessary for career development effectiveness. Prerequisites: PSYC 121 or consent of instructor. (Fall)

PCGU 324 Career Counseling (3)
Types and sources of career information and its various uses in career counseling with special emphasis on decision making theories and processes. Prerequisites: PSYC 121 or consent of instructor. (Fall)

PCGU 396 Topics (1-3)

PCGU 420 Counseling Processes and Techniques (3)
Counseling principles and practices which facilitate interpersonal communication and effective personal and social development. Counseling skills in attending behavior, listening, problem exploration, responding, understanding, and modes of action are examined, discussed and applied in classroom counseling situations. Prerequisites: PSYC 121, or consent of instructor. (Spring)

PCGU 422 Interviewing (3)
Interviewing techniques, methods and interpretation. Interview types will include counseling, intake, assessment, employment, management, performance, and supervisory. Prerequisites: PSYC 121 and 122 or consent of instructor. (Spring)

PCGU 424 Group Processes (3)
Dynamics, procedures and processes of the group. Focus will be on understanding self and learning how to help others develop self-understanding as well as personal and social skill. Prerequisites: PSYC 121, 122. PSYC 420 and SPCH 101 recommended. (Fall)

PCGU 496 Topics (1-3)

PCGU 497 Practicum (4)
Interpersonal training and counseling practice under professional supervision. A typed paper/journal must be submitted for approval and course credit. Prerequisite: senior status and consent of instructor. Practicum must be arranged for the semester prior to enrollment. (Fall/Spring)

PCGU 499 Internship (4)
Counseling experience in external field locations according to needs and career goals of the student. A typed paper/journal must be submitted for approval and course credit. Prerequisite: consent of instructor. Internship must be arranged for the semester prior to enrollment. (Fall/Spring)

PHILOSOPHY

School of Humanities and Social Sciences

PHIL 110 Introduction to Philosophy (3)
Includes an orientation to the discipline's concerns, branches, major schools of thought, and its relationship to other disciplines; a selection of readings from philosophers of all historical periods concerning major philosophical issues; practice in the process of philosophical reasoning, the critical analysis of philosophical writings, and the most basic rules of logic. (Fall/Spring)

PHIL 275 Introduction to Logic (3)
Forms of reasoning, valid versus fallacious inferences, strong versus weak arguments. Designed to increase the ability to reason clearly and correctly and follow and critically evaluate the reasoning of others. (Fall/Spring)

PHIL 352 Ethics (3)
Introduction to theoretical and applied Ethics. Major moral philosophers and moral theories are surveyed; a general approach to moral reasoning is developed. This is then applied to the discussion of recent writings on such issues as euthanasia, abortion, war, capital punishment, affirmative action, etc. Prerequisites: PHIL 110, or 275 or consent of instructor.

PHIL 373 History of Philosophy I (3)
Philosophical problems including relation of the individual to the state, death and the afterlife, the physical universe, and existence of God, as seen through Greek and Medieval thinkers such as Plato, Aristotle, Augustine, and Thomas Aquinas. Prerequisites: PHIL 110, or 275, or consent of instructor. (Every third semester)

PHIL 374 History of Philosophy II (3)
Continuation of PHIL 373, with topics as seen through thinkers of the modern period, such as Hobbes, Berkeley, Kant, Nietzsche, and the Existentialists. Prerequisites: PHIL 110, or 275, or consent of instructor. (Every third semester)

PHIL 375 Twentieth-Century Philosophy (3)
The main philosophical themes and schools of recent philosophy. Characteristic methods and positions of such schools as Pragmatism, Phenomenology, Existentialism, and various Analytic Movements—especially as they bear on central philosophical problems regarding truth, meaning, knowledge of the external world, and the relationship between language and reality. Prerequisites: PHIL 110, or 275, or consent of instructor. (Every third semester)

PHIL 395	**Independent Study**	**(1-3)**
PHIL 396	**Topics**	**(1-3)**
PHIL 495	**Independent Study**	**(1-3)**
PHIL 496	**Topics**	**(1-3)**

PHYSICS

School of Natural Sciences and Mathematics

PHYS 100 Concepts of Physics (3)
A non-mathematical survey of fundamental concepts in physics. Particular attention is given to the cultural development of these ideas. The roots of physics are traced from early Greek thought through the Renaissance. Next, the Newtonian revolution of the seventeenth and eighteenth centuries is studied, followed by the nineteenth-century rise of field theory and thermodynamics. The course concludes with a discussion of the simple ideas underlying relativity and modern quantum theory. These latter topics include the elementary building blocks of matter and the unification of force. Lecture demonstrations are used throughout the course. (Fall)

PHYS 101 Elementary Astronomy (3)
A nonmathematical introduction to modern stellar and extragalactic astronomy. Topics include planetary exploration, stellar evolution, galaxies, and the big-bang cosmology. Current research results are discussed. Evening observing will be scheduled when possible. (Spring)

PHYS 111, 112 General Physics (4,4)
PHYS 111L,112L General Physics Laboratory (1,1)
A survey of physics fundamentals. Topics include mechanics, electricity, magnetism, thermodynamics, sound, optics, and modern physics. Problem solving is emphasized. Prerequisite: a mastery of algebra and trigonometry. Four lectures and one two-hour laboratory per week. (Fall/Spring)

PHYS 121 Classical Physics I (4)
First of a series of foundation physics courses for scientists and engineers. Newtonian mechanics is used to model the behavior of matter. Principles of particle motion are discussed in the context of momentum and energy conservation laws. Specific force laws are used to analyze problems drawn from engineering, biology, astronomy and atomic physics. Galilean relativity is discussed and special relativity introduced. Cultural as well as philosophical and practical aspects of physics are examined. The language of calculus and vector spaces is used throughout. Corequisite: MATH 151. (Fall/Spring)

PHYS 122 Classical Physics II (4)
PHYS 122L Experimental Mechanics Laboratory (1)
A continuation of PHYS 121 primarily concentrating on many-particle systems and matter in bulk. General conservation laws are developed and used to analyze collisions. Further applications are made to rigid body dynamics, oscillations, and wave motion. Elastic solids and fluids are discussed. Special relativity is studied. The course concludes with an introduction to thermodynamics and statistical mechanics. Corequisite: MATH 152. Prerequisite: PHYS 121. Four lectures and one two-hour laboratory per week. (Fall/Spring)

PHYS 223 Classical Physics III (3)
PHYS 223L Experimental Electromagnetism Laboratory (1)
A foundation course in electromagnetic theory. The field concept is introduced with static electric and magnetic fields, both in free space and in matter. Electrodynamics is developed, including a discussion of Kirchoff's laws and circuit concepts. The course concludes with Maxwell's equations and a discussion of radiation. Laboratory work concentrates on the properties of fields and charged matter and on the experimental foundations of optics. Elementary electronic circuit design is included. Three lectures and one two-hour laboratory per week. Corequisite: MATH 253. Prerequisite: PHYS 122. (Fall/Spring)

PHYS 311 Electromagnetic Theory (3)
A mature study of electromagnetic fields. The course begins with a review of Maxwell's equations. Static fields are next analyzed and multipole expansion techniques exploited. Fields in dielectric and magnetic materials are then examined, and capacitance and inductance introduced. Electrodynamics is developed, along with concepts of field momentum and energy. The role of special relativity is emphasized. Electromagnetic wave propagation and radiation are the concluding topics of the course. Vector analysis in both integral and differential forms is used throughout. Prerequisites: PHYS 223, PHYS 223L, MATH 260. (Fall)

PHYS 320 Modern Physics (3)
An introduction to relativity and quantum theory. Applications of the theory are chosen from atomic and nuclear physics and from solid-state physics. The course concludes with a discussion of quarks, leptons, and the unification of force. Prerequisite: PHYS 122. (Fall)

PHYS 321 Quantum Theory I (3)
A foundation course in quantum physics. No prior background in modern physics is assumed of students. The failure of classical physics is first discussed, with particular attention given to thermal radiation, photons, the Rutherford- Bohr atom, and the de Broglie wave hypothesis. The Schroedinger wave theory for single particles is then used to introduce modern concepts. Measurement theory, wave packets, square-well potentials and harmonic oscillators are examined in a one-dimensional context. The time-dependent and stationary-state formalisms are both developed. The entire subject is set in the frame-work of Hilbert space, and operator algebra is used throughout. Prerequisites: PHYS 223 and MATH 260. (Spring)

PHYS 322 Quantum Theory II (3)
A continuation of PHYS 321. Quantum theory is extended to three dimensions. Symmetry principles are introduced. Angular momentum conservation is discussed and particle spin defined. The quantum theory of many-particle systems is then studied, with particular attention given to simple atoms. Fermi-Dirac and Bose-Einstein statistics are introduced. Perturbation theory is developed and applied to the study of atoms and their interaction with radiation. A brief discussion of quantum field theory concludes the course. Prerequisite: PHYS 321. (Fall)

PHYS 331, 332 Junior Laboratory I, II (2,2)
A course in experiment design and technique. Laboratory investigations provide experience in instrumental methods, planning of laboratory experiments, data analysis, preparation of reports according to professional standards, and training in the use of microprocessors for data acquisition and processing. The experiments to be performed are selected from electromagnetism, atomic, nuclear, solid-state, and high-energy physics. Prerequisites: PHYS 223 and 223L. Two two-hour laboratories per week. (Fall/Spring)

PHYS 352 History and Philosophy of Physics (3)
Material varies from year-to-year. The course addresses problems in the interpretation and development of physics. Case studies of crucial experiments are analyzed. The interaction of physics with other philosophical and cultural pursuits is discussed. Prerequisite: one year of physics or consent of instructor. (Fall/Spring, on demand)

PHYS 362 Statistical and Thermal Physics (3)
A study of the physics of bulk matter. Beginning with fundamental principles of quantum mechanics, statistical methods are employed to explain the macroscopic laws of thermodynamics and to make detailed predictions about the large-scale behavior of solids, liquids, and gases. Applications include the specific heat of solids, thermal radiation, magnetic susceptibilities, stellar equilibrium and chemical reactions. Corequisite: MATH 260. Prerequisite: PHYS 122. (Spring)

PHYS 395 Independent Study (1-3)

PHYS 396 Topics (1-3)

PHYS 421 Advanced Dynamics (3)
A survey of analytical methods in classical physics. The Lagrangian formulation of mechanics is used to examine various applications, including rigid-body motion, celestial mechanics, and collision theory. Symmetry principles and accompanying conservation laws are introduced. The course concludes with an introduction to Hamilton's equations and field theory. Prerequisites: PHYS 223 and MATH 260. (Fall, alternate years)

PHYS 432 Nuclear and High-Energy Physics (3)
An introduction to the structure and interactions of nuclear and subnuclear particles. Topics include a survey of the intrinsic properties of nuclei, descriptions of various nuclear models, studies of radioactivity and nuclear reactions, and an overview of the technologies of high-energy accelerators and detectors. The course concludes with an introduction to the properties and structures of elementary particles and discussions of current developments in unified theories of force. Prerequisite: PHYS 322. (Spring, alternate years)

PHYS 441 Solid State Physics (3)
The structure and properties of solids. This course is a study of the crystalline state of matter, including crystal classifications, vibrational specific heats, electronic structures and conductivities, cohesive energies, magnetic susceptibility, and optical properties. Prerequisite: PHYS 322. (Spring, alternate years)

PHYS 482 Senior Research (1)
An individual research project, supervised by a faculty adviser. The project may be selected from experimental or theoretical physics. The research concludes with a formal report written in accordance with the American Institute of Physics Style Manual. Normally taken in the second semester of the senior year. Prerequisite: senior standing and consent of instructor. One one-hour consultation per week. (Fall/Spring)

PHYS 494 Seminar (1)
A forum for topical physics. In this seminar, faculty and students of physics participate in both informal discussions and formal oral presentations of selected topics of scientific interest, including significant current advances and crucial historical developments. The course may be repeated for a maximum of four semester hours of credit. Prerequisite: upper division standing and consent of instructor. (Fall/Spring)

PHYS 495 Independent Study (1-3)

PHYS 496 Topics (1-3)

POLITICAL SCIENCE

School of Humanities and Social Sciences

POLS 101 American Government (3)
Structures and functions of the American political system and the constitutional development of federalism and separation of powers. Also, citizen participation and influence in politics, the congress, presidency and the supreme court, and public policy including civil rights and liberties. (Fall/Spring)

POLS 110 Development of the American Constitution (3)
Historical overview of the making of the U.S. Constitution, including examination of early documents and philosophies that influenced the writers of the document. Prerequisite: POLS 101. (Spring)

POLS 236 State and Local Government (3)
Theories of state formation and constitutional development, city charters, county government, and intergovernmental relations with emphasis on Colorado. (Fall/Spring)

POLS 240 Parliamentary Procedure (2)
A study of parliamentary procedure based on Robert's Rules of Order. The course includes the study of the process, history, development, and limited practice of parliamentary procedure. (Fall/Spring)

POLS 261 Comparative Politics (3)
Introduction to conceptual models and approaches utilized in the comparative study of nations and their politics. Application of these theories to selected democratic, communist, and developing political systems. Prerequisite: sophomore standing. (Fall)

POLS 325 The American Presidency (3)
A study of the American chief executive, emphasizing the historical development of the office, the various functions of the modern chief executive and a brief comparison with the executive officer of other national states. Prerequisites: POLS 101 or consent of instructor. (Fall)

POLS 342 Public Administration (3)
Historical development of public administration including organizational structure and theory, management, personnel administration, fiscal administration, and administrative responsibility. Prerequisites: POLS 101. (Fall)

POLS 345 Political Parties and Interest Groups (3)
Development of political parties and interest groups in the United States and their role in contemporary politics. Includes focus on elections, voting behavior, and the dynamics of public opinion. Prerequisites: POLS 101 or consent of instructor. (Fall)

POLS 350 American Political Thought (3)
Political ideas, theories, and concepts that have shaped American political institutions. Prerequisites: POLS 101, or equivalent, or consent of instructor. (Spring)

POLS 365 European Government and Politics (3)
Study of the political systems of Great Britain, France, Federal Republic of Germany, Soviet Union and other European nations. Emphasizes political development, the sources, processes and evaluation of policy making, and contemporary challenges facing these countries. (Alternate Spring)

POLS 370 World Politics (3)
Introduction to the structures, processes, and behaviors shaping the world political configuration. Emphasis on states and their interactions as well as non-state actors and the cultural, economic and environmental forces, issues, and resources influencing an emerging world community. Prerequisites: POLS 101 or HIST 102. (Spring)

POLS 395 Independent Study (1-3)

POLS 396 Topics (1-3)

POLS 412 Constitutional Law (3)
Selected decisions of the Supreme Court of the United States emphasizing recent cases involving freedom of religion and speech, equal protection of the laws, and criminal procedure. Prerequisite: 6 hours of political science. (Spring)

POLS 424 The Legislative Process (3)
A study of the legislative process emphasizing the U.S. Congress. Attention will be given to the development of legislative systems, the operation of legislatures, the election of legislators, and a comparison with legislatures in other national states. Prerequisites: POLS 101 or consent of instructor. (Spring)

POLS 428 The American Court System (3)
The American court system; local, state, and national, including consideration of the impact of prosecutors, defense personnel, judges, and other factors on court decisions and the criminal justice system. (Spring, alternate years)

POLS 452 Political Theory:=Classical and Medieval (3)
POLS 453 Political Theory: Modern (3)
Study of the development of political theory in the Western tradition. Emphasizes the teaching of main thinkers: Socrates, Plato, Aristotle, Augustine, Aquinas, More, Machiavelli, Hobbes, Locke, Rousseau, Mill, and Marx. Develops ideas in relation to historical and cultural contexts, textual consistency, and the evolving tradition of political discourse in Western civilization. (Fall/Spring)

POLS 475 American Foreign and National Security Policy (3)
American foreign and national security policy with emphasis on 1945 to the present and beyond. Foreign and domestic factors shaping policy, the mechanisms and dynamics of policy making, the role of perception and motives underlying decision and action, and case studies of historical crises and contemporary debates are examined. (Spring, alternate years)

POLS 490 **Senior Seminar for Political Science** (3)
Arranged tutorials and seminars with political science faculty and students, design and execution of a research project, and submission of a senior thesis. Prerequisites: senior standing. (Fall/Spring)

POLS 495 **Independent Study** (1-3)

POLS 496 **Topics** (1-3)

POLS 499 **Internship** (1-15)
May be performed in areas relating to Political Science, such as civic, political, or legal. Internships will be conducted in Mesa County, the Denver legislature, or in Washington, D.C. Prerequisites: junior or senior standing. (Summer/Fall/Spring)

PARKS AND RECREATION RESOURCE MANAGEMENT

School of Professional Studies

PRRM 200 **Cultural Foundations of Play, Recreation, Leisure** (2)
Psychological, physiological, and sociological influences which impact the technological, economic, and political significance of play, recreation, and leisure in American society. (Fall)

PRRM 210 **The Parks and Recreation Professions** (2)
History and development of formalized park and recreation professions including specialized professional competencies, agency duties, professional development, organizational structure, and ethics. (Spring)

PRRM 220 **Professional Foundations of Therapeutic Recreation** (3)
Introduction to content and service of therapeutic recreation. Includes public and clinical role and mission, credentialing, professional competency, performance standards, and the understanding of the psychological, sociological, and historical significance of therapeutic recreation. (On demand)

PRRM 300 **Recreation Programming: Designing Experiences** (3)
Comprehensive program methodology with topics on development of program mission statements, assessment of patrons' needs, preparation of program plans, registration systems, pricing, promotion, and development of evaluation models. Prerequisites: PRRM 200. (Fall)

PRRM 305 **Therapeutic Recreation Program Design** (3)
Principles and procedures for a comprehensive systems approach to therapeutic program planning. Topics include program design, implementation, evaluation, activity analysis, and assessment. Prerequisite: PRRM 220. (On demand)

PRRM 310 **Resource Planning: National and State Parks** (3)
Application of design process and procedures for planning, design and construction of national and state park systems. Prerequisite: PRRM 300. (Spring)

PRRM 311 **Resource Planning: Community Recreation Systems** (3)
Application of design process and procedures for the planning, design, and construction of public and semi-public indoor special use facilities. Prerequisites: PRRM 300. (Spring)

PRRM 312 **Resource Planning: Resort Development** (3)
Special planning and design considerations applicable to effective management and operation of private for profit resort businesses. Prerequisite: PRRM 300. (Fall)

PRRM 313 **Resource Planning: Outdoor Play Settings/Children** (3)
Planning, design, and management of outdoor play settings for all children. Topics include site plan and design, setting design and management, play programming, risk management, and the integration of the disabled. Prerequisite: PRRM 300. (Fall)

PRRM 314 **Resource Planning: Therapeutic Systems** (3)
Comprehensive process of planning, evaluating, and adapting areas and facilities for public and private therapeutic service agencies. Prerequisite: PRRM 300, PRRM 320. (On demand)

PRRM 350 Private and Commercial Recreation Systems (3)
Profit-based recreation industry, including managing the recreation enterprise, economic feasibility studies, small business entrepreneurship, market characteristics, professional opportunities, and trade association research and publications. Prerequisites: PRRM 210. (Fall)

PRRM 351 Community Tourism Systems (3)
Community as a tourist destination area with concentration on identification of linkages between tourism industries and local economies, and the process of developing and managing park and recreation resources to serve the tourist. Prerequisites: PRRM 200 and 210. (Spring)

PRRM 352 National and State Park Systems (3)
National and state outdoor recreation resource management systems including a variety of administrative tools applicable to operation and maintenance as well as comprehensive discussion of legislation, land use policy, forest recreation planning, and governmental designation programs. Prerequisites: PRRM 200, 210. (Fall)

PRRM 353 Public and Municipal Parks and Recreation Systems (3)
Agency management applicable to municipal and special recreation and park districts, including topics on fiscal policies and practices, community development, maintenance systems management, revenue resources and budget formulation. Prerequisites: PRRM 200, 210. (Spring)

PRRM 354 Therapeutic Recreation Systems (3)
Interpretation, conceptualization, application and development of professional skills and knowledge necessary for supervising, assessing, and managing therapeutic agency service. Prerequisite: PRRM 220. (On demand)

PRRM 395 Independent Study (1-3)

PRRM 396 Topics (1-3)

PRRM 410 Managing Human Resources in Parks and Recreation (3)
Personnel management for the park and recreation administrator. Topics include recruitment, planning and organizing personnel, leadership, supervision, motivation, performance appraisal, compensation, training, discipline and grievance, employee separations, collective bargaining, and employee well being. Field experience required. Prerequisites: two courses from PRRM 350, 351, 352 or 353. (Fall)

PRRM 420 Financing, Managing & Marketing Recreation/Park Resources (3)
Various techniques of financing, budgeting, and fiscal accountability processes with emphasis on revenue resource development and marketing of services and facilities. Prerequisites: two courses from PRRM 350, 351, 352 or 353. (Fall)

PRRM 430 Computer Applications for Parks, Recreation, and Physical Education (3)
Practical application of computer software for management, design, and operation of public and commercial recreation and fitness industries. Content includes packaged scheduling programs, membership systems, elementary CAD, advanced spreadsheet applications, graphics, advanced DBM systems, and assessment programs. Prerequisite: PRRM 200, 210 and 300. (Spring)

PRRM 440 Research Studies, Methods, and Tools (3)
Purpose, basic procedures, interpretation, and application of research and evaluative methodology for park and recreation services. Includes computer applications and use of elementary statistical packages. Prerequisites: PRRM 300, 430. (Spring)

PRRM 450 Legal Liabilities & Legislative Foundations (2)
Legal foundations affecting the professional responsibilities of athletic, physical education and recreation resource managers. Topics include legal liabilities, legislative processes, incident management, rationale for lawsuits, liability immunity, and risk management planning. Prerequisites: PRRM 210, and two courses chosen from 310, 311, 312 or 313. (Spring)

PRRM 460 Senior Seminar: Issues and Trends (2)
Students review, discuss and apply skills and knowledge for the effective solving of contemporary leisure service problems. Students will identify contemporary issues and trends and apply problem solving models and techniques. Comprehensive exam required. Prerequisites: PRRM 200, 210, 20 hours of upper division PRRM course work. (Spring)

PRRM 491 **Field Experience** **(1-3)**
Placement of upper division students within public and private recreation and park agencies. Selected agencies must meet Mesa State College Supervisory Guidelines. Prerequisite: consent of instructor. (Fall/spring)

PRRM 495 **Independent Study** **(1-3)**

PRRM 496 **Topics** **(1-3)**

PRRM 499 **Internship** **(10)**
A full-time continuing experience in a public or private leisure service agency. A minimum of 400 clock hours must be completed in not less than a ten-week period. Prerequisites: 2.5 GPA in major and application requirements as stated in the Published Handbook for Professional Internship (note: for NTRC certification this requirement must be completed under the direct supervision of a certified therapist), PRRM 410, 420, 450, 460. See additional Internship Handbook requirements. (Summer)

PSYCHOLOGY

School of Humanities and Social Sciences

PSYC 121 **General Psychology I** **(3)**
Fundamental principles of psychology. (Fall/Spring)

PSYC 122 **General Psychology II** **(3)**
Fundamental principles of psychology. Prerequisites: PSYC 121. (Fall/Spring)

PSYC 200 **Psychology of Human Adjustment** **(3)**
Problems of mental health and the strategies useful in the pursuit of effective living in today's society. Introduces abnormal psychology, emphasizing prevention of serious problems through understanding change and growth in the modern world. (Spring)

PSYC 210 **Environmental Psychology** **(3)**
Principles and findings of general psychology applied to the challenge of mankind's living in the environment. Prerequisites: PSYC 121,122 or consent of instructor. (Fall)

PSYC 220 **Psychology of Women** **(3)**
Historical and theoretical considerations in the understanding of women's psychology in areas of physiology, love, work, friendship, marriage, and psychological relationships. (Fall)

PSYC 233 **Human Growth and Development** **(3)**
Developmental principles, ages and stages of the life span, and adjustment techniques. Not intended for behavioral science majors. (Fall/Spring)

PSYC 310 **Child Psychology** **(3)**
A study of the principles of human development and psychology from conception to puberty. Prerequisites: PSYC 121,122. (Spring)

PSYC 311 **Quantitative Research Methods** **(3)**
Application of statistics in psychological research with an emphasis on the selection of appropriate quantitative techniques, computer analysis of data, and interpretation of statistical results within the context of the research endeavor. Topics to be covered include descriptive statistics, hypothesis testing, parametric and non-parametric statistics. Prerequisites: PSYC 121, PSYC 122, STAT 200. (Spring)

PSYC 312 **Experimental Psychology** **(2)**
PSYC 312L **Experimental Psychology Laboratory** **(2)**
Fundamentals of experimental methodology. Application of principles of laboratory research in areas of psychophysics, learning and memory, and biofeedback. Formal reports of projects required. Prerequisites: PSYC 121,122, Stat 200. (Spring)

PSYC 314 **Psychology of Learning** (2)
PSYC 314L **Psychology of Learning Laboratory** (2)
Classic and modern explanations of the phenomena of learning in both lower animals and humans. Laboratory experiments in classical and operant conditioning with formal scientific reports required. Prerequisites: PSYC 121,122, STAT 200, consent of instructor. (Fall)

PSYC 320 **Social Psychology** (3)
Social influences upon behavior with consideration given to topics such as: social perception, attitude formation and change, communication, and leadership. Prerequisites: PSYC 121. (Fall)

PSYC 322 **Motivation** (3)
Classical and contemporary psychological explanations of forces that originate, direct, and sustain human behavior. Prerequisites: PSYC 121,122,314. (Spring)

PSYC 330 **Psychology of Adolescents and Young Adults** (3)
Study of principles of human development (biological, cognitive, and emotional) from puberty through young adulthood. Prerequisites: PSYC 121, 122. (Fall)

PSYC 332 **Individual and Group Differences** (3)
The ways and extent to which individuals and groups differ from one another and of the factors responsible for those differences. (On demand)

PSYC 340 **Abnormal Psychology** (3)
Concepts related to psychopathology and personality disorders including functional causation, general psychological theory, and behavior deviation patterns. Prerequisites: PSYC 121, 122. (Fall)

PSYC 350 **Psychology of Adulthood** (3)
Study of principles of human development (biological, cognitive, and emotional) from the latter part of young adulthood through late adulthood. Particular emphasis will be placed on problems of the older adult, i.e., health, housing, finances, mobility, retirement and death. Prerequisites: PSYC 121, 122. (Spring)

PSYC 395 **Independent Study** (1-3)

PSYC 396 **Topics** (1-3)

PSYC 400 **Psychological Testing** (3)
Theory, problems, methods, and content of psychological measurement, including concepts of the purpose of testing, test administration and scoring, standardization, reliability, validity test evaluation, and a survey of the major tests used in educational and psychological testing. Prerequisites: PSYC 121,122, STAT 200. (Fall)

PSYC 412 **Industrial and Organizational Psychology** (3)
Psychological principles applied to formal, productive organizations such as businesses, governments, and schools. Personnel selection, placement, training, evaluation, motivation to work, job satisfaction, and morale are examined. Counts as a management course for BBA candidates. Prerequisites: PSYC 121, STAT 200, or consent of instructor. (Spring)

PSYC 414 **Systems and Theories of Psychology** (3)
Systems and theories of modern psychology and the development of scientific psychology since 1879. Prerequisites: PSYC 121,122 or at least 12 semester hours upper division psychology course work or consent of instructor. (Spring)

PSYC 416 **Memory and Cognition** (3)
Study of the mental processes that underlie our abilities to recognize stimuli, think, remember, learn language, and solve problems. Current research in each of these areas will be discussed. Includes a research paper written in APA style. Prerequisites: PSYC 121, 122 or consent of instructor. (Spring)

PSYC 420 **Personality** (3)
Personality theories from the time of Freud through the present emphasizing the development and functioning of the normal personality. Prerequisites: PSYC 121,122. (Spring)

PSYC 422 **Sensation and Perception** (3)
Visual and auditory information processing systems. Includes frequent classroom demonstrations and occasional experiments. Prerequisites: PSYC 121,122, STAT 200. (On demand)

PSYC 430 Biopsychology (3)
The biological bases of the behaviors of the organism, emphasizing the structure and function of the nervous system. The role of biological factors in such behaviors as sleep, sexual behavior, drug addiction, emotion, etc. will be examined. Prerequisites: PSYC 121,122; biology course recommended. (Spring)

PSYC 495 Independent Study (1-3)

PSYC 496 Topics (1-3)

RADIOLOGIC TECHNOLOGY

School of Professional Studies

RADT 110 Radiologic Introduction (3)
Overview of radiologic technology with emphasis on history, the health-care delivery system, ethics, professional conduct, organization and development, introduction to medical terminology, communications, body mechanics, asepsis, vital signs, and emergencies. This course also presents an introduction to the educational program and basic radiation protection. Prerequisite: acceptance into the Radiology Program.

RADT 121 Radiologic Technology I (2)

RADT 121L Radiologic Technology I Laboratory (1)
Instruction in every phase of radiologic technology in an integrated coverage of appendicular skeletal system, abdomen, thoracic viscera, and body systems. Radiographic anatomy and positioning are discussed and applied in the energized laboratory. Prerequisite: RADT 110.

RADT 122 Radiologic Principles I (2)
RADT 122L Radiologic Principles I Laboratory (1)
Fundamentals of factors which govern and influence the radiographic image receptor, equipment, accessory devices, exposure mathematics, manual and automatic processing. Technical and prime exposure factors are discussed and applied in the energized laboratory. Prerequisite: RADT 110.

RADT 123 Clinical Experience I (4)
Areas covered in RADT 121 and 122 emphasized. Includes one hour of film critique provided by the clinical instructor. Prerequisite: RADT 110.

RADT 125 Radiologic Science I (2)
Basic physics, fundamentals of x-ray generating equipment, x-ray production and interaction, beam characteristics, and units of measurement. Prerequisite: RADT 110.

RADT 131 Radiologic Technology II (2)
RADT 131L Radiologic Technology II Laboratory (1)
Continuation of RADT 121 with instruction in every phase of radiography of the axial skeleton, digestive system, urinary system, cranium, spinal column, and facial bones. Prerequisites: RADT 121, 121L, 122, 122L, 125.

RADT 132 Radiologic Principles II (2)
RADT 132L Radiologic Principles II Laboratory (1)
Continuation of RADT 122 including equipment utilized to produce diagnostic images, recording media and techniques, quality assurance and computer applications in diagnostic radiology. Prerequisites: RADT 121, 121L, 122, 122L, 125.

RADT 133 Clinical Experience II (4)
Continuation of RADT 123 in all phases of radiology. Includes one hour a week of film critique provided by the clinical instructor. Prerequisite: RADT 123 or consent of instructor.

RADT 135 Radiologic Science II (2)
Principles of radiation interaction in cells and the effect and factors affecting cell response to radiation, acute and chronic effects of radiation, maximum permissible dose, regulatory involvement, and radiation protection responsibilities by the radiographer to patients, personnel, and the public. Prerequisites: RADT 121, 121L, 122, 122L, 125.

RADT 243 **Clinical Experience III** **(10)**
Continuation of RADT 133 in all phases of radiology. Emphasis on material presented in RADT 121, 122, 131 and 132. Includes film critique provided by the clinical instructor or radiologist. Prerequisite: completion of all 100 level radiology courses.

RADT 251 **Radiologic Technology III** **(3)**
Special equipment, opaque media, radiographic anatomy, and pathology involved in specialized and highly technical procedures. Pharmacology is also covered. Prerequisite: all RADT 100 level lecture and laboratory courses.

RADT 253 **Clinical Experience IV** **(10)**
Continuation of RADT 243 in all phases of radiology. Includes film critique provided by the clinical instructor or radiologist. Prerequisites: RADT 243 or consent of instructor.

RADT 261 **Radiologic Technology IV** **(3)**
Departmental administration, radiologic records, and job-seeking skills. The last few weeks of this course are devoted to a review and preparation for the national registry examination. Prerequisites: all RADT 100 level lecture and laboratory courses.

RADT 263 **Clinical Experience V** **(10)**
Continuation of RADT 253 in all phases of radiology. Includes film critique provided by the clinical instructor or radiologist. Prerequisites: RADT 253 or consent of instructor.

SOCIAL SCIENCE

School of Humanities and Social Sciences

SOCI 199 **Internship** **(1,2)**
Social science students explore areas of interest through work experience in schools, public offices, human services agencies, etc. (Fall/Spring)

SOCI 310 **Methods of Social Research** **(3)**
Research methods and their application to the social sciences. Prerequisites: PSYC 121,122 or SOCO 260 and STAT 200. (Spring)

SOCI 340 **Methods of Teaching Social Studies: Secondary Schools** **(3)**
Examination and comparison of the social studies, exploring both new and traditional curricula, philosophies, and teaching methods. Prerequisites: upper division status and 21 semester hours of social sciences. (On demand)

SOCI 351 **History of Ideas: Ancient and Medieval Periods** **(3)**
The major ideas of man and society in ancient Greece and Rome with attention to social conditions influencing their development and transmission into the social thought of Medieval Europe. (On demand)

SOCI 352 **History of Ideas: Modern Period** **(3)**
The emergence of the Idea of Progress, a set of ideas which underlie the social sciences, including history writing. Critiques the effectiveness of these ideas for a social science capable of meeting the problems of modern society. Prerequisites: SOCI 351 or PHIL 353 or consent of instructor. (On demand)

SOCI 395 **Independent Study** **(1-3)**

SOCI 396 **Topics** **(1-3)**

SOCI 495 **Independent Study** **(1-3)**

SOCI 496 **Topics** **(1-3)**

SOCIOLOGY

School of Humanities and Social Sciences

SOCO 144 Marriage and the Family (3)
Sociology of the marriage and family institutions in contemporary America. Includes an examination of important aspects of courtship and marriage, problems commonly experienced in contemporary man-woman relationships, parenting in modern America, and alternatives to traditional marriage. (Fall/Spring)

SOCO 260 General Sociology (3)
Sociological concepts designed to acquaint students with terminology, basic principles, and important theories. Not open to freshmen. (Fall)

SOCO 264 Social Problems (3)
Major contemporary social problems including crime, race relations, war, educational systems, unequal distribution of wealth, and political apathy. Prerequisite: Sophomore standing. (Spring)

SOCO 300 Political Sociology (3)
The interactions and interrelationships between social and political forces. Prerequisite: SOCO 260, or POLS 101 or consent of instructor. (Spring)

SOCO 310 Sociology of Religion (3)
The social and cultural manifestations of religion giving attention to the insights of sociologists, recent studies, and contemporary social movements. Prerequisite: SOCO 260 or consent of instructor. (Fall)

SOCO 312 Collective Behavior and Popular Culture (3)
The dynamics of forming new social structures with emphasis on contrasting popular cultures and their structures with collective behavior models of the study areas. (On demand)

SOCO 314 Population Impact Problems and Urbanization (3)
Surveys population problems and theories of population growth, industrialization, and urbanization. (On demand)

SOCO 316 Social Stratification (3)
Major theories regarding the causes and effects of the differential distribution of desirables by race, social class, and other variables. Prerequisites: SOCO 260 or consent of instructor. (Spring)

SOCO 330 Crime and Delinquency (3)
Crime, delinquency, and deviance including the social and psychological factors of such behavior, trends in theory, correctional procedures, control, prevention, and laws. Prerequisite: SOCO 260 or consent of instructor. (Fall)

SOCO 350 Sociology of Death and Dying (3)
A critical review of concepts and findings of social scientists and a semi-scientific review of literature dealing with death. (Fall)

SOCO 360 Social Influences of Small Groups (3)
Small-group processes in schools, peer groups, industry, and other selected institutions; small groups as related to the larger social system; group structure, communications, and the dynamics of social interaction. (On demand)

SOCO 395 Independent Study (1-3)

SOCO 396 Topics (1-3)

SOCO 400 History of Sociology (3)
The development of sociology as a discipline from early times to the present. Prerequisite: SOCO 260 or consent of instructor. (Fall)

SOCO 410 Contemporary Social Theory (3)
Sociological theories emphasizing 20th century contributions and the relationships of sociology to allied fields such as anthropology, psychology, economics, and political science. Prerequisite: SOCO 260 or consent of instructor. (Spring)

SOCO 495 **Independent Study** **(1-3)**

SOCO 496 **Topics** **(1-3)**

SPEECH

School of Humanities and Social Sciences

SPCH 101 **Interpersonal Communications** **(3)**
Language, listening, response, defense of statement, and nonverbal communication between two or more people. (Fall/Spring)

SPCH 102 **Speechmaking** **(3)**
The preparation, organization, and delivery of a speech. (Fall/Spring)

SPCH 112 **Voice and Diction** **(3)**
The use of the speaking voice emphasizing voice placement, speech sounds, breathe control, projection, and the phonetic alphabet. Recommended for theatre majors, teachers, pre-law, ministers and business majors. (Fall)

SPCH 231 **Debate** **(3)**
Research and development of various types of debate formats using national and international topics of current interest. (On demand)

SPCH 303 **Nonverbal Communication** **(3)**
The opportunity to observe, record and interpret the nonverbal dimensions of communication behavior and the opportunity to enhance awareness and skill in nonverbal communication behavior in mass media, law, theatre, group dynamics, etc. (Spring)

SPCH 304 **Communication and Conflict** **(3)**
The nature of conflict, conflict structure, conflict styles, and the use of "power" in conflicts. Application of theories to analyze and set goals to plan strategies and tactics. Study of intervention principles and practices. Prerequisites: upper division standing. (Alternate Spring)

SPCH 395 **Independent Study** **(1-3)**

SPCH 396 **Topics** **(1-3)**

SPCH 403 **Teaching of Speech and Drama** **(3)**
Teaching communication, speechmaking, debate and discussion, creative drama, oral interpretation, play selection and direction in the public schools. Prerequisite: junior standing in English education or speech/theatre programs. (Fall)

SPCH 495 **Independent Study** **(1-3)**

SPCH 496 **Topics** **(1-3)**

STATISTICS

School of Natural Sciences and Mathematics

STAT 200 **Probability and Statistics** **(3)**
Descriptive statistical methods, elementary probability, sample distribution, binomial, normal, t, and F distributions, parameter estimation, one and two sample tests of hypothesis, simple correlation and regression analysis, one-way analysis of variance, nonparametric inference, time permitting. Introduction to statistical software. Prerequisites: MATH 110 or 113 or consent of instructor. (Summer/Fall/Spring)

STAT 214 **Business Statistics** **(3)**
Methods employed for the collection, description, and analysis of data for business decision making purposes including descriptive statistical methods, elementary probability, sampling distributions, binomial, normal, t and F distributions, estimation of parameters, one- and two-sample tests of hypothesis, simple linear correlation and regression analysis, one-way analysis of variance. Introduction to statistical software. Prerequisite: MATH 113 or consent of instructor. (Summer/Fall/Spring)

STAT 311 Statistical Methods (3)
Power of statistical tests, categorical data techniques, inference about population means and variances, nonparametric methods, simple and multiple linear regression and correlation, analysis of variance, multiple comparisons, introduction to some experimental designs. Use of statistical software. Prerequisites: STAT 200 or 214. (Fall)

STAT 312 Correlation and Regression (3)
Graphical, numerical, and theoretical least-squares analysis for simple and multiple regression and correlation, including inference methods, diagnostics and remedial measures, simultaneous inference methods, the matrix approach to regression and correlation analysis, stepwise regression procedures. Use of statistical software. Prerequisites: STAT 311 and MATH 265. (Spring)

STAT 313 Sampling Techniques (3)
Methodology of simple random sampling, stratified, systematic cluster, and two-stage sampling is developed. Estimation of sample size determination, and minimized costs of sampling are discussed. Use of resampling statistical software. Prerequisite: STAT 200 or 214. (Spring)

STAT 325 Design and Analysis of Experiments (3)
Design and analysis of single and multiple factor experiments, fixed, mixed and random effects designs including multiple comparison procedures, transformations, fixed, mixed and random effects designs, completely randomized designs, randomized block designs, Latin square designs, and nested designs. Prerequisite: STAT 311. (Alternate years)

STAT 395 Independent Study (1-3)

STAT 396 Topics (1-3)

STAT 450 Mathematical Statistics (3)
The mathematical development of discrete and continuous random variables including the underlying distributions, conditions, and marginal probability laws, sampling distributions and an introduction to the theory of estimations and hypothesis testing. Prerequisites: STAT 311, MATH 253. (Alternate years)

STAT 494 Seminar (1)
Discussions of specialized topics by students, faculty, or visiting professors. One-hour meeting per week. (On demand)

STAT 495 Independent Study (1-3)

STAT 496 Topics (1-3)

THEATRE AND DANCE

School of Humanities and Social Sciences

THEA 114 Summer Theatre (3)
Professional summer theatre experience. The student is expected to participate in all phases of the theatre operation including acting, technical work, directing, box office management, etc. It is advisable for a student enrolled in summer theatre not to enroll in any other class. Five plays are presented in a seven-week period.

THEA 117, 118 Play Production (1,1)
A practical course in stagecraft concerned with the production of plays. The student works in all phases of production. Students will work six hours per week unless other arrangements are made with the instructor. (Fall/Spring)

THEA 119, 120 Technical Performance (1,1)
Direct participation in the technical aspects of various productions. Grade will depend upon the preparatory work involved and upon the final technical production. Students must work a minimum of two productions in order to receive credit. (Fall/Spring)

THEA 128, 129 Theatre Forums (1,1)
Specialized workshops in various aspects of theatre made possible by visiting artists and/or lecturers. (On demand)

THEA 141 Theatre Appreciation (3)
Examination of basic presentation techniques of theatre, motion picture, television, and radio.

THEA 142 Make-Up (2)
All types of make-up for the stage. Students do straight and character make-up and learn the use of crepe hair, prosthesis, and other materials. (Fall)

THEA 143 Costuming (2)
Costume design, construction, and history of costume. (Spring)

THEA 145 Introduction to Dramatic Literature (3)
Dramatic literature from the Greeks to the modern dramatists. (Spring)

THEA 147, 148 Drama Performance (1,1)
Requires a student to appear in a major production on campus. The grade will depend upon the preparatory work on the play's character and upon the final performance. (Fall/Spring)

THEA 151 Acting I: Beginning Acting (3)
Fundamentals of acting through the use of improvisation and study of scenes. Students perform in solo, duo and/or group scenes. (Laboratory includes participation in student-directed plays.) Prerequisite: SPCH 112 or consent of instructor. (Fall)

THEA 152 Acting II: Stage Movement (3)
Basic techniques of gesture, movement styles and combat. Developing an awareness of the use of the body as a means of expression is emphasized. (Spring)

THEA 160 Theatre Studies (1)
Introductory studies for the theatre major in resumes, portfolios, auditions, stage and house managing. Helps to prepare students for juries and professional theatre work experiences. (Fall)

THEA 213 Creative Play Activities-Drama (2)
Creative dramatics in a learning situation. Includes subject matter of interest to anyone in early childhood education, general education, social work, religious education, and/or recreation. (Fall/Spring)

THEA 214 Summer Theatre (3)
See THEA 114.

THEA 217, 218 Play Production (1,1)
See THEA 117, 118. Prerequisites: courses must be taken in sequence or by consent of the instructor. (Fall/Spring)

THEA 219, 220 Technical Performance (1,1)
See THEA 119, 120. (Fall/Spring)

THEA 228, 229 Theatre Forums (1,1)
See THEA 128, 129. (On demand)

THEA 241 Oral Interpretation (3)
The reading aloud of prose, poetry, and essays with the intention of conveying the author's ideas to a listening audience. (On demand)

THEA 243 Theatre Practice: Scene Construction, Painting, and Design (3)
Techniques of construction; painting of scenery; properties for the theatre and basic principles of scene design. (Fall)

THEA 244 Theatre Practice: Beginning Lighting (3)
A basic course in the use of light and instrumentation in various stage productions, including plays, dance concerts, and music programs. (Spring)

THEA 247, 248 Drama Performance (1,1)
See THEA 147, 148. (Fall/Spring)

THEA 270 Music Theatre I (2)
Exploration at the beginning level theories and elements of dance, music and theatre inherent in the Musical Theatre. For students majoring in Fine and Performing Art, Music Theatre Concentration. Corequisite: THEA 270L. Prerequisites: audition or consent of instructor. (Fall)

THEA 270L Music Theatre Performance Laboratory (1)
Practical application of dance, music, and theatre for the individual or the ensemble at the beginning level. Corequisite: THEA 270. Prerequisites: consent of instructor. (Fall)

THEA 314 Summer Theatre (3)
See THEA 114.

THEA 317, 318 Play Production (1,1)
See THEA 117,118. Prerequisites: courses must be taken in sequence or by consent of the instructor. (Fall/Spring)

THEA 319, 320 Technical Performance (1,1)
See THEA 119, 120. (Fall/Spring.)

THEA 328, 329 Theatre Forums (1,1)
See THEA 128, 129. (On demand)

THEA 331 History of Theatre (3)
History of the theatre as an institution and its relationship to the other arts and to the social and economic environment. (Spring)

THEA 341 Musical Theatre History and Literature (3)
In-depth study of the literature and styles of the master composers of music theatre from its beginnings through the present day. Course work is designed for the Musical Theatre major, utilizing lecture and listening lab format and a research paper on a subject of the student's choice. (Spring)

THEA 343 Scene Design (3)
Experience in designing scenery for various types of productions with emphasis on drafting, perspective, and rendering techniques. Pre-requisite: THEA 243 or consent of instructor. (Spring)

THEA 344 Advanced Stage Lighting (3)
Advanced training in the design and execution of lighting for the stage. Prerequisite: THEA 244 or consent of instructor. (Fall)

THEA 345 World Drama (3)
Greek through Elizabethan drama. (Fall)

THEA 347, 348 Drama Performance (1,1)
See THEA 147, 148. (Fall/Spring)

THEA 351 Acting III: Stage Dialects (3)
The use of dialects in performances. Prerequisites: SPCH 112 or knowledge of the International Phonetic alphabet or consent of instructor. (Alternate Spring)

THEA 352 Acting IV: Styles in Acting (3)
Various styles of acting used for the Classical, Elizabethan, Romantic, 19th Century Melodrama and Realistic periods. Prerequisites: THEA 151 and 152 or consent of instructor. (Alternate Fall)

THEA 370 Music Theatre II (2)
Exploration at an advanced level theories and elements of dance, music and theatre. Meant specifically for students majoring in Fine and Performing Arts, Music Theatre Concentration. Corequisite: THEA 370L. Prerequisite: THEA 270 and 270L, or consent of instructor. (Fall)

THEA 370L Music Theatre Performance Laboratory (1)
Practical application of dance, music, and theatre for the individual or the ensemble. Corequisite: THEA 370. Prerequisites: THEA 270 and 270L or consent of instructor. (Fall)

THEA 395 Independent Study (1-3)

THEA 396 Topics (1-3)

THEA 401 Theatre Management (3)
The business aspects of producing plays including publicity, dealing with agents, artists, union representatives, tickets, accounting procedures, and scheduling. Practical experience gained from working with college theatre. (Spring)

THEA 411 American Drama (3)
From the first American playwright to the plays of today. (Spring)

THEA 412 Contemporary Drama (3)
Realistic and absurd playwrights of the world within the past 35 years. (Fall)

THEA 414 Summer Theatre (3)
See THEA 114.

THEA 417, 418 Play Production (1,1)
See THEA 117, 118. Prerequisites: courses must be taken in sequence or by consent of the instructor. (Fall/Spring)

THEA 419, 420 Technical Performance (1,1)
See THEA 119, 120. (Fall/Spring)

THEA 428, 429 Theatre Forums (1,1)
See THEA 128, 129. (On demand)

THEA 445, 446 Projects in Theatre (3,3)
Work experience in various aspects of theatre such as scene/prop design and/or construction, lighting/sound design, sound, costume/makeup design or projects involving acting/directing, music theatre, theatre management, playwriting or other projects deemed worthwhile and vital by the instructor. Prerequisites: consent of instructor. (On demand)

THEA 447, 448 Drama Performance (1,1)
See THEA 147, 148. (Fall/Spring)

THEA 451 Beginning Directing (3)
The fundamentals of play production allowing the student to direct scenes for projects. To receive credit for this course, the student must also complete THEA 452. (Fall)

THEA 452 Advanced Directing (3)
Direction and production of a one-act play for public viewing. Prerequisite: THEA 451 or consent of instructor. (Spring)

THEA 455 Acting V: Advanced Acting (3)
For the Acting/Directing option student interested in polishing and refining the acting art through various techniques in the approach to a role. Prerequisites: THEA 151 and 152 or consent of instructor. (Alternate Spring)

THEA 456 Acting VI: Acting for the Camera (3)
The transition form stage acting techniques to camera acting techniques. Students will have the opportunity to work on camera with simplified sets and properties. Prerequisites: THEA 151 and 152 or consent of instructor. (Alternate Fall)

THEA 457 Acting VII: Auditions (3)
Writing of resume, how to look for an acting job, and the preparation of materials to be used in auditions. Students will be required to prepare for auditioning on a regional level. Prerequisites: THEA 151 and 152 or consent of instructor. (On demand)

THEA 470 Music Theatre III (2)
Exploration on an intermediate level the theories and elements of dance, music and theatre inherent in music theatre. Meant specifically for the students majoring in Fine and Performing Arts, Music Theatre concentration. Corequisites: THEA 470L. Prerequisites: THEA 370 and 370L or consent of instructor. (Fall)

THEA 470L Music Theatre Performance Laboratory (2)
Practical application of dance, music and theatre for the individual or ensemble. Corequisite: THEA 470. Prerequisites: THEA 370 and 370L or consent of instructor. (Fall)

THEA 492 Senior Production Project (3)
Work experience in various aspects of theatre such as scene/prop design and/or construction, lighting/sound design and/or construction, costume/makeup design and/or construction or projects involving acting/directing, music theatre, theatre management, playwriting or other project deemed worthwhile and vital by the instructor. Prerequisites: consent of instructor. (Alternate Spring)

THEA 495 **Independent Study** (1-3)

THEA 496 **Topics** (1-3)

THEA 499 **Internship** (3,6,9)
Work in acting/directing, design/tech, music theatre and theatre management, or other situations that meet the instructor's approval. Prerequisites: senior standing and consent of the instructors. (On demand)

TRAVEL & RECREATION MANAGEMENT

School of Professional Studies

TRAV 101 **Travel Industry I** (3)
Introduction to tourism and its relationship to the business world, an overview of all sectors of business and the components of the travel, tourism, and hospitality industry. Travel methods, destination resorts, and other businesses which serve the traveler are evaluated. A requirement for all Travel, Recreation, and Hospitality Management students. (Fall)

TRAV 102 **Travel Industry II** (3)
Evaluation of job opportunities in the travel, recreation, and hospitality fields. Travel trends, feasibility studies, and marketing techniques are analyzed. Students are provided an opportunity to make preparations and acquire skill instructions for work in the student's career objective. Field trips and visiting lecturers are included. Prerequisite: TRAV 101 or consent of instructor. (Spring)

TRAV 103 **Travel and Tourism Marketing Techniques** (3)
Interpretation of marketing problems, strategies, and techniques of industries engaged in serving the traveler, methods of identifying potential markets, preferences, and likely responses to promotional programs of private and governmental travel entities. Required of all Travel, Recreation, and Hospitality Management students. MARK 231 recommended for baccalaureate students. Prerequisite: TRAV 101 or consent of instructor. (Spring)

TRAV 199 **Employment Concepts** (1)
Introduction of the concepts of employment in conjunction with the internship experience. It will provide students with an opportunity to share their concerns with the instructor and other students, allow employers to discuss the internship with students and assist the student in developing his or her career goals. The student will enroll in this course the spring semester immediately preceding the summer they intend to do their TRAV 299 Internship. Prerequisites: TRAV 101. (Spring)

TRAV 201 **Management in the Travel Industry I** (3)
An opportunity to explore operating techniques and problems of the major industries involved in tourism, travel, and hospitality through the eyes of the operating manager. Specific skills used within various industries are developed. Prerequisite: TRAV 102 or consent of instructor. (Spring)

TRAV 211 **Travel Destinations** (3)
For the individual who plans to work, study, or travel internationally including the professional who is, or plans to be, part of the travel industry. Life styles and current local aspects in foreign destinations are considered and guest lecturers are included. Open to all students but strongly recommended for Travel, Recreation, and Hospitality Management students. (Spring/on demand)

TRAV 215 **Computerized Reservations** (3)
An introductory course providing an overview of operation of a computerized reservations system. Prerequisites: TRAV 101 and 102. (Spring)

TRAV 217 **Hotel Operations** (3)
Introductory course providing an overview of the operation of a hotel front office. This will include the use of the personal computer and state-of-the-art software for reservations, check-in, check-out and creating the daily report. Prerequisite: TRAV 101. (Fall)

TRAV 295 **Independent Study** **(1,2)**

TRAV 296 **Topics** **(1,2,3)**

TRAV 298 **Related Work Experience** **(1,2)**
Practical experience and an opportunity to apply academic knowledge in a work situation approved by the School of Business. Students must apply for this course through their advisers at least six weeks prior to end of the semester preceding the semester in which they wish to take the course. For additional requirements, see adviser. Prerequisite: nine semester hours of course work in the field chosen, cumulative GPA of 2.50 or higher, and consent of instructor. (Fall/Spring)

TRAV 299 **Internship** **(12)**
Classroom studies combined with salaried work in an experience which relates to the student's career goal. Only for, and required of, Travel, Recreation, and Hospitality students. Credit not available through competency or challenge. Prerequisite: TRAV 102, GPA of 2.00 or higher, or consent of instructor. (Summer)

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RICHARD E. BACA (1972), Director, Student Services; B.S., University of Colorado; M.A., Ed.D., University of Northern Colorado.

VELDA M. BAILEY (1982), Director of Continuing Education; A.A., Mesa Junior College; B.A., M.A., University of Northern Colorado.

MICHAEL BLACK (1991), Director of Housing and Auxiliary Services; B.S., Utah State University

BARBARA A. BORST (1981), Librarian, Head of Research Services and Interlibrary Loan; B.A., Sterling College; M.L.S., Library Science, Indiana University.

TINA BRENNAN (1992), Assistant Controller; B.A., Mesa State College.

ELIZABETH BRODAK (1989), Head, Library Reference; B.A., Carthage College; M.L.S., University of Hawaii.

WILLIAM "KIRK" BUNTE (1993), Acting Assistant Director of Admission; B.S., Mesa State College; M.A., Colorado State University.

SCOTT CLOUGH (1991), Assistant Football Coach; B.S., M.S., Colorado State University.

KIMBERLY D. CROSBY (1991), Assistant Director of Admission; B.A., Mesa State College.

RUSTY L. CRICK (1979), Head Volleyball Coach; B.S., M.A., Western State College.

NITA S. CURREY (1991), Director, MSC Montrose Center; B.A., University of Northern Colorado; M.A., University of Oklahoma.

MARIUS G. DEGABRIELE (1990), Coordinator of Non-Traditional Adult Students and Women's Cross Country Coach; B.S., Northern Michigan University.

STEPHEN DREILING (1993), Financial Aid/Admission Counselor, Denver Office, B.B.A., Mesa State College.

TAMMY L. ERICKSON (1990), Assistant Director of Housing and Residencial Life; B.B.A., Mesa State College.

JULIE C. ETHRIDGE (1991), Coordinator, Non-Credit Programs; B.B.A., Mesa State College.

DARRELL FUNK (1993), Assistant Football Coach; B.A., Colorado State University; M.S., University of Illinois.

JAY P. GASS (1991), Controller; B.A., Mesa State College.

DAVID H. GILBERT (1991), Director of Management Information Systems; B.S., Syracuse University.

RONALD GRAY (1988), Assistant Vice President for Financial and Administrative Services/Director of Physical Plant; B.S., South Dakota School of Mines and Technology.

JEFFREY GUOMONE (1993), Acting Assistant Director of Financial Aid; B.S., University of Wyoming.

CHRIS HANKS, (1993), Assistant Football/Baseball Coach; A.A., College of Southern Idaho; B.S., Mesa State College.

THOMAS HARRIS (1991), Assistant Reference Librarian; B.S., M.L.I.S., University of Wisconsin.

JIM HEAPS (1991), Assistant Men's Basketball Coach; B.S., Mesa State College; M.S., Southern Illinois University.

JAY W. HOOD (1994), Head Football Coach; B.A., Ohio Wesleyan University; M.Ed., Bowling Green State University.

M. KATHLEEN JEFFERSON (1974), Associate Director of Housing.

DANIEL JORDAN (1993), Admission Counselor; B.A., Mesa State College.

JANEEN KAMMERER (1990), Vice President for Financial and Administrative Services; B.S., University of Colorado.

KATRINE KAUFMANIS (1992), Director of Public Information and Assistant College Center Director; B.A., Mesa State College; M.P.A., Arizona State University.

BENJAMIN R. KEEFER (1991), Acting Director of Lathrop Center for Continuing Education in Agriculture; A.A.S., Northeastern Junior College; B.S., M.Ed., Ph.D., Colorado State University.

FRANK KELLER (1973), Associate Vice President for Student Services/Director of Academic Records; B.A., Adams State College; M.A., University of Northern Colorado.

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STEVE KIRKHAM (1992), NCAA Compliance Officer/Head Women's Basketball Coach; B.A., University of Northern Colorado; M.S., Ft. Hays State University.

NANCY KOSMICKE (1992), Tutorial Training Coordinator; B.A., McCalester College.

BEVERLY J. MONDRAGON (1989), Professional Staff Assistant to the President.

SUSAN M. MOORE (1982), Bookstore Manager; B.A., Chestnut Hill College.

JERRY W. MOORMAN (1990), Vice President for Student Services and External Affairs; Professor of Business Administration; M.Ed., Delta State University; B.S., Ed.D., Mississippi State University.

JULIE NERI (1993), Gender Equity Specialist; B.S., Cornell University.

GERALD N. NOLAN (1984), Coordinator of Academic Computer Services; B.A., Northern Illinois University; M.A., University of Oregon.

JAMES PARONTO (1990), Director of Intercollegiate Athletics; B.A., M.A., Adams State College; Ed.D., Brigham Young University.

SHERRI L. PE'A (1983), Acting Associate Vice President for Student Life; Director of Admissions; B.A., University of Hawaii, M.A., Adams State College.

MARLA K. PEYTON (1986), Coordinator of Student Employment, Financial Aid Counselor; B.A., Mesa State College; M.B.A., Western State College.

NANCY PIERCE (1992), Vocational Integration Specialist; B.A., M.S., Central Connecticut State University.

ANDREW J. RODRIGUEZ (1989), Director of Purchasing; B.S., University of Northern Colorado.

ROBERT RYAN (1992), Athletic Trainer; B.A., Colorado University; M.A., University of Northern Colorado.

JAMES P. RYBAK, Professional Engineer (1972), Vice President for Academic Affairs; Professor of Engineering and Mathematics; B.S.E.E., Case Western Reserve University; M.S., University of New Mexico; Ph.D., Colorado State University.

PATRICK SCHUTZ (1992), Acting Director of Tutorial and Learning Center; B.S., Eastern Michigan University; M.S., University of Utah.

JACK SMITH (1992), Assistant Area Vocational School Director; B.S., Michigan State University; M.Ed., Ph.D., Colorado State University.

PHILLIP W. SWILLE (1988), Director of Financial Aid; B.A., Adams State College; M.A., Ed.S., Western State College.

KATHLEEN R. TOWER (1972), Special Collections/Government Documents Librarian; Assistant Professor of Library Science; B.M.E., M.A., University of Denver.

DOUGLAS G. TUCKER (1975), Director of Personnel and Payroll; B.A., M.B.A., Western State College.

BERNADETTE WEBER, (1989), Assistant Director of Admission, Denver Office; B.A., Mesa State College.

TERESA M. WILKERSON (1990), Acting Data Information Specialist; B.S., Mesa State College.

TERRI WINDOLPH (1993), Acting Coordinator of Testing Services.

JULIA WOODS (1990), Director of John U. Tomlinson Library; B.A., Kearney State College; M.L.S., University of Oklahoma; M.P.A., Florida International University.
SANDRA WYMORE (1986), Coordinator, Physical and Learning Disabled/Coordinator of Supplemental Services--Handicapped; B.A., University of Denver

+ Deans of Academic Schools
School of Humanities and Social Sciences, Daniel Arosteguy (Acting Dean)
School of Natural Sciences and Mathematics, Robert Kribel
School of Professional Studies, Kenneth Blair

+ Department Chairs
Accounting and Information Technology, David Rogers
Biological Sciences, Phyllis Chowdry
Business Administration, Edward Boehler (Acting Chair)
Computer Science, Mathematics, and Engineering, Edwin C. Hawkins
Fine and Performing Arts, Michael Gerlach
Human Performance and Wellness and Recreation, Byron Wiehe
Languages, Literature and Communications, Janine Rider
Nursing and Allied Health, Judy Goodhart (Acting Chair)
Physical and Environmental Sciences, James Johnson
Social and Behavioral Sciences, Steven Schulte

+ See individual listings under Instructional Personnel.

MESA STATE COLLEGE FACULTY

(Figures in parentheses indicate year of regular appointment to Mesa State College professional staff for half time service or more. Prior temporary or part-time service is not indicated.)

DANIEL J. AROSTEGUY (1976), Professor of Economics; Acting Dean, School of Humanities and Social Sciences, B.S., M.S., University of Nevada-Reno; Ph.D., Colorado State University.
MONTE ATKINSON (1985), Associate Professor of Music; A.S., Snow College, Utah; B.F.A., Utah State University; M.M., D.M.A., University of Illinois.
CHARLES W. BAILEY (1965), Professor of Mathematics; B.A., M.A., University of Northern Colorado.
RICHARD BALLARD (1985), Associate Professor of Biology; B.A., M.S., California State University; Ph.D., Utah State University.
MICHAEL BARON (1993), Assistant Professor of Music; B.A., Beloit College; M.A., University of Wisconsin-Madison; D.M.A., Ohio State University.
BRUCE A. BAUERLE (1972), Professor of Biology; B.A., University of Kansas; M.S., University of Missouri-Kansas City; D.A., University of Northern Colorado.
VIRGINIA L. BEEMER (1968), Professor of Early Childhood Ed; Director of Early Childhood Education Program; B.S., M.A., Northern Arizona University.
RICHARD L. BERKEY (1967), Associate Professor of English; B.A., Fort Lewis College; M.A., Eastern New Mexico University.
PIERRE G. BETTELLI (1985), Assistant Professor of Business Computer Information Systems; B.S., Southern Colorado State College; M.S., Colorado State University.
KENNETH BLAIR (1992), Professor of Business Administration; Dean, School of Professional Studies; B.S., M.S., Colorado State University; Ph.D., Arizona State University.
EDWARD A. BOEHLER, C.P.A. (1981), Professor of Accounting; Acting Chairperson, Department of Business Administration; B.S., University of California-Berkeley; M.B.A., Golden Gate University.
CLARE BOULANGER (1993), Assistant Professor of Anthropology; State University of N.Y.-Plattsburgh; M.A., Ph.D., University of Minnesota.
JAMES R. BROCK (1988), Associate Professor of Engineering Technology and Environmental Restoration Engineering Technology; B.S., M.S., University of Illinois.
ESTHER BROUGHTON (1991), Assistant Professor of English; B.A., Utah State University; M.S., University of Texas.

CLIFFORD C. BRITTON (1964), Professor of Mathematics; B.A., Adams State College; M.A., University of San Diego.

JEFF BRIGHAM (1991), Professor of Teacher Certification; B.A., M.A., University of Wisconsin; Ed.D., University of Wyoming.

C. JAMES BUCKLEY, C.P.A. (1972), Professor of Accounting; B.A., Western State College, M.S.; Colorado State University.

CHRISTIAN J. BUYS (1983), Professor of Psychology; B.A., Hope College; Ph.D., University of Colorado.

SUZANNE CAHILL (1986), Associate Professor of Art; M.F.A., University of Denver.

TENNIE ANN CAPPS (1964), Associate Professor of Office Administration; B.S., M.Bus.Ed., University of Oklahoma.

PERRY H. CARMICHAEL (1969), Associate Professor of Speech; B.A., M.A., Western State College.

LEWIS M. CHERE (1980), Associate Professor of History; B.A., Wilkes College; M.A., University of North Carolina; Ph.D., Washington State University.

PHYLLIS L. CHOWDRY (1976), Professor of Biology; Chairperson, Department of Biology; B.S., University of Denver; M.N.S., Arizona State University; D.A., University of Northern Colorado.

HOLLY COVINGTON (1993), Assistant Professor of Nursing; A.D.N., B.S.N., Mesa College; M.S., University of Colorado.

DAVID M. COX (1981), Professor of Theatre; B.A., Mesa State College; M.F.A., University of Utah.

WILLIAM H. DAVENPORT (1988), Associate Professor of Mathematics; B.S., University of Tennessee; M.S., Texas A & M University; Ph.D., University of Alabama.

JACK DELMORE (1992), Assistant Professor of Music, B.M., University of Lowell, Lowell, MA; M.M., New England Conservatory of Music; D.M.A., University of Arizona.

DALE L. DICKSON (1969), Professor of Business Management; B.S.B.A., University of Denver; M.Ed., Colorado State University; Ed.D., University of Northern Colorado.

SUSAN DICKSON, R.N. (1986), Assistant Professor of Nursing; B.S.N., M.S., University of Colorado.

MATTS G. DJOS (1976), Professor of English; B.A., University of Washington; M.A., University of Idaho; Ph.D., Texas A & M University.

DAVID R. DUFF (1973), Associate Professor of Applied Technology (Commercial Art); B.A., M.Ed., Colorado State University.

ARUN EKTARE (1986), Professor of Computer Science; Ph.D., University of Roorkee (India).

BYRON EVERS (1989), Assistant Professor of Mass Communications; B.S., M.S., Murray State University.

PATRICE FEELY, R.T.(R) (1990), Instructor of Radiologic Technology; A.A.S., Mesa State College

KAREN E. FORD (1984), Professor of Psychology; B.A., Mississippi College; M.A., Northeast Louisiana; Ph.D., University of Mississippi.

MARCIA FORREST, R.N. (1980), Professor of Nursing; M.S.N., University of Miami; Ph.D., University of Texas.

D'ANN FUQUAY (1991), Professor of Computer Science; B.A., Oklahoma Baptist University; M.A., University of Oklahoma; M.S. Colorado State University; D.A., Idaho State University.

JOSE L. GALLEGOS (1976), Professor of English; B.A., Western State College; M.A., Ph.D., University of Colorado.

MICHAEL C. GERLACH (1988), Professor of Theatre; Chairperson, Department of Fine and Performing Arts; B.S., Fairleigh Dickinson University; M.A., Ph.D., University of Michigan.

GORDON GILBERT (1980), Professor of Physics; B.S., M.S., Ph.D., Massachusetts Institute of Technology.

JUDY GOODHART, R.N. (1990), Assistant Professor of Nursing; Acting Chairperson, Department of Nursing and Allied Health; B.S. Loretto Heights; M.S.N., University of Colorado.

THOMAS D. GRAVES (1966), Professor of Counseling and Psychology; B.A., M.A., Adams State College; Ed.D., University of Northern Colorado.

DONNA K. HAFNER (1967), Associate Professor of Mathematics; B.A., University of Northern Colorado; M.A.T., Colorado State University.

ROBERT HAMM (1993), Assistant Professor of Criminal Justice; B.A., M.A., M.P.A., University of Colorado.

CHARLES HARDY (1979), Professor of Art; B.A., Colorado State University; M.F.A., University of Arizona.

EDWIN C. HAWKINS (1963), Professor of Mathematics; Chairperson, Department of Computer Science, Mathematics, and Engineering; B.A., M.A., University of Northern Colorado.

MYRA D. HEINRICH (1983), Professor of Psychology; B.S., M.A., Ph.D., University of North Dakota-Grand Forks.

ELIZABETH HERR (1993), Assistant Professor of Economics; B.A., M.A., Ph.D., University of Colorado.

EDWARD C. HURLBUT (1976), Professor of Biology; B.A., Western State College; M.S., Purdue University; Ph.D., University of Missouri-Columbia.

JAMES B. JOHNSON (1967), Professor of Geology; Chairperson of Department of Physical and Environmental Sciences; B.A., University of Colorado; M.S., University of Utah; Ph.D., University of Colorado.

ROBERT L. JOHNSON (1962), Professor of English; B.A., M.A., Western State College; Ph.D., University of Northern Colorado.

VERNER JOHNSON (1989), Associate Professor of Geology; B.A., M.S., Southern Illinois University; Ph.D., University of Tennessee.

WALTER A. KELLEY (1977), Professor of Biology; B.A., M.S., California State University-Northridge; Ph.D., Colorado State University.

CARL M. KERNS (1969), Professor of Mathematics; B.A., Western State College; M.S., University of Oregon; Ed.D., University of Northern Colorado.

RAYMOND N. KIEFT (1989), President; Professor of Mathematics; B.S., Calvin College; M.S., Colorado State University; Ed.D., University of Northern Colorado.

JOHN KNAPPENBERGER (1992), Assistant Professor of Business Administration; B.A., University of Central Florida; M.B.A., University of Colorado-Denver; Ph.D. University of Colorado-Boulder.

JILL KRAUSS (1992), Assistant Professor of Physical Education; B.A., M.A., Humboldt State University, Arcata, CA; Ph.D., University of New Mexico.

ROBERT KRIBEL (1993), Professor of Physics; Dean, School of Natural Sciences and Mathematics; B.S., University of Notre Dame; M.S., Ph.D., University of California.

ANN LAMBETH (1993), Assistant Professor of Nursing; B.S.N., Columbia Union College, Maryland; M.S.N., Loma Linda University.

GUY LEADBETTER (1993), Assistant Professor of Physical Education; B.A., Bowdoin College, Brunswick; ME, M.S., University of Montana; Ph.D. University of New Mexico.

DANIEL W. MacKENDRICK (1964), Professor of English; B.A., M.A., Western State College.

LAWRENCE J. MADSEN (1988), Associate Professor of Chemistry; B.S., Oregon State University; M.S., Ph.D., University of Washington.

ELGIN A. MALLORY (1990), Assistant Professor of Business Administration; B.S., M.S., Eastern New Mexico University; Ph.D., Colorado State University.

JOHN T. MARSHALL (1982), Professor of Physics; B.S., University of New Mexico; M.S., Ph.D., Washington University.

ROBERT W. MAYER (1987), Assistant Professor of Travel, Recreation and Hospitality; B.A., M.S., University of Northern Colorado.

GARY L. McCALLISTER (1973), Professor of Biology; B.S., M.S., Brigham Young University; D.A., University of Northern Colorado.

DENISE McGINNIS (1993), Associate Professor of Business Computer Information Systems; B. Ed., M.B.A., Ph.D., University of Toledo.

HAROLD B. McINTIRE (1987), Assistant Professor of Business Administration; M.B.A., Eastern New Mexico University.

BETTY McMECHEN, C.P.A. (1986), Associate Professor of Accounting; B.S. Ed., University of Arkansas; M.S., Colorado State University.

WAYNE MEEKER (1966), Professor of Sociology; B.A., M.A., Western State College; Ph.D., University of Colorado.

BARRY P. MICHRINA (1990), Assistant Professor of Anthropology; B.S., St. Francis College; M.S., Colorado State University; Ph.D., Pennsylvania State University.

PRASANTA K. MISRA (1988), Professor of Physics; B.S., M.S., Utkal University, India; Ph.D., Tufts University.

JERRY W. MOORMAN (1990), Professor of Business Administration; Vice President for Student Services and External Affairs; M.Ed., Delta State University; B.S. Ed.D., Mississippi State University.

LAVERNE MOSHER (1990), Assistant Professor of Art; B.A., University of Northern Colorado; M.F.A., Arizona State University.

TIMOTHY NOVOTNY (1989), Associate Professor of Statistics, B.A., B.S., University of Notre Dame; M.A., Creighton University; M.S.B.A., University of Denver; Ph.D., University of Wyoming.

CYNTHIA PATTON (1993), Assistant Professor of English; B.A., University of Kansas, M.A., Ph.D., Indiana University

JOSE M. PEER (1988), Associate Professor of Political Science; B.A., M.A., University of Nevada; Ph.D., Washington State University.

KAREN M. PERRIN (1977), Assistant Professor of Physical Education; B.S., Eastern New Mexico University; M.S., Kansas State University.

DONALD PETERSON (1993), Associate Professor of Recreation; B.S., University of South Dakota; M.S., Springfield College; Ph.D., University of Oregon

RANDY PHILLIS (1993), Assistant Professor of English; B.A., M.A., Wichita State University; Ph.D., Oklahoma State University.

JIHAD QADDOUR (1993), Assistant Professor of Mathematics and Engineering, B.S., Damascus University, Syria; M.S., Ph.D., Wichita State University.

THOMAS RALSER, C.F.A. (1987), Associate Professor of Business Administration; B.S., Illinois State University; M.S., University of Utah.

PAUL L. REDDIN (1970), Professor of History; B.A., Adams State College; M.A., Ph.D., University of Missouri-Columbia.

DAVID M. REES (1983), Professor of Economics; B.S., Utah State University; M.S., Ph.D., University of Oregon.

KRISTINE L. REUSS, R.N. (1990), Assistant Professor of Nursing; B.S., M.S.N., University of Colorado.

JANINE RIDER (1991), Assistant Professor of English; Chairperson, Department of Languages, Literature and Communication; B.A., Miami University; M.A., University of Michigan, Ph.D., Indiana University of Pennsylvania.

JACK E. ROADIFER (1966), Professor of Geology; B.S., M.S., South Dakota School of Mines and Technology; Ph.D., University of Arizona.

MARGARET S. ROBB (1976), Associate Professor of Speech and Drama; B.A., M.A., University of Michigan.

DAVID E. ROGERS, C.P.A. (1975), Professor of Accounting; Chairperson, Department of Accounting and Information Technology; B.A., University of New Mexico; M.B.A., Golden Gate University.

CHERYL ROY (1992), Assistant Professor of Nursing; Coordinator, Nursing, A.D.N.; B.S.N., University of Iowa; M.S.N., University of Colorado-Denver.

JAMES P. RYBAK, Professional Engineer, (1972), Professor of Engineering and Mathematics; Vice President for Academic Affairs; B.S.E.E., Case Western Reserve University; M.S., University of New Mexico; Ph.D., Colorado State University.

ANN J. SANDERS (1971), Assistant Professor of Physical Education; B.A., Eastern Washington State College; M.A., University of Colorado.

P. DOUGLAS SCHAKEL (1978), Instructor, Physical Education; Head Basketball Coach; B.A., Central College; M.A., Adams State College.

PAUL G. SCHNEIDER (1969), Associate Professor of Music; Director of Bands; B.A., M.A., University of Northern Colorado.

STEVEN C. SCHULTE (1989), Associate Professor of History; Chairperson, Department of Social and Behavioral Sciences; B.A. University of Wisconsin-River Falls; M.A. Colorado State University; Ph.D., University of Wyoming.

MICHAEL P. SLAUSON (1990), Assistant Professor of Travel, Recreation, and Hospitality; B.S., Utah State University; M.S., University of Wisconsin.

NORMA J. SMITH (1991), Associate Professor of Teacher Certification; Director of Teacher Education and Certification Program; B.A., University of California; M.Ed., College of Notre Dame, Belmont, CA; Ph.D., University of Denver.

ROBERT P. SOWADA (1966), Assistant Professor of Foreign Languages; B.A., M.A., University of Wyoming.

MARLYN K. SPELMAN (1976), Professor of English; B.A., Ph.D., University of Colorado.

LINDA STAHL (1993), Assistant Professor of Nursing; A.S.D., Community College of Denver; B.S.N., Union College-Denver; M.S.N., University of Colorado.

SUSAN STANTON (1992), Instructor of Nursing, R.N.; B.S.N., Mesa State College; M.S., University of Arizona.

GENE H. STARBUCK (1974), Professor of Sociology; B.A., M.A., Ph.D., University of Colorado.

THEODORE E. SWANSON (1974), Associate Professor of Recreation; B.S., M.A., University of Northern Colorado; Ph.D., Colorado State University.

BARRY C. THARAUD (1976), Professor of English; B.A., M.A., Ph.D., University of California-Santa Barbara.

HARRY A. TIEMANN, JR. (1962), Professor of Psychology; B.A., M.A., University of Colorado; Ph.D., Colorado State University.

KARL F. TOPPER (1991), Assistant Professor of Environmental Restoration Engineering Technology; B.S., University of Florida; M.S., Colorado State University.

KAREN TUINSTRA (1990), Associate Professor of Teacher Certification; B.S., M.S., Drake University; Ph.D., Colorado State University.

MARY A. TURLEY, R.N. (1988), Professor of Nursing; B.S.N., Case Western Reserve University; M.Ed., Cleveland State; Ph.D., University of Texas.

GERALD WEAVER (1991), Associate Professor of Mass Communication; B.A., University of the Pacific; M.A., University of Mississippi.

RUSSELL WALKER (1993), Assistant Professor of Enviromental Restoration; A.B., Oberlin College; Ph.D., Iowa State University.

STEVEN WERMAN (1990), Associate Professor of Biology, B.S., M.S., California State University; Ph.D., University of Miami.

BYRON E. WIEHE (1974), Associate Professor of Physical Education; Chairperson, Department of Human Performance and Wellness and Recreation; Head Baseball Coach; B.A., M.A., Adams State College, Ph.D., University of New Mexico.

EILEEN M. WILLIAMS, R.N. (1968), Professor of Nursing; B.S., University of Denver; M.S., University of Colorado.

GAYLA JO WILSON (1993), Instructor of Business Computer Information Systems; B.A., Mesa State College; M.B.A., University of Southern Colorado.

MARILYN WOUNDED HEAD (1993), Assistant Professor of Art; B.F.A., Minneapolis College of Art/Design; M.F.A., University of South Dakota.

ZHONG CHAO WU (1989), Associate Professor of Mathematics; B.S., China University of Science and Technology; Ph.D., University of Cambridge.

SUSAN A. YEAGER (1988), Associate Professor of Physical Education; B.A., Luther College; M.S., South Dakota State; P.E.D., Indiana University.

JOHN S. ZEIGEL (1975), Professor of English; B.A., Pomona College; M.A., Ph.D., Claremont Graduate School.

MARY E. ZIMMERER (1988), Associate Professor of Business Administration; B.A., M.S., University of Wyoming; Ph.D., Colorado State University.

MESA STATE COLLEGE RECENT EMERITUS FACULTY*

(Figures in parentheses indicate year of retirement.)

ARLYNN D. ANDERSON, B.S., M.Ed., Ed.S., Professor of Applied Technology; Dean, School of Industry and Technology; Director of Vocational-Technical Education (1991).

ORVILLE L. BOGE, B.A., M.A., Professor of Chemistry; University of Northern Colorado (1993).

HAROLD R. BOLLAN, B.S., M.A., Professor of Applied Technology (1987).

LORRAINE N. BOSCHI, B.A., M.A., Associate Professor of English (1984).

JAMES C. CARSTENS, B.A., M.A., Ph.D., Professor of Business Administration; Dean, School of Business (1987).

JOHN D. CHARLESWORTH, B.Ed., M.Ed., Associate Professor of Applied Technology (Auto Mechanics) (1984).

R. BRUCE CROWELL, B.A., M.A., B.D., Ph.D., Professor of English (1992).

JAMES C. DAVIS, B.A., M.A., Professor of Mathematics (1985).

JO F. DORRIS, B.A., M.S., Ed.D., Professor of Psychology (1993).

DELL R. FOUTZ, B.S., M.S., Ph.D., Professor of Geology (1993).

JOSE ELI FRESQUEZ, B.A., M.Ed., Professor of Applied Technology (Auto Mechanics), (1992).

RICHARD R. FROHOCK, B.A., M.A., Associate Professor of English (1992).

BETTY GOFF, B.A., M.A., Assistant Professor of Library Science (1986).

MAEBETH GUYTON, B.F.A., Assistant Professor of Music; (1989).

JOHN G. HENSON, B.S., M.A.T., Professor of Mathematics (1987).

CHRO HUMPHRIES, B.S., Assistant Professor of Physical Education (1987).

BRUCE E. ISAACSON, Assistant Professor of Business (1987).

MILTON F. LENC, B.A., M.S., Ed.D., Professor of Chemistry (1987).

CALVIN J. LUKE, B.S., M.A.T., Associate Professor of Mathematics (1987).

DONALD A. MacKENDRICK, B.S., M.A., Professor of History; Dean, School of Social and Behavioral Sciences (1990).

DONALD E. MEYERS, B.F.A., M.A., Associate Professor of Art (1990).

LOUIS G. MORTON, B.S., M.A., Ed.S.; Professor of Political Science (1993).

THOMAS MOUREY, B.A., M.S., Assistant Professor of Computer Science (1984).

ELIZABETH MUSTEE, R.N., B.S., M.S. Professor of Nursing (1990).

MURIEL MYERS, B.A., M.Ed. Ph.D., Professor of Office Administration (1991).

WAYNE W. NELSON, B.S., M.S., Professor of Physical Education (1987).

W. DAVID PILKENTON, B.A., M.A., Associate Professor of Foreign Language (1987).

WILLIAM E. PUTNAM, B.S., M.S., Ph.D., Professor of Chemistry (1992).

MAI N. ROBINSON, B.S., Assistant Professor of English, (1989).

WILLIAM S. ROBINSON, B.A., M.A., Professor of Drama (1987).

WILMA E. SCHUMANN, R.N., B.Ed., Assistant Professor of Nursing (1984).

CLARICE S. TAYLOR, B.S., M.S., Assistant Professor of Home Economics (1991).

JOHN U. TOMLINSON, B.A., M.S, Ph.D., Distinguished Professor of Political Science (1992).

JERRY D. WETHINGTON, B.S., M.S., Associate Professor of Computer Science (1991).

KENNETH L. WHITE, B.A., M.A., Assistant Professor of Chemistry (1988).

ROBERT D. YOUNGQUIST, B.S., B.A., M.Ed., Associate Professor of Business (1987).

*In accord with Faculty Senate action, this list includes only faculty receiving emeritus status in the past ten years

MESA STATE COLLEGE VISITING PROFESSORS

CARL ABBOTT (1985), Wayne N. Aspinall Professor of History; B.A., Swathmore College; M.A., Ph.D., University of Chicago.

KENNETH E. BOULDING (1984), Wayne N. Aspinall Professor of Economics; B.A., M.A., Oxford (England).

PETER G. BOYLE (1989), Wayne N. Aspinall Professor of History and American Studies; M.A., Glasgow University, Scotland; Ph.D., University of California, Los Angeles.

JOANNE CARLSON BROWN (1988), Cosmicos Professor of Religious Studies; A.B., Mount Holyoke College; M. Div., Garrett Theological Seminary; Ph.D., Boston University.

WALKER CONNOR (1992), Wayne N. Aspinall Professor of Political Science; John R. Reitmayer Professor of Political Science, Trinity College, Hartford, Connecticut.

ROGER DINGMAN (1991), Wayne N. Aspinall Professor of History; B.A., Stanford; M.A., Ph.D. Harvard.

ALLAN DUFFUS (1989), Professor of Accounting; Charles Sturt University, Australia.

EMMANUEL FELDMAN (1987 and 1991), Cosmicos Professor of Religious Studies; B.S., M.A., Johns Hopkins University; Ph.D., Emory University.

RICHARD FUNSTON (1987), Wayne N. Aspinall Professor of Political Science; B.A., M.A., Ph.D., University of California—Los Angeles; J.D., University of San Diego.

JIM (BLOSZIES) HARDIE (1984), Walter Walker Professor in Theatre.

DENIS HINE (1985), Cosmicos Professor of Religious Studies; A.B., St. Benedict's Seminary; S.T.L., S.E.O.L., Oriental Institute, Rome.

ROBERT A. MORTIMER (1986), Wayne N. Aspinall Professor of Political Science; B.A., Wesleyan University; M.A., Ph.D., Columbia University.

FR. THOMAS N. MUNSON (1990 AND 1992), Cosmicos Professor of Theology; A.B., Loyola University; Ph.L., S.T.L. West Baden College; Ph.D., University of Louvain, Belgium.

HARVEY POTTHOFF (1984), Cosmicos Professor of Religious Studies; Th.M., Th.D., Iliff School of Theology.

GLENDA RILEY (1993), Wayne N. Aspinall Professor of History, Political Science and Public Affairs; Ph.D., University of Ohio.

WILLIAM G. ROBBINS (1990), Wayne N. Aspinall Professor of History; B.S. Western Connecticut; M.A., Ph.D., University of Oregon.

JEROME O. STEFFEN (1988), Wayne N. Aspinall Professor of History; B.S., University of Wisconsin, Madison; M.A., Eastern Michigan University; Ph.D., University of Missouri.

BUILDINGS AND EQUIPMENT

Houston Hall (1940), the first permanent building on the present campus, includes classrooms where a variety of subject areas are taught such as business, humanities, and social and behavioral sciences. This structure was totally remodeled in 1979-80.

Wubben Hall (1962), contains classrooms, laboratories, staff offices and storage areas for physical and life sciences, mathematics, computer sciences, and engineering. Special features of the building are an octagonal lecture hall which seats one hundred persons, an electron microscopy laboratory, and the only herbarium in western Colorado.

Lowell Heiny Hall (1967), a four-level building housing faculty and administrative offices, was totally remodeled in 1986-87.

The John U. Tomlinson Library (1986), expands the traditional library concept to include storage and circulation for all commonly used forms of information such as microfilm, microfiche, audio tapes, video tapes, slides, films, records and computer disks.

Walter Walker Fine Arts Center (1969), includes classroom and studio facilities for art, music, and drama together with a multi-purpose Little Theatre.

William A. Medesy Hall (1969, remodeled in 1992), houses offices, classrooms, and laboratories for the Nursing and Allied Health programs, Early Childhood Education, and Commercial Art.

The Industrial Energy Training Center (1982), houses staff offices, training areas and classrooms. Additionally, the College experimental farm, Colorado Environmental Education and Training (CEET) Laboratory and the Lineworker program are at this site. Located at 29 and D Roads, this facility is approximately three miles from the main campus.

The Unified Technical Education Center (1992) houses staff offices, shops, a computer laboratory, training areas and classrooms. UTEC serves high school, college, and continuing education students. Additionally, the facility is available on a contract basis for use by area business and industry. UTEC is located on Blichmann Avenue in the Foresight Industrial Park.

The Mesa State College Montrose Center contains classrooms, a computer lab, and staff offices. It is a leased facility located on East Main Street in Montrose, Colorado. The facility was occupied in late summer 1991 and serves college and continuing education students.

Roe F. Saunders Physical Education Center (1968), provides facilities for a variety of physical education and recreation activities. Major features include an all-purpose gymnasium, swimming and diving pools, locker and shower rooms, classrooms, and office space for the Department of Human Performance and Wellness faculty. Physical education and practice athletic fields are located immediately west of the Physical Education Center with tennis courts to the north of the facility.

Three 200-student residence halls—Tolman, Rait, and Pinon Halls (1966, 1967), provide comfortable living quarters for students. Most of the rooms are doubles, but a few single rooms are available. All rooms are furnished with modern, wall-hung furniture.

Walnut Ridge Apartments (1978), are available to sophomores, juniors, and seniors. Forty-eight attractively furnished two- and three-bedroom units provide complete housekeeping facilities.

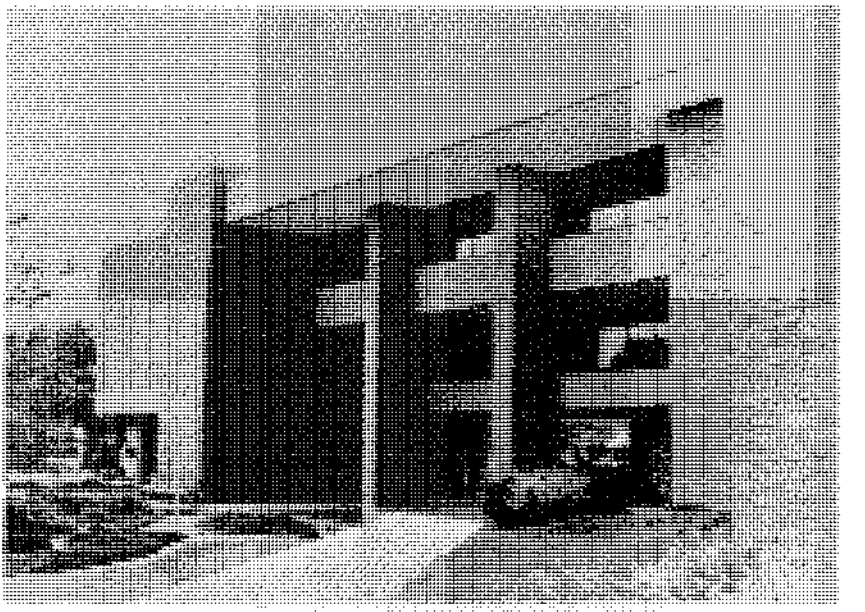
The W. W. Campbell College Center (1962, remodeled 1990-91), contains a bookstore, copy center, art gallery, outdoor program, student government offices, radio station, school paper, gameroom, snack bar, information desk, dining hall, outdoor cafe, student lounges, and meeting rooms.

Mesa State College Day Care Center is organized for the convenience of Mesa State College students who have small children.

The Student Life Center provides a central location for counseling, career development, employment, and placement services.

The Auto-Tutorial Laboratory houses audio-visual, library aids, and simulated patient rooms for specialized training in Nursing and Allied Health programs.

The Student Health Center includes office space and clinical facilities for the College Health Service staff.



UTEC

(Unified Technical Education Center)

2508 Blichmann Avenue
Grand Junction, CO 81505
(303) 248-1999

MESA STATE COLLEGE
CATALOG SUPPLEMENT

1994-95

UNIFIED TECHNICAL EDUCATION CENTER

This supplemental section to the Mesa State College catalog contains program and course information for the Unified Technical Education Center (UTEC) and is provided for the convenience of students pursuing degrees and taking courses at UTEC.

All of the rules, regulations, admission requirements, academic calendar, registrations, costs, graduation requirements, etc., as delineated in the main body of this catalog apply to students at UTEC.

The Unified Technical Education Center, built in 1992, houses staff offices, shops, a computer lab, training areas and classrooms. Located in Grand Junction at 2508 Blichman Avenue in the Foresight Industrial Park, UTEC serves high school, college, and continuing education students.

Program Sheet

A program sheet has been prepared for each degree or certificate offered, specifying in detail the exact course requirements for each. Faculty advisors maintain program sheets for the degree and certificates offered at UTEC. Each student is urged to consult his/her adviser to obtain a program sheet upon enrollment. It is the student's responsibility to maintain the program sheet demonstrating compliance with the degree requirements. The completed program sheet must accompany the petition to graduate and be filed with the Director of Academic Records in order for a student to be considered for graduation. Refer to the "Graduation Requirements" section of the main catalog for further details.

Overload

Students desiring to take more than 21 credit hours during a semester are strongly encouraged to consult with their advisers prior to registration.

Independent Study

Independent study permits the motivated student an opportunity to expand his or her body of knowledge beyond the scope of the standard curriculum. It endeavors to foster qualities of self initiative, organizational skills, self discipline and independent thinking. It is expected that the student will engage in intensive study and research of the topic.

Independent Study satisfies neither general education requirements nor specific course requirements. ***Independent Study hours may be taken as elective hours only.***

Independent Study is available in certain certificate and A.A.S. programs at UTEC in those disciplines listed in the following "Course Descriptions" section.

To be eligible for Independent Study, a student must have a minimum of eight semester hours in the discipline of the Independent Study area, as well as a minimum GPA of 2.75 within that discipline area. The work is to be completed within one semester from the initiation date and is limited to a total of six or fewer semester credit hours taken at Mesa State College. The Director of UTEC must approve any exceptions.

A written contract is to be initiated by the student desiring Independent Study and approved by appropriate faculty and chairperson. The contract must include justification, description, monitoring and evaluation procedures.

Further restrictions apply in some disciplines. One example is the requirement that an application for Independent Study be completed in advance—in some cases six weeks prior to the end of the semester preceding the one in which the student wishes to take the Independent Study. Students wishing to take an Independent Study should check with the appropriate instructor and/or Director of UTEC well in advance.

Cooperative Education

According to the National Commission for Cooperative Education, "Cooperative Education is a working partnership in which an educational institution joins with an employer in a structured relationship. The basic purpose is that of providing a means whereby a student can combine study at the institution with a work experience which is under the supervision of the employer in order to fulfill the total requirements of a particular education program."

Cooperative Education is a three-way partnership involving the student, the employer, and the college. There is a great deal of difference between Cooperative Education and simply holding a job. Cooperative Education is based on learning objectives which are related to the student's academic discipline and are established in cooperation with the student, the employer, the faculty adviser, and others at Mesa State College.

Typically, Cooperative Education is open to junior and senior students. Interested students should consult with their faculty adviser and dean. There are limits in the amount of credit which will apply towards a degree. See "Non-Traditional Credits" in this catalog.

Preparatory Courses

Preparatory courses are available in several subjects at Mesa State College. Numbers of such courses are below the 100 level (e.g., DEVL 090, Developmental Reading). These courses are designed for students needing to strengthen their backgrounds before entering college level classes. All courses numbered 001-099 are preparatory in nature, not intended for transfer purposes and will not usually fulfill degree requirements. Students are encouraged to consult with their advisers about the need to register into these classes.

Students who have passed any ENGL class numbered 100 or above will not be permitted to register *for credit* in any ENGL class numbered below 100. Only the Director of UTEC may approve exceptions to this for students in vocational programs.

Students who have passed any MATH class numbered 100 or above will not be permitted to register *for credit* in any MATH class numbered below 100.

Area Vocational School

Recognizing the national need for better vocationally-trained persons, Mesa State College provides a variety of training opportunities for individuals.

Programs and course offerings are structured to provide job entry, retraining, or skill upgrading. The further the student progresses in a program area, the greater the degree of job skill development experienced.

Students who wish to earn a degree or a certificate must have a high school diploma or a General Education Development (GED) certificate and take the American College Test (ACT) or the Scholastic Aptitude Test (SAT) before enrollment in programs. They must also meet all general education requirements and follow the suggested curriculum for the skill training in which they enroll. Students not seeking a degree or certificate may enroll in individual courses with the consent of the instructors.

Degrees and Certificates Available through UTEC:

Associate of Applied Science (A.A.S.)

Automotive Collision Repair
Automotive Technology
Electronics Technology
Machining Technology
Printing Technology
Welding

Associate of Science (A.S.)

Electronic Engineering Technology
Manufacturing Technology

Certificates of Occupational Proficiency

Automotive Collision Repair
Automotive Service
Computer Drafting Technology
Electric Lineworker
Electronics Technology
Heavy Equipment - Diesel Mechanics
Machine and Manufacturing Trades
Welding

Courses designed to meet special employment needs are offered at various locations and times throughout Mesa County if minimum enrollment requirements can be met.

On the next pages, in alphabetical order, are the programs of study available at UTEC, followed by a description of each course specific to UTEC. General education course descriptions can be found in the "Course Description" section of the main catalog.

AUTOMOTIVE COLLISION REPAIR

Associate of Applied Science

Practical application covers all phases of painting, metal working, and collision repair. The training includes learning necessary shop skills, theory, principles and related subjects needed to enter and then progress competitively in the collision repair career fields. The curriculum follows ICAR and NAISE national competency standards. Students may enter the program any semester.

Minimum semester hours required: 74

1. Course requirements for this degree

	Cr. Hrs.
a. Six (6) semester hours of English satisfied by completing any one of the following sequences: ENGL 086 and 087, or 121 or ENGL 090 and 111 or ENGL 111 and 112, 115, 121, or 129	6
b. Six (6) semester hours selected from the following: ANTH 201, 222 — HIST 101, 102, 131, 132, 136, 137 ECON 201, 202 — POLS 101, 261 ENGL 131 and 132 or 133, 145, 150 — PSYC 121, 122 GEOG 103 — SOCO 144, 260	6
c. Mathematics MATH 015 or higher level math course	3
d. All of the following courses:	54

AUBF 108	Intro to Auto Body Repair	(1)
AUBF 108L	Intro to Auto Body Repair Lab	(3)
AUBF 109	Auto Body Repair & Preparation	(1)
AUBF 109L	Auto Body Repair & Preparation Lab	(3)
AUBF 118	Intro to Painting/Preparation	(1)
AUBF 118L	Intro to Painting/Preparation Lab	(3)
AUBF 119	Complete Auto Painting	(1)
AUBF 119L	Complete Auto Painting Lab	(3)
AUBF 130	Auto Reconditioning	(1)
AUBF 130L	Auto Reconditioning Lab	(2)
AUBF 140	Auto Body Suspension/Alignment	(1)
AUBF 140L	Auto Body Suspension/Alignment Lab	(1)
AUBF 150	Auto Body Welding	(1)
AUBF 150L	Auto Body Welding Lab	(2)
AUBF 200	Panel/Spot Painting	(2)
AUBF 200L	Panel/Spot Painting Lab	(4)
AUBF 210	Unibody and Frame Repair	(2)
AUBF 210L	Unibody and Frame Repair Lab	(2)
AUBF 220	Shop Management	(3)
AUBF 228	Bolt-on Body Service	(1)
AUBF 228L	Bolt-on Body Service Lab	(2)
AUBF 229	Extensive Damage Repair	(1)
AUBF 229L	Extensive Damage Repair Lab	(2)
AUBF 238	Weld-on Body Service	(1)
AUBF 238L	Weld-on Body Service Lab	(3)
AUBF 239	Complete Collision Repair	(1)

AUBF 239L	Complete Collision Repair Lab	(3)
AUBF 250	Estimating	(3)

2. Electives 3
3. Human Performance and Wellness 2
   (See general graduation requirements)
4. Special requirements
   Students seeking an Associate of Applied Science degree must obtain a minimum of 2.00 ("C") in each required AUBF course and must satisfy all other graduation requirements.
5. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

AUTOMOTIVE COLLISION REPAIR

Certificate of Occupational Proficiency

This program of study may begin in either fall or spring semester.

Minimum semester hours required: 34

1. Course requirements for this certificate
   a. All of the following courses:

		Sem Hrs	*Con Hrs*
AUBF 108	Intro to Auto Body Repair	1	15
AUBF 108L	Intro A B Repair Lab	3	85
AUBF 109	A B Repair & Prep	1	15
AUBF 109L	A B Repair & Prep Lab	3	85
AUBF 118	Introduction to Painting/Preparation	1	15
AUBF 118L	Introduction to Paint/Prep Lab	3	85
AUBF 119	Complete Auto Painting	1	15
AUBF 119L	Complete Auto Painting Lab	3	85
AUBF 130	Auto Reconditioning	1	15
AUBF 130L	Auto Reconditioning Lab	2	62
AUBF 150	Auto Body Welding	1	17
AUBF 150L	Auto Body Welding Lab	2	60
AUBF 228	Bolt-on Service	1	15
AUBF 228L	Bolt-on Service Lab	2	60
AUBF 229	Extensive Damage Repair	1	15
AUBF 229L	Ext Damage Repair Lab	2	60
AUBF 295	Independent Study	2	70
AUBF 296	Topics/Competency Based Lab	1	35
MATH	Mathematics Requirement	3	47

2. Special requirements
   a. Students seeking a Certificate of Occupational Proficiency must obtain a minimum of 2.00 ("C") in each AUBF course listed in their program sheet and must satisfy all other graduation requirements.
   b. Students may enroll in additional auto body repair courses and receive a Certificate of Occupational Proficiency as long as the above requirements are met. Veteran's benefits will be based on the above only.
3. See faculty adviser for a program sheet detailing exact and complete requirements for this certificate.

AUTOMOTIVE SERVICE

Certificate of Occupational Proficiency

Offers students a shortened training period with the opportunity to take selected essential courses to prepare for beginning jobs in less technical basic skill areas. Completion is applicable into the second year Associate of Applied Science program.

Minimum semester hours required: 50

1. Course requirements for this degree
   a. All of the following courses:

		Sem Hrs	*Con Hrs*
AUBF 220	Shop Management	3	47
ENGL	English Requirement	3	47
INSA 110	Basic Electronics	3	47
INSA 110L	Basic Electronics Lab	1	30
MANG 121	Human Relations/Business or MATH 020 or higher	3	47
MECA 116	Transaxles and Driveaxles	1	15
MECA 116L	Trans & Driveaxles Lab	2	45
MECA 121	Clutches & Std Trans	2	30
MECA 121L	Clutches/Std Trans Lab	2	45
MECA 142	Suspension/Alignment	3	47
MECA 142L	Suspension/Align Lab	4	90
MECA 222	4x4 Components & Repair	2	30
MECA 222L	4x4 Comp & Repair Lab	3	67
MECH 105	Intro to Shop Practice & Diagnostic Equipment	2	30
MECH 105L	Intro to Shop Practice and Diagnostic Equip Lab	1	22
MECH 113	Internal Combustion Engines	3	45
MECH 113L	Internal Combustion Engines Lab	4	90
MECH 125	Light Duty Brakes	2	30
MECH 125L	Light Duty Brakes Lab	2	45
MECH 133	Climate Control Systems	3	45
MECH 133L	Climate Control Systems Lab	1	23

2. Special requirements
   Sudents seeking a Certificate of Occupational Proficiency must obtain a minimum of 2.00 ("C") in each course, except ENGL and MANG 121 and must satisfy all other graduation requirements.
3. See faculty adviser for a program sheet detailing exact and complete requirements for this certificate.

AUTOMOTIVE TECHNOLOGY

Associate of Applied Science

The Automotive Technology program covers general domestic and foreign car repair. Students learn theory and applications of maintenance and repair procedures for components of an automobile including the proper uses of tools and specialized equipment. Diagnosis and troubleshooting receive special emphasis throughout the program. Instruction includes combination lecture/laboratory situations. Extensive lab work on both mockups and live units is part of the training. Mesa State College is a regional training center for Ford, GMC, Chrysler, and Subaru.

Minimum semester hours: 73

Cr. Hrs.

1. Course requirements for this degree
   a. Six (6) semester hours of English satisfied by completing any one of the following sequences: 6
      ENGL 086 and 087, or 121
      or
      ENGL 090 and 111
      or
      ENGL 111 and 112, 115, 121, or 129
   b. Six (6) semester hours selected from the following: 6

ANTH 201, 222	HIST 101, 102, 131, 132,
ECON 201, 202	136, 137
ENLI 131 and 132 or 133	POLS 101
145, 150	PSYC 121, 122
GEOG 103	SOCO 144, 260

   c. Mathematics 3
      MATH 020 minimum, or higher level math
   d. Required related courses 10

INSA 110, 110L	(4)	MECH 105	(3)
MANG 121	(3)		

   e. Mechanics courses 43
      Forty-three (43) credit hours minimum from the following:

MECA 116, 116L	Transaxles and Driveaxles	(3)
MECA 121, 121L	Clutches & Standard Transmissions	(4)
MECA 130, 130L	Auto Ignition Systems	(3)
MECA 142, 142L	Suspension and Alignment	(7)
MECA 222, 222L	4x4 Components and Repair	(5)
MECA 223, 223L	Engine Tuneup/Performance	(5)
MECA 227, 227L	Automatic Transmissions	(4)
MECA 239, 239L	Fuel & Emission Control	(6)
MECA 254, 254L	Auto Electronics	(6)
MECA 299	Automotive COOP	(2)
MECH 113, 113L	Internal Combustion Engines	(7)
MECH 125, 125L	Light Duty Brakes	(4)
MECH 133, 133L	Climate Control Systems	(4)

2. Electives: 3
3. Human Performance and Wellness 2
   (See general graduation requirements)
4. Special requirements

Students seeking an Associate of Applied Science degree must obtain a minimum of 2.00 ("C") in each listed MECA and MECH course, except MECH 105, and must satisfy all other graduation requirements.

5. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

COMPUTER DRAFTING TECHNOLOGY

Certificate of Occupational Proficiency

The program is designed to give the student a general approach to Computer Aided Drafting (CAD) with the use of computers and CAD software as a tool (some courses available only through Continuing Education).

Minimum semester hours required (29)

1. Course requirements for this certificate

a. All of the following courses: **Cr. Hrs.** 25

		Sem Hrs	*Con Hrs*
CADT 101	Intro to Computer and CAD	1	25
CADT 106	Basic Computer Aided Design	1	15
CADT 106L	Basic Comp Aided Design Lab	2	45
CADT 107	Computer Aided Drafting	2	30
CADT 107L	Computer Aided Draft Lab	2	45
CADT 110	CAD Application	2	30
CADT 110L	CAD Application Lab	2	45
CSCI 100	Computers in Our Society	3	45
ENGL 087	Vocational Communication	3	45
MAMT 105	Print Reading/Sketching	2	30
MAMT 106	Geometric Tolerancing	1	15
UTEC 107	Mathematics for Technology	4	60

2. Electives 4
   Four semester hours of electives with approval of faculty adviser or CADT 100 Basic CAD/CAM.

3. Special requirements and recommendations
   Students seeking a Certificate of Occupational Proficiency must obtain a minimum grade of 2.00 (C) in each course and must satisfy all other graduation requirements.

4. See faculty adviser for a program sheet detailing exact and complete requirements for this certificate.

ELECTRIC LINEWORKER

Certificate of Occupational Proficiency

Students receive field training and practical theory in all phases of powerline installation and maintenance. An outdoor school laboratory covers climbing, setting and removing various sizes of poles; guy work; conductors; transformers; street lights; installation of services; and the use and care of safety equipment. Climbing and working on poles and towers is required. Prospective students are encouraged to contact the college about physical requirements. This program begins ***only*** in the fall semester of each year.

Minimum semester hours required: (39)

1. Course requirements for this certificate
   a. All of the following courses:

		Sem Hrs	*Con Hrs*
ELCL 111	Mathematical Basic Electricity	5	77
ELCL 120	Fundamentals/Elect I	5	77
ELCL 131	Electrical Distribution Theory I	4	77
ELCL 132	Electrical Distribution Theory II	4	62
ELCL 132L	Electrical Distribution Theory II Lab	2	47
ELCL 136L	Related Fundamentals I	4	190
ELCL 137	Related Fundamentals II	2	32
ELCL 137L	Related Fundamentals II Lab	4	120
ELCL 140	Underground Procedure	4	75
ELCL 140L	Underground Procedure Lab	2	60
ELCL 145	Hotline Procedure	1	16
ELCL 145L	Hotline Procedure Lab	2	48

2. Special requirements and recommendations
   a. Students will be required to have current First Aid *and* CPR certification before they successfully complete the requirements of this program. This may be achieved by any of the following: (1) holding current cards; (2) obtaining American Red Cross "Standard" or "Advanced" rating *and* American Heart Association or equivalent certification, or (3) successfully completing HPWA 265 offered by Mesa State College.
   b. Summer and/or Fall Semester
   ELCL 199, Internship (6 semester hours, 640 contact hours) is required for any students selected to participate in the Western Area Power Administration (WAPA) on-the-job training program. This portion is not a part of the program approved for VA benefits.
   c. Students seeking a Certificate of Occupational Proficiency must obtain a minimum of 2.00 ("C") in each listed course, except ELCL 111 and ELCL 120, and must satisfy all other graduation requirements.
3. See faculty adviser for a program sheet detailing exact and complete requirements for this certificate.

ELECTRONICS TECHNOLOGY

Associate of Applied Science

Electronic science and applied electronics with emphasis areas in computers (hardware/software concepts and applications), industrial control circuits (automation and robotics) and communications. With approval of an instructor, a student may enter the program at any time (open entry) and study at his own pace. This is especially beneficial to non-traditional students and those who must work and can only attend classes at night.

Minimum semester hours required: 70-71

1. Course requirements for this degree

	Cr. Hrs.
a. Six (6) semester hours of English satisfied by completing any one of the following sequences: ENGL 086 and 087, or 121 or ENGL 090 and 111 or ENGL 111 and 112, 115, 121, or 129	6
b. Six (6) semester hours selected from the following: ANTH 201, 102, 222 — HIST 101, 102, 131, 132, 136, 137 ECON 201, 202 — POLS 101, 261 ENGL 131 and 132 or 133, 145, 150 — PSYC 121, 122 GEOG 103 — SOCO 144, 260	6
c. Mathematics ENGT 101, 102 or MATH 113, 130	7-8
d. All of the following courses	49

ELCT 117, 117L	DC Passive Circuits and Lab	(4)
ELCT 118, 118L	AC Passive Circuits and Lab	(4)
ELCT 232, 232L	Personal Computers I and Lab	(4)
ELCT 244, 244L	Electronic Circuits I	(4)
ELCT 246, 246L	Applied Digital Circuits and Lab	(4)
ELCT 252, 252L	Data Communiations and Lab	(4)
ELCT 254, 254L	Industrial Circuits and Lab	(5)
ELCT 256, 256L	Electronic Communication and Lab	(4)
ELCT 260, 260L	Personal Computers II and Lab	(5)
ELCT 265, 265L	Personal Computers III and Lab	(4)
ELCT 270, 270L	Linear Integrated Circuit Application Lab	(4)
ELCT 280, 280L	Project Design and Fabrication and Lab	(4)

2. Human Performance and Wellness — 2

3. Special requirements and recommendations
   Students seeking an Associate of Applied Science degree must obtain a minimum of 2.00 ("C") in each ELCT course and must satisfy all other graduation requirements.

4. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

ELECTRONICS TECHNOLOGY

Certificate of Occupational Proficiency

Minimum semester hours required: 57

1. Course requirements for this certificate
   a. All of the following courses:

		Sem Hrs	*Con Hrs*
ELCT 117	DC Passive Circuits	3	45
ELCT 117L	DC Passive Circuits Lab	1	30
ELCT 118	AC Passive Circuits	3	45
ELCT 118L	AC Passive Circuits Lab	1	30
ELCT 232	Personal Computers I	2	32
ELCT 232L	Personal Computers I Lab	2	60
ELCT 244	Electronic Circuits I	3	45
ELCT 244L	Electronic Circuits I Lab	1	30
ELCT 246	Applied Digital Circuits	3	47
ELCT 246L	Applied Digital Circuits Lab	2	60
ELCT 252	Data Communications	3	45
ELCT 252L	Data Communications Lab	1	30
ELCT 254	Industrial Circuits	3	47
ELCT 254L	Industrial Circuits Lab	2	60
ELCT 256	Electronic Communication	3	45
ELCT 256L	Electronic Communication Lab	1	30
ELCT 260	Personal Computers II	3	47
ELCT 260L	Personal Computers II Lab	2	60
ELCT 265	Personal Computers III	2	30
ELCT 265L	Personal Computers III Lab	2	60
ELCT 270	Linear Integrated Circuits	3	45
ELCT 270L	Linear Integrated Circuits Lab	1	30
ELCT 280	Project Design	2	32
ELCT 280L	Project Design Lab	2	60
MATH 020	Beginning Algebra	3	45

2. Electives
   Approved elective may be chosen from an electronics independentstudy, computer science, business, or mathematics (2 credit hours, 32 contact hours).

3. Special requirements and recommendations
   a. Students should check with an Electronics instructor/adviser about various other possible certificate options.
   b. Students seeking a Certificate of Occupational Proficiency must obtain a minimum of 2.00 ("C") in each ELCT course and must satisfy all other graduation requirements.

4. See faculty adviser for a program sheet detailing exact and complete requirements for this certificate.

ELECTRONIC ENGINEERING TECHNOLOGY

Associate of Science

Engineering technology has become very important in the fields of electronics and computer hardware. The engineering technologist works closely with engineers and technicians to assure proper installation and optimum operation of electronic systems. The Associate of Science program is designed specifically to transfer to a four-year baccalaureate degree program in the same field. It, by itself, is not designed for specific employment preparation after only two years of study. Ten specified electronics courses are the same as would be taken as a part of the Certificate or A.A.S. degree program in Electronics Technology and will apply toward the completion of this degree. The curriculum is in compliance with State agency policy governing the subject matter content and purpose of Associate of Science degrees.

Minimum semester hours required: 64

1. Associate of Science graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

	Cr. Hrs.
a. General Education	33
b. Human Performance and Wellness	2

2. Course requirements specific to this degree

a. Required courses			29
	CSCI XXX	Pascal, FORTRAN, or other approved language (consult with adviser)	(4)
	ELCT 117, 117L	DC Passive Circuits	(4)
	ELCT 118, 118L	AC Passive Circuits	(4)
	ELCT 244, 244L	Electronic Circuits I	(4)
	ELCL 246, 246L	Applied Digital Circuits	(4)
	ELCT 270, 270L	Linear Integrated Circuits	(4)
	MATH 151	Calculus I	(5)

3. Special recommendations
   It is recommended that the student take PHYS 111, 111L, 112 and 112L.

4. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

HEAVY EQUIPMENT-DIESEL MECHANICS

Certificate of Occupational Proficiency

The program is designed to provide a wide range of training in the field of heavy equipment/diesel mechanics maintenance. The longer the student stays in training, the more advanced skill and job potential is possible. Students may enter employment at any lesser skill level or continue through the entire program. The complete two-year program includes training in internal combustion engines, diesel engines, clutches and transmissions, hydraulics, electrical systems, industrial welding and other related areas.

Minimum semester hours required: 76.

1. Course requirements for this certificate

a. All of the following courses:

		Sem Hrs	*Con Hrs*
ENGL 086	Vocational Communications I (or higher)	3	45
INSA 110	Basic Electronics	3	47
INSA 110L	Basic Electronics Lab	1	30
INSA 220	Industrial Safety Practices	4	62
MANG 121	Human Relation in Business or		
AUBF 220	Shop Management	3	47
MATH 015	Basic Mathematics	3	47
MECD 115	Heavy Equipment Maintenance	2	30
MECD 115L	Heavy Equipment Maintenance Lab	1	22
MECD 132	Heavy Equipment Drivetrain I	3	45
MECD 132L	Heavy Equipment Drivetrain I Lab	3	67
MECD 150	Fluid Power	4	60
MECD 150L	Fluid Power Lab	3	68
MECD 222	Fuel Systems	3	45
MECD 223L	Diesel Engine Performance Lab	3	67
MECD 225	Diesel Engine Reconditioning	3	45
MECD 225L	Diesel Engine Reconditioning Lab	4	90
MECD 232	Heavy Equipment Drivetrain II	3	45
MECD 232L	Heavy Equipment Drivetrain II Lab	3	67
MECD 275L	Heavy Equip Repair Lab	3	67
MECH 105	Intro/Shop Practices & Diagnostic Equipment	2	30
MECH 105L	Intro/Shop Practices & Diagnostic Equip Lab	1	22
MECH 113	Internal Combustion Engine	3	45
MECH 113L	Internal Combustion Engine Lab	4	90
MECH 125	Light Duty Brake Systems	2	30
MECH 125L	Light Duty Brake Systems Lab	2	45
MECH 133	Climate Control Systems	3	45
MECH 133L	Climate Control Systems Lab	1	23
WELD 151	Industrial Welding	1	17
WELD 151L	Industrial Welding Lab	2	45

2. Special requirements and recommendations
   Students seeking a Certificate of Occupational Proficiencymust obtain a minimum of 2.00 ("C") in each MECD course, in MECH 125, and INSA 220 and must satisfy all other graduation requirements.

3. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

MACHINE TRADES AND MANUFACTURING TECHNOLOGY

Machining and machining technology careers involve the skillful operation of lathes, milling machines, specialized grinders, and other technical equipment to make precision fit metal parts and components such as gears, shafts, cylinders, pump housings and certain tools as well as parts for aircraft, ships, engines, rockets, and others. Virtually every metal part that has to have close fitting tolerance is manufactured by some machining process. Traditional lathes and milling machines as well as computerized metal working machines are used by manufacturing companies.

Three program options are available to students. These include a two semester Certificate of Occupational Proficiency program available to students desiring short term preparation for immediate employment in machining/machine shop occupations. A two-year Associate of Applied Science degree is offered in Machining Technology. This program is designed to prepare students for machining requiring a higher level of technical expertise. The emphasis is on operating machines such as numerical controlled lathes, mills or machining centers, but related mathematics and sciences are included. The third option, the Associate of Science degree, is designed for students who wish to pursue a four-year degree in Manufacturing Technology or Manufacturing Engineering.

Certain courses in machining will apply to all three programs.

MACHINING TECHNOLOGY

Associate of Applied Science

The Associate of Applied Science degree program includes many of the same technical courses as the Certificate of Occupational Proficiency. Also included are mathematics, science, electronics and management courses which are essential for job advancement to more technical levels after employment.

Minimum semester hours required: 70

1. Course requirements for this degree

	Cr. Hrs.
a. English (6 credit hours from the following) ENGL 090 and 111 or ENGL 111 and 112 or 115	6
b. Social and Behavioral Sciences (6 credit hours from the following) ANTH 201, 222 — HIST 101, 102, 131, 132 ECON 201, 202 — POLS 101 ENGL 131 and 132 or 133, 145, 150 — PSYC 121, 122 GEOG 103 — SOCO 144, 260, 264	6
c. Physics PHYS 100	3
d. Mathematics UTEC 107	4
e. All of the following courses:	49

BUGB or MANG course to be selected in consultation with adviser		(3)
CADT 106,106L	Basic Computer Aided Design and Lab	(3)
INSA 110,110L	Basic Electronics and Lab	(4)
MAMT 105	Print Reading/Sketching	(2)
MAMT 106	Geometric Tolerancing	(1)
MAMT 110	Gauging and Measuring Tools	(1)
MAMT 115,115L	Introduction to Machine Shop and Lab	(3)
MAMT 120, 120L	Machine Technology I and Lab	(4)
MAMT 125, 125L	Machine Technology II and Lab	(4)
MAMT 130, 130L	Machine Technology III and Lab	(4)
MAMT 135, 135L	Job Shop Machining I and Lab	(3)
MAMT 140, 140L	Job Shop Machining II and Lab	(3)
MAMT 145, 145L	Machine Maintenance	
or		
MAMT 207	Introduction to Statistical Process	(2)
MAMT 151, 151L	Numerical Control Machining I and Lab	(4)
MAMT 155, 155L	Numerical Control Machining II and Lab	(4)
MAMT 160, 160L	Properties of Materials and Lab	(2)
MAMT 165	Manufacturing Processes	(2)

f. Human Performance and Wellness	2

2. Special requirements and recommendations
   Students seeking an Associate of Applied Science degree must obtain a minimum of 2.00 ("C") in each MAMT course and must satisfy all other graduation requirements.

3. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

MANUFACTURING TECHNOLOGY

Associate of Science

The Manufacturing Technology Emphasis is designed primarily to transfer to a four-year Baccalaureate degree program in one of several manufacturing fields such as Manufacturing Engineering or Manufacturing Engineering Technology. It, by itself, is not designed for specific employment preparation after only two years of study. Six specified courses are the same as would be taken in the Certificate program in Machine Trades and will apply toward the completion of this degree. The curriculum is in compliance with State agency policy governing the subject matter content and purpose of Associate of Science degrees. Students seeking only fast track employment skills are referred to the Certificate or AAS degree programs.

Minimum semester Hours Required (65-66)

1. Associate of Science graduation requirements (for further information, see section on "Degree Requirements" in this catalog)

	Cr. Hrs.
a. General Education	33
b. Human Performance and Wellness	2

2. Course requirements specific to this degree

Required courses	30-31	
CADT 106,106L	Basic Computer Aided Design and Lab	(4)
MAMT 105	Print Reading/Sketching	(2)
MAMT 115, 115L	Introduction to Machine Shop and Lab	(3)
MAMT 120, 120L	Machine Technology I and Lab	(4)
MAMT 125, 125L	Machine Technology II and Lab	(4)
MAMT 151, 151L	Numerical Control Machining I and Lab	(4)
MAMT 165	Manufacturing Processes	(2)
MATH 130	Trigonometry	(3)
MATH 151	Calculus I (with MATH 113 above) or	
MATH 152	Calculus II (with MATH 113 above) and	
MATH 253	Calculus III	(4-5)

3. Special recommendations
   It is recommended that the student take CSCI 100, MATH 113 and PHYS 111, 111L.

4. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

MACHINE AND MANUFACTURING TRADES

Certificate of Occupational Proficiency

The Machine and Manufacturing Trades certificate program is designed to give students an opportunity to develop knowledge and competency considered essential for employment as entry level or "apprentice" level machinists. Persons not having an adequate background in mathematics or three dimensional perception skill will be encouraged to enroll in preparatory courses either as prerequisites or co-requisites. Open entry and flexible scheduling is possible in this program.

Minimum semester hours required: 44

1. Course requirements for this certificate
   a. All of the following courses:

		Sem Hrs	*Con Hrs*
ENGL XXX	English Requirement	3	47
MAMT 105	Print Reading/Sketching	2	30
MAMT 106	Geometric Tolerance	1	15
MAMT 110	Gauging/Measuring Tools	1	15
MAMT 115	Introduction to Machine Shop	1	15
MAMT 115L	Introduction to Machine Shop Lab	2	45
MAMT 120	Machine Technology I	1	20
MAMT 120L	Machine Technology I Lab	3	70
MAMT 125	Machine Technology II	1	20
MAMT 125L	Machine Technology II Lab	3	70
MAMT 130	Machine Technology III	1	20
MAMT 130L	Machine Technology III Lab	3	70
MAMT 135	Job Shop Machining I	1	15
MAMT 135L	Job Shop Machining I Lab	2	45
MAMT 140	Job Shop Machining II	1	15
MAMT 140L	Job Shop Machining II Lab	2	45
MAMT 151	Numerical Control Machining I	2	30
MAMT 151L	Numerical Control Machining I Lab	2	45
MAMT 155	Numerical Control Machining II	2	30
MAMT 155L	Numerical Control Machining II Lab	2	45
MAMT 160	Properties of Materials	1	15
MAMT 160L	Properties of Materials Lab	1	15
MAMT 165	Manufacturing Processes	2	30
UTEC 107	Mathematics for Technology	4	60

2. Special requirements and recommendations
   a. Physical requirements on the job include ability to lift up to 50 pounds regularly and to stand for long periods of time while doing machine work. Average hearing and eyesight, natural or corrected is desirable.
   b. Students seeking a Certificate of Occupational Proficiency must obtain a minimum of 2.00 ("C") in each required MAMT course and must satisfy all other graduation requirements.
3. See faculty adviser for a program sheet detailing exact and complete requirements for this certificate.

PRINTING TECHNOLOGY

Associate of Applied Science

A two-year technical program designed to prepare a student for employment with business, industry, and printing reproduction systems. The program develops the student's basic skills in visual information design; visual information reproduction; and visual information recording, storage, and retrieval.

Minimum semester hours required: 71

1. Course requirements for this degree

	Cr. Hrs.
a. Six semester hours of English satisfied by completing any one of the following sequences: ENGL 086 and 087 or 121 or ENGL 087 or 090 and 111 or ENGL 111 and 112, 115, 121, or 129	6
b. Nine semester hours selected from the following: ANTH 201, 222 — HIST 101, 102, 131, 132 ECON 201, 202 — POLS 101 ENGL 131 and 132 or 133 — PSYC 121, 122 145, 150 — SOCO 144, 260 GEOG 103	9

c. All of the following courses: 48

ARTE 101	Two-dimensional Design	(3)
GRCO 110	Survey of Commercial Art and Printing Processes	(1)
GRCO 115, 115L	Introduction to Computer Graphics and Lab	(2)
GRCO 120	Typography/Type Design	(2)
GRCO 121	Basic Layout and Design	(2)
GRCO 130	Basic Photography	(1)
GRCO 132	Basic Darkroom Techniques	(1)
GRCO 142, 142L	Mechanical Image Production and Lab	(3)
GRCO 143, 143L	Computer Composition and Lab	(3)
GRCO 151, 151L	Offset Press and Lab	(3)
GRCO 230, 230L	Process Photography I and Lab	(4)
GRCO 231, 231L	Process Photography II and Lab	(4)
GRCO 242, 242L	Desktop Imaging and Lab	(4)
GRCO 251, 251L	Offset Press II and Lab	(4)
GRCO 260	Printing Cost Estimating	(3)
GRCO 281L	Production	(4)
INSA 220	Industrial Safety Practices	(4)

c. Mathematics
MATH 015 or higher level math course 3

2. Electives 3
3. Human Performance and Wellness 2
4. Special requirements
Students seeking an Associate of Applied Science degree must obtain a minimum of 2.00 ("C") in each GRCO course and must satisfy all other graduation requirements.
5. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

WELDING

Associate of Applied Science

Courses are designed to give students an adequate knowledge of metals, layout work, and welding processes, along with an opportunity to gain manipulative skills and the related information needed to enter and progress in various welding occupations. Instruction and shop practice is offered in SMAW, GMAW, FCAW, and GTAW of mild steel in all positions as well as pipe and specialty welding. Various cutting and fabrication methods are included. Students can arrange work experience as an elective part of the regular program after completing two semesters or more.

Minimum semester hours required: 76)

1. Course requirements for this degree

	Cr. Hrs.
a. English (six semester hours of English satisfied by completing any one of the following sequences: ENGL 086 and 087, or 121 or ENGL 090 and 111 or ENGL 111 and 112, 115, 121, or 129	6
b. Six semester hours selected from the following: ANTH 201, 102, 222 — HIST 101, 102, 131, 132 ECON 201, 202 — POLS 101, 261 ENGL 131 and 132 or 133 — PSYC 121, 122 145, 150 — SOCO 144, 260, 264 GEOG 103	6
c. Mathematics MATH 015 or higher level math course	3
d. All the following courses:	54

WELD 110, 110L	SMAW I and Lab	(8)
WELD 112	Welding Theory	(4)
WELD 117, 117L	OFW and C I and Lab	(2)
WELD 120, 120L	SMAW II and Lab	(8)
WELD 121	Blueprint Reading I	(2)
WELD 122	Blueprint Reading II	(2)
WELD 131	Fabrication Layout I	(2)
WELD 132	Fabrication Layout II	(2)
WELD 141	Shop Management and Structural Theory	(4)
WELD 145	Metallurgy	(3)
WELD 210, 210L	GMAW and Lab	(3)
WELD 220, 220L	FCAW and Lab	(3)
WELD 230, 230L	GTAW and Lab	(3)
WELD 240, 240L	SMAW III and Lab	(8)

2. Electives — 3
3. Human Performance and Wellness — 2
4. Special requirements and recommendations
   Students seeking an Associate of Applied Science degree must obtain a minimum of 2.00 ("C") in each required WELD course and must satisfy all other graduation requirements.
5. See faculty adviser for a program sheet detailing exact and complete requirements for this degree.

WELDING

Certificate of Occupational Proficiency

Certificate programs are designed to be employment directed for beginning level jobs. Students should check with a Welding instructor/adviser about options for specialized employment training requiring a shorter period of training.

Minimum semester hours required: 39

1. Course requirements for this certificate
   a. All of the following courses:

		Sem Hrs	*Con Hrs*
MATH 015	Basic Mathematics	3	47
WELD 110	Shielded Metal Arc Welding I	1	17
WELD 110L	Shielded Metal Arc Welding I Lab	7	165
WELD 112	Welding Theory	4	62
WELD 117	Oxy-Fuel Welding/Cutting I	1	17
WELD 117L	Oxy-Fuel Welding/Cutting I Lab	1	22
WELD 120	Shielded Metal Arc Welding II	1	17
WELD 120L	Shielded Metal Arc Welding II Lab	7	165
WELD 121	Blueprint Reading I	2	30
WELD 122	Blueprint Reading II	2	30
WELD 131	Fabrication Layout I	2	30
WELD 132	Fabrication Layout II	2	30
WELD 210	Gas Metal Arc Welding	1	17
WELD 210L	Gas Metal Arc Weld Lab	2	45
WELD 220	Flux Core Arc Welding	1	17
WELD 220L	Flux Core Arc Weld Lab	2	45

2. See faculty adviser for a program sheet detailing exact and complete requirements for this certificate.

COURSE DESCRIPTIONS

The course descriptions in this catalog indicate the content of the course and the prerequisites when applicable. Courses are listed in alphabetical order, with a four-letter prefix code, followed by a number and title. The number in parentheses at the end of the course title indicates the credit granted, in terms of semester hours, for each course. Generally, the number of semester hours is the number of hours a class will meet each week. Exceptions are noted in individual course descriptions and, in most cases, prerequisites and/or corequisites stated. In the detailed course descriptions, the course number after the prefix indicates the college year in which the courses should ordinarily be taken.

100-199 ..... Freshman year
200-299 ..... Sophomore year

Courses numbered 001-099 are preparatory in nature, not intended for transfer purposes, and may not be used to fulfill associate of arts or associate of science degree requirements or electives. Preparatory courses may not be used to meet elective requirements in Associate of Applied Science or Certificate programs.

Courses identified as "Independent Study" are those beyond the scope of the required curriculum. General restrictions and regulations may be found under the Program section of this catalog (see "Independent Study" in the index). Specific regulations apply in certain disciplines, as well. Arrangements and permission must be obtained from the appropriate instructor and Director of UTEC well in advance.

"Topics" courses are offered from time to time and contain material of special interest within a specific discipline not considered elsewhere in the curriculum. Prerequisites vary with course materials, and enrollment requires consent of the instructor.

Mesa State College reserves the right to withdraw any program or course which is not justified due to lack of enrollment or availability of instructors. Other courses may be added if there is sufficient demand. In some programs, certain courses may be offered on an alternate year basis or as determined by demand.

Discipline Index

Subjects (disciplines) offered by UTEC are listed below alphabetically followed by the current course prefix, the page number of the individual course descriptions.

AUTOMOTIVE COLLISION REPAIR

AUBF 108 Introduction to Auto Body Repair (1)
AUBF 108L Introduction to Auto Body Repair Laboratory (3)
Designed to teach the use of auto body repair equipment and tools; skills, such as roughing and alignment, shrinking, grinding; and the use of body fillers. These skills will allow the student to become competent to repair auto body panels. Modular course—two hours lecture, 12 hours laboratory per week. Prerequisites: consent of the instructor. (Fall)

AUBF 109 Auto Body Repair and Preparation (1)
AUBF 109L Auto Body Repair and Preparation Laboratory (3)
Designed to teach students panel repair with the use of tools, skills and techniques acquired in AUBF 108. A student is required to repair a given number of auto body panels, such as doors, fenders, hood panels, and quarter panels to complete this course. Modular course—two hours lecture, 14 hours laboratory per week. Prerequisites: AUBF 108, 108L. (Fall)

AUBF 118 Introduction to Painting/Preparation (1)
AUBF 118L Introduction to Painting/Preparation Laboratory (3)
Training in the use of paint spraying equipment, and auto body panel paint preparation, including cleaning, sanding, masking, and spraying techniques. Other acquired skills include using primers, sealers, acrylic lacquers, acrylic enamels, polyurethane, and polyoxythane enamels. Each student is required to prepare and spray paint a given number of practice panels before painting complete automobiles. Modular course—three lecture and 12 laboratory hours per week. Prerequisites: consent of instructor. (Fall)

AUBF 119 Complete Auto Painting (1)
AUBF 119L Complete Auto Painting Laboratory (3)
Painting skills acquired in AUBF 118 will be utilized by the student to prepare and spray paint complete paint jobs on approved vehicles. Preparation and painting consists of cleaning, sanding, masking, priming, guide-coating, resanding, sealing, spray painting and detailing of automobiles. Modular course—three lecture hours and 12 laboramry hours per week. Prerequisites: AUBF 118, 118L. (Fall)

AUBF 130 Auto Reconditioning (1)
AUBF 130L Auto Reconditioning Laboratory (2)
Instruction in new car preparation, glass removal and installation, minor panel repair and refinishing, spot painting, cleaning, dyeing and repair of vinyl and upholstery, airbrush painting, exterior finish buffing and polishing, and general automotive detail procedures. One lecture hour and four laboratory hours per week. (Fall)

AUBF 140 Suspension and Mechanical Components (1)
AUBF 140L Suspension and Mechanical Components Laboratory (1)
Instruction includes steering, suspension, engines, brakes, fuel systems, cooling, and air conditioning as applied to the collision repair trade. Lectures, demonstrations and laboratory. One hour lecture and two hours laboratory per week. (Spring)

AUBF 150 Auto Body Welding (1)
AUBF 150L Auto Body Welding Laboratory (2)
The student will gain skills for proficiency in basic oxy-fuel welding, cutting and brazing, and metal inert gas (MIG) wire feed welding as is required in auto body repair. Emphasis will be on new, lighter weight and high strength steels. Plasma arc cutting and resistance spot welding also addressed. One hour lecture and four hours laboratory per week. Fall.

AUBF 200 Panel and Spot Painting (2)
AUBF 200L Panel and Spot Painting Laboratory (4)
Paint composition, refinishing products and their correct usage, color matching, and procedures to be used in making lacquer or acrylic spot repairs. Two hours lecture and eight hours laboratory per week. (Fall)

AUBF 210 **Unibody and Frame Repair** (2)
AUBF 210L **Unibody and Frame Repair Laboratory** (2)
Inspection, measurement, and repair methods used to repair unitized and conventional frames. Instruction will include floor systems, drive on rack and bench system. Two hours lecture and four hours laboratory per week. (Fall)

AUBF 220 **Shop Management** (3)
Shop operation, expenditures, floor-plan design, and equipment for the modern shop including management of employees. Three hours per week. (Spring)

AUBF 228 **Bolt-on Body Service** (1)
AUBF 228L **Bolt-on Body Service** (2)
Instruction and practice of replacement parts and glass to proper manufacture specifications. Special attention to fit and structural integrity without leaks and rattles. Modular course—one hour lecture and eight hours laboratory per week. (Fall/Spring)

AUBF 229 **Extensive Damage Repair** (1)
AUBF 229L **Extensive Damage Repair** (2)
Severe collision repair procedures. Emphasis on metal work, additional painting, corrosion protection, and special accents. Modular course—one hour lecture and eight hours laboratory per week. Prerequisites: AUBF 108, 108L. (Fall/Spring)

AUBF 238 **Weld-on Body Service** (1)
AUBF 238L **Weld-on Body Service Laboratory** (3)
Application of body sheet metal panels that are welded onto the vehicle. Other areas covered are body electrical, sectioning, and sheet molded compounds. One hour lecture and 13 hours laboratory per week. Prerequisites: AUBF 228, 228L, 229, 229L. (Fall/Spring)

AUBF 239 **Complete Collision Repair** (1)
AUBF 239L **Complete Collision Repair Laboratory** (3)
Provides experience with heavy damage along with production shop situations. This helps the student bring all of the two years of instruction together before going to work. Modular course—one hour lecture and thirteen hours laboratory hours per week. Prerequisites: AUBF 228, 228L, 229, 229L, 238, 238L. (Fall/Spring)

AUBF 250 **Estimating** (3)
Parts catalogs, flat rate, remove-and-replace procedures, insurance appraisals, and writing collision repair bids. Three hours per week. (Spring)

AUBF 295 **Independent Study** (1,2)

AUBF 296 **Topics** (1,2)

COMPUTER DRAFTING TECHNOLOGY

CADT 100 **Basic CAD/CAM** (2)
CADT 100L **Basic CAD/CAM Laboratory** (2)
Designed to give the student a basic working knowledge of CAD and how to apply a CAM package for production of machine parts. Prerequisites: computer and machining experience preferred or consent of instructor.

CADT 101 **Introduction to Computers and CAD** (1)
Introduction to the use of PC computers through the use of a simple computer-aided design software package. Course will be self-paced with the use of text materials.

CADT 106 **Basic Computer Aided Design** (1)
CADT 106L **Basic Computer Aided Design Laboratory** (2)
Basic principles of computer aided design through the development of practical drawing problems using a computer. Prerequisites: CADT 101 and MAMT 105, or consent of instructor. (On demand)

CADT 107 **Computer Aided Drafting** (2)
CADT 107L **Computer Aided Drafting Laboratory** (2)
Advanced work in computer aided drafting principles including 2-D, 3-D, shading, etc. Prerequisites: CADT 106, 106L or consent of instructor. (On demand)

CADT 110 **CAD Application** (2)
CADT 110L **CAD Application Laboratory** (2)
The course offers the student an opportunity to apply skills and knowledge gained in earlier courses. The student will work on computer aided drawings relating to their career field of interest and advice of faculty. Intern or Coop may be substituted with approval of adviser. Prerequisites: CADT 107, 107L. (On demand)

CADT 195 **Independent Study** (1-3)

CADT 196 **Topics** (1-3)

ELECTRIC LINEWORKER

NOTE: Twenty-five hours scheduled instruction per week in ELCL courses scheduled in Fall and Spring semesters unless otherwise noted.

ELCL 111 **Mathematical Basic Electricity** (5)
Mathematical formulas used in voltage, amperage, resistance, and power determination, metering problems, power factor correction, and line design problems. (Fall)

ELCL 120 **Fundamentals of Electricity** (5)
Generation, transmission, and distribution of electricity beginning with the electron and its function of transporting electric power to homes and industry. (Fall)

ELCL 131 **Electrical Distribution Theory I** (4)
Pole setting techniques, framing methods and specifications, climbing, sagging and splicing of conductors, energizing and de-energizing of lines, and installation of protective grounds. (Fall)

ELCL 132 **Electrical Distribution Theory II** (4)
ELCL 132L **Electrical Distribution Theory II Laboratory** 2)
Installation and operation of protective equipment, transformer hookups, voltage regulation, hotstick maintenance, troubleshooting, and gloving from the pole. Four hours lecture, three hours laboratory per week. Prerequisite: ELCL 131. (Spring)

ELCL 136L **Related Fundamentals I Laboratory** (4)
Examination of National Electric Safety Code, truck maintenance, equipment operation, material records, electrical test meters, and introduction to transformers. Twelve hours per week. (Fall)

ELCL 137 **Related Fundamentals II** (2)
ELCL 137L **Related Fundamentals II Laboratory** (4)
Meter safety, connector installation, street lighting, rubber cover up, and public relations. Two hours lecture, eight hours laboratory per week. Prerequisites: 136L. (Spring)

ELCL 140 **Underground Procedure** (4)
ELCL 140L **Underground Procedure Laboratory** (2)
Safety practices, terminology, fault finding, cable locating, switching procedure, installation of terminal devices, splicing, and transformer application. Five hours lecture, four hours laboratory per week. (Spring)

ELCL 145 **Hotline Procedures** (1)
ELCL 145L **Hotline Procedures Laboratory** (2)
Two weeks of training by outside specialists covering current hotline maintenance and underground installation methods. Eight hours lecture, twenty-four hours laboratory per week. (Spring)

ELCL 195 **Independent Study** (1,2)

ELCL 196 **Topics** (1,2)

ELCL 199 **Internship** (6)
Opportunity for an individual to be employed for training by a utility company while maintaining his or her status as a Mesa State College student. Provides excellent on-the-job training benefits. Students usually selected for this course by formal interview. Eighteen hours per week, two semesters (Summer and Fall) after completion of regular program. Prerequisite: consent of instructor.

ELECTRONICS TECHNOLOGY

NOTE: Enrollment, with instructor approval, may occur at any time (open entry) for certain courses. Please check with the instructor.

ELCT 117 **DC Passive Circuits** (3)
ELCT 117L **DC Passive Circuits Laboratory** (1)
DC circuits including resistors, capacitors, inductors, applications of Ohm's and Kirchhoff's laws, and use of standard test equipment. (Summer/Fall/Spring)

ELCT 118 **AC Passive Circuits** (3)
ELCT 118L **AC Passive Circuits Laboratory** (1)
Analysis of AC circuits including resistors, capacitors, inductors, and use of standard test equipment. (Summer/Fall/Spring)

ELCT 232 **Personal Computers I** (2)
ELCT 232L **Personal Computers I Laboratory** (2)
Basic hardware and software of the microcomputer system, including proficiency in use of MS DOS and troubleshooting problems with the peripherals and microcomputer to the board level. (Summer/Fall/Spring)

ELCT 244 **Electronic Circuits I** (3)
ELCT 244L **Electronic Circuits I Laboratory** (1)
Analysis of solid state diodes and bipolar transistor amplifier circuits. Prerequisite: ELCT 118 or consent of instructor. (Summer/Fall/Spring)

ELCT 246 **Applied Digital Circuits** (2)
ELCT 246L **Applied Digital Circuits Laboratory** (2)
Logic gates, boolean algebra, flip-flops, registers, memory, karnaugh mapping, machine programming, and construction of a microcomputer using TTL devices. Prerequisites: ELCT 244, 244L. (Summer/Fall/Spring)

ELCT 252 **Data Communications** (3)
ELCT 252L **Data Communications Laboratory** (1)
Overview of current digital data networks, communications protocols and phone circuits, as well as communications channels for both analog and digital transmissions. Prerequisites: ELCT 117, 118, and 246 or equivalent knowledge. (Summer/Fall/Spring)

ELCT 254 **Industrial Circuits** (3)
ELCT 254L **Industrial Circuits Laboratory** (2)
Solid state circuits in industrial control circuits. Three hours lecture, two hours laboratory per week. Prerequisite: ELCT 270 or consent of instructor. (Summer/Fall/Spring)

ELCT 256 **Electronic Communication** (3)
ELCT 256L **Electronic Communication Laboratory** (1)
Introduction to the field of communications. Covers am, fm, stereo, television, antennas, digital communication, radar, lasers, and fiber optics. Prerequisite: consent of instructor. (Summer/Fall/Spring)

ELCT 260 **Personal Computers II** (3)
ELCT 260L **Personal Computers II Laboratory** (2)
Detailed theory of personal computers using the IBM PC family. Maintenance, troubleshooting and repair of these systems to the component level is taught. Hands-on experience diagnosing and repairing 8088, 80286, and 80386 machines is stressed. Prerequisites: ELCT 232, 232L. (Fall)

ELCT 265 **Personal Computers III** (2)
ELCT 265L **Personal Computers III Laboratory** (2)
Theory, troubleshooting, and repairing computer peripherals to include floppy disk drives, dot-matrix and letter quality printers, and RGB and Monochrome monitors to the component level. Prerequisites: ELCT 232, 232L, 262, 262L. (Fall/On demand)

ELCT 266 **Microprocessors I** (3)
ELCT 266L **Microprocessors I Laboratory** (1)
Use of the microprocessor to teach machine language programming, computer arithmetic, organization of microprocessors, interfacing, and input/output operations. Prerequisite: consent of instructor. (Summer/Fall/Spring)

ELCT 270 **Linear Integrated Circuit Applications** (3)
ELCT 270L **Linear Integrated Circuit Applications Laboratory** (1)
Differential and operational amplifier circuitry, feedback configurations, opamps errors, compensations, and applications. Prerequisite: consent of instructor. (Summer/Fall/Spring)

ELCT 280 **Project Design and Fabrication** (2)
ELCT 280L **Project Design and Fabrication Laboratory** (2)
Application of circuit theory and construction techniques in the design of electronic circuits. The student will design, build, test, and write the complete documentation of an approved project. Prerequisites: student must be in the 4th semester of the Electronics Technology Program. (Summer/Fall/Spring)

ELCT 295 **Independent Study** (1,2)

ELCT 296 **Topics** (1,2)

GRAPHIC COMMUNICATIONS

GRCO 110 **Survey of Commercial Art and Printing Processes** (1)
Overview of job requirements, job availability, production processes, working environment and relationships, work ethics, and general safety as utilized by the commercial art and printing industries. (Fall)

GRCO 115 **Introduction to Computer Graphics** (1)
GRCO 115L **Introduction to Computer Graphics Laboratory** (1)
Basic use and operation of graphics computer, primarily MacIntosh PC, with focus on terminology, hardware, peripheral devices, systems management, software (systems and application) including establishment of operation files, job and information files, maintenance, safety, and keyboarding. One hour lecture, two hours laboratory per week. (Fall)

GRCO 120 **Typography/Type Design** (2)
Study of typography including terminology, type style identification and design, use of type within a design consisting of only type or as one of the elements of the design and type specifications; copyfitting; and basic principles of pattern and spatial design concepts. (Fall)

GRCO 121 **Basic Layout and Design** (2)
Basic principles of design and layout techniques, including thumbnail, rough, and comprehensive layouts; work planning; client presentation; and preparation of artwork in black and white and color with focus on use of markers and colored pencils. Two hours lecture per week. Prerequisite: GRCO 120 or consent of instructor. (Spring)

GRCO 130 **Basic Photography** (1)
Principles and techniques of photography, including the functions of camera parts and accessories. Two hours lecture per week; seven and one-half weeks. (Fall/Spring)

GRCO 131 Photo Finishing (1)
Techniques of brush and airbrush photo retouching, image intensification, reduction on negatives and photo prints, mounting, and matting. One and one-half hours per week; seven and one-half weeks. Prerequisite: GRCO 130. (Spring)

GRCO 132 Basic Darkroom Techniques (1)
Techniques and skills for darkroom procedures for black and white film processing and print making including enlarging. Two hours per week; seven and one-half weeks. (Fall/Spring)

GRCO 142 Mechanical Image Production (1)
GRCO 142L Mechanical Image Production Laboratory (2)
Basic hand prepared paste-up methods of camera-ready copy preparation for reproduction. Modular course—two hours lecture, six hours laboratory per week. (Fall)

GRCO 143 Computer Composition (1)
GRCO 143L Computer Composition Laboratory (2)
Typesetting functions with emphasis on operation of computer based systems, mainly Macintosh PC, and production of camera-ready type. Modular course—one hour lecture, six hours laboratory per week. (Spring)

GRCO 151 Offset Press (1)
GRCO 151L Offset Press I Laboratory (2)
Offset press operation, maintenance of presses, and principles of offset including inks, fountain solutions, and plates. One hour lecture, three hours laboratory per week. (Fall)

GRCO 220 Design and Illustration I (3)
Advanced study and production of designs and layouts with emphasis on corporate art and advertising art including computer generated images; selection of design elements with focus on color choice, image choice, and copy choice; and illustration techniques for layouts, presentations, and camera-ready images. Two and one-half hours lecture per week. Prerequisites: ARTE 151, GRCO 121. (Fall)

GRCO 221 Design and Illustration II (3)
Continuation of GRCO 220. Production of layouts and camera-ready artwork using various techniques and media. Emphasis on projects equal to the standards of the commercial art industry, and on the different aspects and areas involved in commercial design. Three hours lecture per week. Prerequisite: GRCO 220. (Spring)

GRCO 230 Process Photography I (1)
GRCO 230L Process Photography I Laboratory (3)
Basic techniques of process camera work and darkroom procedures, including calibration, line work, photo mechanical transfer, flat preparation, and platemaking. Four hours of laboratory per week. (Fall)

GRCO 231 Process Photography II (1)
GRCO 231L Process Photography II Laboratory (3)
Advanced techniques of process camera and darkroom techniques including halftone, duotone, special effects, advanced flat preparation, and an introduction to 4-color separation and mask-up. One hour lecture and four hours of laboratory per week. Prerequisite: GRCO 230. (Spring)

GRCO 242 Desktop Imaging (1)
GRCO 242L Desktop Imaging Laboratory (3)
Techniques and principles of page layout preparation utilizing computer based systems, mainly Macintosh PC, scanner and image assembly software such as Page Maker and QuarkXPress. One hour lecture and four hours of laboratory per week. Prerequisites: GRCO 143, 143L. (Fall)

GRCO 243 Computer Illustration (1)
GRCO 243L Computer Illustration Laboratory (2)
Focus on developing knowledge and skills to produce computer generated artwork, both black/white and color, including color separation camera-ready art using software application programs currently in use in the commercial art industry. One hour lecture, three and one-half hours laboratory per week. Prerequisite: GRCO 115, 115L or consent of instructor. (Spring)

GRCO 251 **Offset Press II** (1)
GRCO 251L **Offset Press II Laboratory** (3)
Advanced offset press operation, multiple-color printing, basics of paper-press relationships, and a web offset press operation. Four hours of laboratory per week. Prerequisite: GRCO 150. (Fall)

GRCO 260 **Printing Cost Estimating** (2)
Costs and cost estimating techniques specifically related to the printing industry. Two hours lecture per week. Prerequisite: sophomore Printing Technology majors or consent of instructor. (Spring)

GRCO 270 **Portfolio Construction** (1)
Design, development, and assembly of a portfolio to be used as employment material. Two and one-half hours lecture per week. Prerequisite: sophomore Commercial Art students only. (Spring)

GRCO 281L **Production** (4)
Simulation of a print shop in which the students gain additional experience and skill in a working environment; OR upon application, full time placement in a printing company/inplant department. Students are expected to complete 200 hours. Application for placement must be submitted prior to admittance to this class. Eight hours per week. Corequisites: GRCO 231, 231L. Prerequisites: GRCO 230, 230L, 242, 242L, 250, 250L. (Spring)

GRCO 295 **Independent Study** (1,2)

GRCO 296 **Topics** (1,2)

GRCO 299 **Internship** (4)
Full-time placement in an agency or corporate department to provide an enhanced transition from the classroom to the work setting through first-hand experience. The student is expected to complete 200 clock hours. Application must be made during the prior spring semester. Credit not available through challenge testing. (Summer)

INDUSTRIAL SCIENCE

INSA 100 **Machine Shop Studies** (3)
Concentrated and condensed overview in the areas of calculator math, blueprint reading, geometric tolerancing, inspection, gauging, safety, and employee group skills. (On demand)

INSA 102 **Machine Theory** (3)
Concentrated unit dealing with speeds and feeds of machines, materials, tooling, tapping, boring, and manufacturing processes. (On demand)

INSA 110 **Basic Electronics** (3)
INSA 110L **Basic Electronics Laboratory** (1)
Principles of electricity/electronics. Applicable to entry level positions in areas requiring basic understanding of DC/AC, solid state, digital, and computer operation, repair and maintenance such as auto mechanics and machine trades. Good background in arithmetic important. Three lectures and one two-hour laboratory per week. May be taught as self-paced individual study if requested or if required by class size. (Fall)

INSA 220 **Industrial Safety Practices** (4)
Industrial safety regulations and practices including fire, electrical, mechanical, dust, vapor, and hazardous waste. Life support trauma management and hazard recognition practice as related to student occupational area. Modular course, twelve and one-half hours lecture per week for five weeks. (Fall)

MACHINING AND MANUFACTURING TRADES

NOTE: Full-time student schedule is a minimum of five hours per day in MAMT courses. Enrollment, with instructor approval, may occur at any time in certain courses. Please check with the instructor.

MAMT 105 Print Reading/Sketching (2)
Reading of blueprints and process sheets as used in industry; application of that information to various manufacturing processes. (On demand)

MAMT 106 Geometric Tolerancing (1)
Identification, interpretation, and application of the blueprint symbols (referred to as Geometric Tolerancing symbols) in machining and inspection operations. Corequisite: MAMT 105 or consent of instructor. (On demand)

MAMT 110 Gauging and Measuring Tools (1)
Uses and techniques of inspection including micrometers, Vernier scales, instruments, hole gauges in surface plate work, finish of parts and overall inspection techniques. Prerequisite: MAMT 106 or consent of instructor. (On demand)

MAMT 115 Introduction to Machine Shop (1)
MAMT 115L Introduction to Machine Shop Laboratory (2)
Safety procedures: using bench tools, layout tools, power saws, and taps; sharpening general purpose drills, grinding lathe bits; and identifying and operating basic machines such a the bench grinder, drill press, band saw, and others. One hour lecture and three hours laboratory per week. Corequisite: MAMT 110 or consent of instructor. (Fall/Spring)

MAMT 120 Machine Technology I (1)
MAMT 120L Machine Technology I Laboratory (3)
Operation of engine lathes, milling machines and surface grinders. One hour lecture and five hours laboratory per week. MAMT 115 or consent of instructor. (On demand)

MAMT 125 Machine Technology II (1)
MAMT 125L Machine Technology II Laboratory (3)
Further development of skills acquired in MAMT 120. Emphasis will be placed on technical aspects of tooling and machining tolerances. One hour lecture and five hours laboratory per week. Prerequisite: MAMT 120. (On demand)

MAMT 130 Machine Technology III (1)
MAMT 130L Machine Technology III Laboratory (3)
Advanced machine operations including O.D. grinding, cutter tool grinding, gear cutting, indexing, and rotary table work with emphasis on accuracy, inspection and workmanship. One hour lecture and five hours laboratory per week. Prerequisite: @CD2:MAMT 125. (Spring, on demand)

MAMT 135 Job Shop Machining I (1)
MAMT 135L Job Shop Machining I Laboratory (2)
Production of machined parts from a shop blueprint, writing process sheets, and estimating machine time. Machining of parts may involve one or more machine operation. Machine time, paperwork, inspection, and accuracy will be emphasized. One hour lecture and three hours laboratory per week. Prerequisites: MAMT 130 or consent of instructor. (On demand)

MAMT 140 Job Shop Machining II (1)
MAMT 140L Job Shop Machining II Laboratory (2)
Further development of writing process sheets, estimating machine time, performing final inspection of finished parts and using all machines in the shop including the numerical control machines. One hour lecture, three hours laboratory per week. Prerequisite: MAMT 130 or consent of instructor. (Spring, on demand)

MAMT 145 Machine Maintenance (1)
MAMT 145L Machine Maintenance Laboratory (1)
Maintaining, lubricating, and repairing machinery including making gib adjustments, selecting and using proper lubricants and selecting or manufacturing parts for making repairs with emphasis on workmanship and inspection.
One hour lecture, one and one-half hours laboratory per week. Prerequisite: consent of instructor. (On demand)

MAMT 150 Introduction to Numerical Control (1)
Numerical control/computerized numerical control machining, its advantages and how it operates. The course is designed as an informational unit for customized pre-employment training. (On demand)

MAMT 151 **Numerical Control Machining I** **(2)**
MAMT 151L **Numerical Control Machining I Laboratory** **(2)**
Computerized and numerical control machining operations, including control functions, programming format, machine setup, and operation. Prerequisite: consent of instructor. Two hours lecture and three hours laboratory per week. (On demand)

MAMT 155 **Numerical Control Machining II** **(2)**
MAMT 155L **Numerical Control Machining II Laboratory** **(2)**
Further development of concepts introduced in MAMT 151 with emphasis on set up and operation of N.C./C.N.C. machines. Two hours lecture and three hours laboratory per week. Prerequisite: MAMT 151 or consent of instructor. (Spring)

MAMT 160 **Properties of Materials** **(1)**
MAMT 160L **Properties of Materials Laboratory** **(1)**
Descriptions of smelting and refining various types of metals. Discussions and demonstra tions on various methods of heat treating, hardness testing, and cutting chip theory. (Fall, on demand)

MAMT 165 **Manufacturing Processes** **(2)**
Manufacturing methods other than traditional machining methods; forming, stamping, extruding, casting, electrical discharge machining, powder metallurgy, welding and finishing of material. Economical and technical aspects of these processes are emphasized. (On demand)

MAMT 207 **Introduction to Statistical Process Control** **(2)**
Introduction to the philosophical and economic bases for statistical process control and its use; mathematical and non-mathematical SPC techniques with emphasis on application. Prerequisites: MAMT 105,106,107,110, and 151, or consent of instructor. (On demand)

MAMT 295 **Independent Study** **(1,2,3)**
MAMT 296 **Topics** **(1,2,3)**

AUTOMOTIVE TECHNOLOGY

AUTOMOTIVE

MECA 116 **Transaxles and Driveaxles** **(1)**
MECA 116L **Transaxles and Driveaxles Laboratory** **(2)**
Drivelines and driveaxle; theory of operation, inspection and repair of both front wheel drive and rear wheel drive systems.
Also includes manual transaxle theory of operation, service and repair of both domestic and imported models. Modular course—three hours lecture and nine hours laboratory per week. (Fall)

MECA 121 **Clutches and Standard Transmissions** **(2)**
MECA 121L **Clutches and Standard Transmissions Laboratory** **(2)**
Theory of operation, removal, inspection and replacement of parts of automotive type clutch systems and 3-, 4-, and 5-speed manual shift transmissions. Modular course—six hours lecture and nine hours laboratory per week. (Fall)

MECA 130 **Automotive Ignition Systems** **(2)**
MECA 130L **Automotive Ignition Systems** **(1)**
Auto ignition systems theory of operation, inspection, and repair. Point type electronic and distributorless systems are all explained. Modular course—six hours lecture and five hours laboratory per week. (Fall)

MECA 142 **Suspension and Alignment** **(3)**
MECA 142L **Suspension and Alignment** **(4)**
Theory of operation, component identification, testing and component replacement. Five basic alignment angles, 2- and 4-wheel alignment procedures, tire wear diagnosis and wheel balance are covered in detail. Modular course—nine hours lecture and sixteen hours laboratory per week. (Spring)

MECA 222 **4X4 Components and Repair** (2)
MECA 222L **4X4 Components and Repair** (3)
Comprehensive study of the systems of a four-wheel drive vehicle, theory of operation, component identification, and service and repair of these systems. Maintenance and problem diagnosis receive special attention. Modular course, five weeks—six hours lecture and fourteen hours laboratory per week. (Fall)

MECA 223 **Automotive Engine Diagnosis, Tune-up and Performance** (2)
MECA 223L **Automotive Engine Diagnosis, Tune-up and Performance Laboratory** (3)
Comprehensive study of engine performance, diagnosis, testing, and service-related systems using advanced testing equipment. Modular course—six hours lecture and fourteen hours laboratory per week. (Spring)

MECA 227 **Automatic Transmissions** (2)
MECA 227L **Automatic Transmissions** (2)
Principles of operation of planetary gear sets, fluid couplings, torque converters, servos, clutch packs, and control circuits. Modular course—six hours lecture and nine hours laboratory per week. (Fall)

MECA 239 **Fuel and Emission Control System** (4)
MECA 239L **Fuel and Emission Control System Laboratory** (2)
Carburation and fuel injection; theory of operation, system testing and problem diagnosis along with emission control systems and service or replacement of related components. Special emphasis on problem diagnosis. Modular course—twelve hours lecture and nine hours laboratory per week. Fall.

MECA 254 **Automotive Electronics** (4)
MECA 254L **Automotive Electronics Laboratory** (2)
Advanced auto electronics relating to solid state systems, command computers, and electronic advancements in technology. Modular course—twelve hours lecture and nine hours laboratory per week. (Spring)

MECA 295 **Independent Study** (1,2)

MECA 296 **Topics** (1,2)

MECA 299 **Automotive COOP** (2)
Actual placement in area shops to further the student's knowledge of actual work conditions and procedures. Modular course—eighteen hours per week. Prerequisites: second year status enrolled in A.A.S. degree program, in last semester of training. (On demand)

HEAVY EQUIPMENT—DIESEL MECHANICS

MECD 115 **Heavy Equipment Maintenance** (2)
MECD 115L **Heavy Equipment Maintenance Laboratory** (1)
Diesel fuels, lubricants, coolants, filters, bearings, seals, cooling and lubricating systems, chain and belt drives, tires, pumps and air systems. Emphasis on preventive maintenance and maintenance records. Six and one-half hours lecture, five hours laboratory per week. (Spring)

MECD 132 **Heavy Equipment Drivetrain I** (3)
MECD 132L **Heavy Equipment Drivetrain I Laboratory** (3)
Powertrain component operating principles, construction, repair and maintenance of manual transmission, drivelines, clutches, differentials, suspension and air brakes according to standard operating procedures. Modular course—nine and one-half hours lecture and thirteen and one-half hours laboratory per week. (Fall)

MECD 150 **Fluid Power** (4)
MECD 150L **Fluid Power Laboratory** (3)
Principles of hydraulics and pneumatic system including the construction, application, repair, maintenance and troubleshooting of components and systems. Modular course—twelve and one-half hours lecture, thirteen and one-half hours laboratory per week. (Spring)

MECD 222 Fuel Systems (3)
Design, construction, repair, maintenance, and troubleshooting procedures for fuel injection systems, components, pollution control devices, and electronic control systems. Modular course—nine and one-half hours per week. Spring.

MECD 223L Diesel Engine Analysis Performance Laboratory (3)
Application of analysis and trouble-shooting techniques, and adjustment of diesel engines for optimum operating performance. Fourteen hours per week. Prerequisites: MECD 222 or consent of instructor. (Spring)

MECD 225 Diesel Engine Reconditioning (3)
MECD 225L Diesel Engine Reconditioning Laboratory (4)
Four cycle and two cycle engine's cylinder block, crankshaft and bearings, piston and connecting rod assemblies, camshaft, gear train, engine timing, cylinder head assembly, intake and exhaust systems, components, including disassembling, inspecting, repairing and reassembling a diesel engine according to operating specifications. Modular course—ten hours lecture, nineteen hours laboratory per week. Prerequisites: MECH 113, 113L. (Spring)

MECD 232 Heavy Equipment Drivetrain II (3)
MECD 232L Heavy Equipment Drivetrain II Laboratory (3)
Power train component operating principles, construction, repair and maintenance of final drives, undercarriage, steer clutches, power shift transmissions, differentials, and off-road brake systems. Modular course—ten hours lecture, fourteen hours laboratory per week. (Fall)

MECD 275L Heavy Equipment Repair Laboratory (3)
General maintenance, troubleshooting and repair under simulated industrial shop conditions including use of service manuals, sorting work orders, ordering parts, and dealing with customers. On-the-job training; fourteen hours per week. Prerequisite: sophomore standing and consent of instructor. (On demand)

MECD 295 Independent Study (1,2)

MECD 296 Topics (1,2)

MECHANICS—GENERAL

MECH 105 Introduction to Shop Practice & Diagnostic Equipment (2)
MECH 105L Introduction to Shop Practice & Diagnostic Equipment Laboratory (1)
Shop procedures, personal safety practices, tool identification and use; reference material and usage diagnostic test equipment usage and periodic maintenance service. Modular course—Six hours lecture and four hours laboratory per week. (Fall)

MECH 113 Internal Combustion Engines (3)
MECH 113L Internal Combustion Engines Laboratory (4)
Internal combustion engine for the Auto Mechanics or Diesel Mechanics/Heavy Equipment student. Includes types, design construction, principles of operation, function of components, parts recognition, identification of basic parts, disassembly and assembly of the four-cycle gasoline engine, measuring of parts, inspection and diagnosis of parts, and recognition of worn, damaged, or broken parts. Introduction of valve and seat reconditioning, valve guide repair or replacement, and proper assembly procedures. Modular course—nine hours lecture and sixteen hours laboratory per week. (Spring)

MECH 125 Light Duty Brake Systems (2)
MECH 125L Light Duty Brake Systems Laboratory (2)
Theory of operation, inspection, and repair of automotive hydraulic brake systems including antilock systems. Modular course—six hours lecture and fourteen hours laboratory per week. (Fall)

MECH 133 Climate Control Systems (3)
MECH 133L Climate Control Systems Laboratory (1)
Heating and refrigeration, methods of operation and control, proper handling of refrigerant, use of testing equipment, efficiency testing, leak testing, and complete service procedures. Component replacement and repair as well as general maintenance. Modular course—ten hours lecture and five hours laboratory per week. (Spring)

UTEC

UTEC 107 **Mathematics for Technology** **(4)**
Designed to provide students with a practical application to mathematics. Topics include common fractions and decimals, fundamentals of algebra, plane geometry, and introduction to trigometric functions. (Hand held calculator required). (On demand)

WELDING

WELD 110 **SMAW I** **(1)**
WELD 110L **SMAW I Laboratory** **(7)**
Safe use of equipment in shop practice; covers Shielded Metal Arc Welding mild steel in all positions. One hour lecture, eleven hours laboratory per week. (Fall/Spring)

WELD 112 **Welding Theory** **(4)**
Classroom instruction in the care and use of welding equipment, selection of the proper rods and processes, and safety as it applies to welding and welding equipment. Four hours per week. (Fall/Spring)

WELD 117 **OFW and C I** **(1)**
WELD 117L **OFW and C I Laboratory** **(1)**
Shop practice and skill development in safe use of Oxy-Fuel Welding/Cutting equipment. Basic Oxy-Fuel Welding on mild steel in flat and vertical positions is covered with some emphasis on oxy-fuel cutting of various thicknesses of mild steel plate. One hour lecture, one and one-half hours laboratory per week. (Fall/Spring)

WELD 118 **OFW and C II** **(1)**
WELD 118L **OFW and C II Laboratory** **(1)**
Continuation of WELD 117 with increased emphasis on shop practice in safe use of Oxy-Fuel Welding/Cutting equipment. Oxy-fuel welding and brazing, both ferrous and non-ferrous, on both pipe and plate in all practical thicknesses. One hour lecture, one and one-half hours laboratory per week. Prerequisites: WELD 117 or equivalent and consent of instructor. (On demand)

WELD 120 **SMAW II** **(1)**
WELD 120L **SMAW II Laboratory** **(7)**
Continuation of WELD 110. Skills for welding mild steel in all positions are refined. One hour lecture, eleven hours laboratory per week. Prerequisite: WELD 110 or consent of instructor. (Fall/Spring)

WELD 121 **Blueprint Reading I** **(2)**
The basic principles of blueprint interpretation and visualization of objects as applied to industry as well as the use and interpretation of welding symbols. Six hours per week; seven and one-half weeks. (Spring)

WELD 122 **Blueprint Reading II** **(2)**
Continuation of WELD 121 emphasizing working with shop drawings. Six hours per week; seven and one-half weeks. Prerequisites: Six hours per week; seven and one-half weeks. WELD 121 or consent of instructor. (Fall)

WELD 131 **Fabrication Layout I** **(2)**
Basic layout techniques from shop drawings to fabrication of sheet metal, plate, structural shapes, and pipe. Six hours per week; seven and one-half weeks. (Spring)

WELD 132 **Fabrication Layout II** **(2)**
Continuation of WELD 131. Six hours per week; seven and one-half weeks. Prerequisite: WELD 131 or consent of instructor. (Spring)

WELD 141 **Shop Management and Structural Theory** **(4)**
Shop operations, expenditures, floor-plan design, and equipment of the modern day shop as well as various codes applied to industry. Four hours per week. (Fall)

WELD 145 **Metallurgy** **(3)**
Smelting, refining, and alloying with discussion of heat treating methods and the effects of welding on metals. Three hours per week. (Spring)

WELD 151 Industrial Welding (1)
WELD 151L Industrial Welding Laboratory (2)
Introductory level mild steel shielded metal arc welding (SMAW) and oxy-fuel methods. Instruction includes safety; equipment use; stick electrode welding in the flat, horizontal, vertical, and overhead positions. Oxy-fuel cutting, fusing, brazing and soldering, air arc, plasma arc, slice torch, build up and hard face are included. Five hours per week. (Fall)

WELD 210 GMAW (1)
WELD 210L GMAW Laboratory (2)
Safe use of GMAW equipment and shop practices. Covers GMAW on mild steel, alloy steel, and aluminum in all positions. One hour lecture and four hours laboratory per week. (Fall/Spring)

WELD 220 FCAW (1)
WELD 220L FCAW Laboratory (1)
Safe use of FCAW equipment and shop practices. Covers FCAW on mild and alloy steels. One hour lecture and four hours laboratory per week. (Fall/Spring)

WELD 230 GTAW (1)
WELD 230L GTAW Laboratory (2)
Safe use of GTAW equipment and shop practices. Covers GTAW of mild and alloy steel as well as aluminum and copper base metals in all positions. One hour lecture and four hours laboratory per week. (Fall/Spring)

WELD 240 SMAW III (1)
WELD 240L SMAW III Laboratory (7)
Continuation of WELD 120 emphasizing pipe welding. One hour lecture, eleven hours laboratory per week. Prerequisite: WELD 120 or consent of instructor. (Fall/Spring)

WELD 261 Testing & Inspection (3)
An advanced course covering testing and inspection of welds to determine soundness; visual, destructive, and nondestructive testing; and a study of codes and welder certification. Three hours per week. (Spring)

WELD 295 Independent Study (1,2)

WELD 296 Topics (1,2)

UTEC PERSONNEL

BRENDA BEDEN, Printing Technology
FRED BOLTON, Welding
BILL BRANTON, Welding
BRAD BUCHHOLZ, Auto Collison Technology
CURT CARLSEN, Manufacturing Technology
LYNN DOBSON, Health Occupations
BEVERLEY DWIRE, Counselor/Assessment Coordinator
CHARLES FETTERS, Electronics
MARJORIE GARNEAU, Budget Manager
RAY GREB, Manufacturing Technology
CHERYL GREGG, Marketing
FORREST HOLGATE, Electric Lineworker
BEN KEEFER, Agriculture
JOYCE LAMBERT, Secretary
GARY LOOFT, Transportation Services (HED)
STAN MARTINEAU, Transportation Services
SUSAN MABREY, Clerical Assistant
JULIE NERI, Gender Equity Specialist
NANCYE PIERCE, Tutor Coordinator
VERONICA MONTOYA, Secretary
LYLE SCHRADER, Transportation Services
JACK SMITH, Assistant Director
CURT STRAIN, Supply Officer
PAUL WELLS, Auto Collision Technology
RON WILCOX, Electronics
KERRY YOUNGBLOOD, Director

UTEC ALPHABETICAL SUBJECT INDEX

ALPHABETICAL SUBJECT INDEX

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ADMISSION TO MESA STATE COLLEGE

To be considered for admission to Mesa State College all students are required to submit a completed application with a $20.00 non-refundable application fee. As indicated by the chart below, the following information is also needed to make an admission decision:

	ACT or SAT	G.E.D. Scores	H. S. Trans.	College Trans.
H. S. Graduate	X	X		
G.E.D. Recipient	X	X		
Transfer Student	*	*	*	X

*Transfer students with less than 30 semester hours (45 quarter hours) of college credit must submit official high school transcripts and either the SAT or ACT results in addition to the official college transcripts.

To provide sufficient time to process an application, all required information must be received two weeks prior to the semester a student plans to attend.

Mesa State College will not offer financial aid to a student until he or she has been admitted to the college. To be considered for all funds available through need-based aid programs (grants, loans) and merit-based aid programs (scholarships) for the fall semester, a financial aid application should be submitted as soon as possible after January 1 and no later than March 15. For a financial aid application, please contact the Office of Financial Aid, P.O. Box 2657, Grand Junction, Colorado 81502 or call (303) 248-1396.

Students applying for program in Nursing and Allied Health must submit a separate application to that department in addition to the Mesa State College application. Please contact the Department of Nursing and Allied Health at (303) 248-1398 to receive the additional application. All students applying to Nursing and Allied Health programs must have either the ACT or SAT results.

An Official Transcript is one that is sent directly to the Office of Admission from the issuing institution(s) previously attended.

Hand delivered or facsimiles of transcripts will not be accepted.

Send the application and all other pertinent information directly to:

Office of Admission
Mesa State College
P.O. Box 2647
Grand Junction, CO 81502

High School Graduates: All high school graduates with no previous college level study are classified as a New Freshman. Contact the high school and request that an official high school transcript and SAT or ACT scores be sent directly to the Office of Admission.

G.E.D. Recipients: Anyone who received a G.E.D. but has no previous college level study is classified as a New Freshman. Students must contact the G.E.D. testing agency and request that G.E.D. scores be sent to the Office of Admission. The ACT or SAT test results are also required. Contact the appropriate testing agency and have the test results sent to the Office of Admission. Students who have not taken the ACT or SAT, please contact the Mesa State College Testing Center at (303) 248-1215 to receive information on the next available testing opportunity. All test results must be received prior to admission and registration.

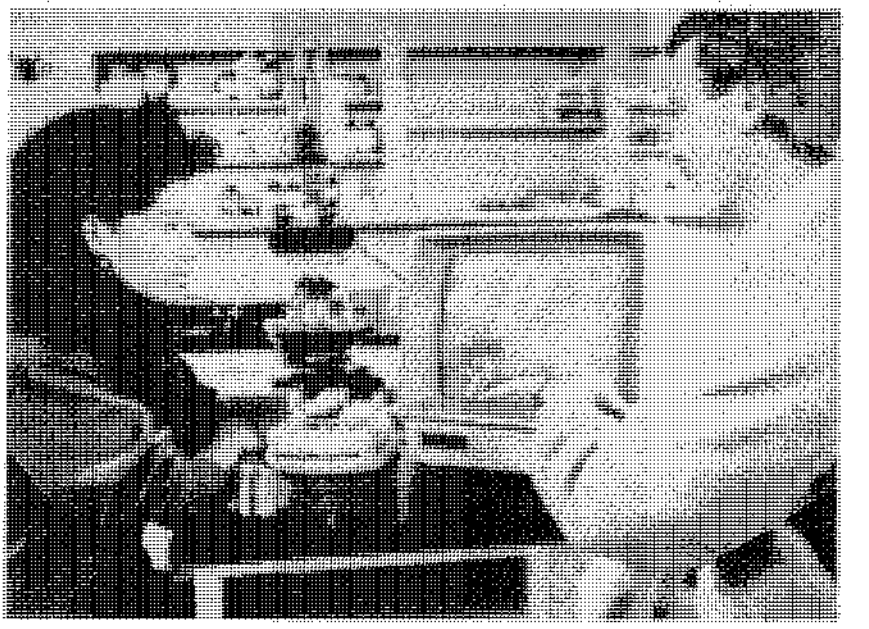
Transfer Students: Any student who has been or is currently enrolled in any college or university is classified as a Transfer Student. Transfer Students are required to submit official transcripts for *all* the institutions previously attended. For those with less than 30 semester hours (45 quarter hours) of college credit, high school transcripts and ACT or SAT test scores are also required.

Transcripts will not be evaluated for transfer credit until a student has been admitted to Mesa State College.

All Applicants: Complete the attached application and pay close attention to all the information being requested. Failure to provide accurate or complete information may result in delay of admission, loss of credit, and/or dismissal. Any questions about the application procedures should be directed to the Office of Admission at 1-800-983-MESA (in Colorado) or (303) 248-1376.

Mesa State College is an equal opportunity educational institution and will not discriminate on the basis of race, color, national origin, sex, age and handicap in its activities, programs, or employment practices.

Mesa State College is a Drug-Free Workplace. All employees and students of the College agree to abide by the requirements in the Federal Drug-Free Workplace Act and the policies stated in the brochure entitled "Drug-Free Schools, Campuses and Workplaces, State Colleges in Colorado, Drug Use and Alcohol Abuse Prevention Program." All employees and students are provided with copies.



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