MESA
STATE
COLORADO

2002–2003
Catalog

Mesa State College grand junction, colorado

2002-2003 ACADEMIC CALENDAR

SUMMER SEMESTER 2002 ***

May 11 (Sat.)	ACT Testing (Residual) 8:00 am, Houston
May 13 (Mon.)	First day of classes for May (4-week) session
May 27 (Mon.)	Memorial Day observance – NO CLASSES
June 6 (Thurs.)	Final exams & last day of May session
June 10 (Mon.)	First day of classes for June (4-week) and 8-week sessions
June 17 (Mon.)	Last day to drop 8-week session class
July 3 (Wed.)	Final exams & last day of June (4-week) session
July 4 (Thurs.)	Independence Day holiday – NO CLASSES
July 8 (Mon.)	First day of classes for July (4-week) session
July 31 (Wed.)	Final examinations for 8-week session and July (4-week) sessions
July 31 (Wed.)	Summer session ends

FALL SEMESTER 2002 ***

Aug. 10 (Sat.)	ACT Testing (Residual) 8:00 am, Houston
Aug. 12-14 (Mon.-Wed.)	New Faculty Orientation
Aug. 16 (Fri.)	Employee Welcome
Aug. 16 (Fri.)	Welcome Week/New Student Orientation
Aug. 16 (Fri.)	Residence halls/apartments open 10:00 a.m..
Aug. 16 (Fri.)	Kick off dinner, first meal served if on the meal plan
Aug. 19 (Mon.)	First day of classes
Sept. 2, 3 (Mon., Tues.)	Labor Day – NO CLASSES
Sept. 5 (Thurs.)	Last day to add or drop a full semester class*
Oct. 14-15 (Mon., Tues.)	Fall Break – NO CLASSES
Oct. 16 (Wed.)	Second module begins
Oct. 16 (Wed.)	Last day to withdraw from full semester classes with a possible grade of "W"**
Nov. 27-29 (Wed.-Fri.)	Thanksgiving vacation – NO CLASSES
Dec. 6 (Fri.)	Last day of classes
Dec. 9-12 (Mon.-Thurs.)	Final examinations
Dec. 12 (Thurs.)	Fall Semester ends

SPRING SEMESTER 2003

Jan. 4 (Sat.)	ACT Testing (Residual) 8:00 am, Houston
Jan. 11 (Sat.)	Residence halls/apartments open 1:00 pm
Jan. 11 (Sat.)	Dining hall opens 5:00 pm
Jan. 11-12 (Sat., Sun)	New Student Orientation
Jan. 13 (Mon.)	First day of classes
Jan. 27 (Mon.)	Last day to add or drop a full semester class
Feb. 17, 18 (Mon., Tues.)	Winter Break – NO CLASSES
Mar. 10 (Mon.)	Last day to withdraw from full semester classes with a possible grade of "W"**
Mar. 10 (Mon.)	Second module begins
Mar. 17-21 (Mon.-Fri.)	Spring vacation – NO CLASSES
May 2 (Fri.)	Last day of classes
May 5-8 (Mon.-Thur.)	Final examinations
May 8 (Thur.)	Spring Semester ends
May 11 (Sun.)	Commencement (9:00 am) Stocker Stadium

* 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 "W" or "F" for a grade. (See the Withdrawal section in this catalog)

***May 1, 2002: Registration for summer and fall for new students and continues until the day classes begin for each term. Find additional information in the schedule for each semester.

MESA STATE COLLEGE

1100 North Avenue
Grand Junction, Colorado 81501-3122

CATALOG

2002-2003

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 and Career Planning . . . . . (970) 248-1177
Admission Office . . . . . (970) 248-1875
Toll Free 1-800-982 MESA (6372)
Athletics . . . . . (970) 248-1503
Billing Information (tuition, fees, etc.) . . . . . (970) 248-1661
Records Office . . . . . (970) 248-1555
Dean of Students . . . . . (970) 248-1366
Financial Aid Office (scholarships, loans, grants) . . . . . (970) 248-1396
Housing . . . . . (970) 248-1536
UTEC, 2508 Blichmann Avenue, Grand Junction, CO 81505 . . . . . (970) 255-2600
Toll Free 1-888-455-2617

Address: MESA STATE COLLEGE, 1100 North Avenue, Grand Junction, CO 81501-3122
Telephone: (970) 248-1020

Mesa State College does not discriminate on the basis of race, color, religion, national origin, sex, age, disability, or Vietnam Era veteran status in admission or access to, or treatment or employment in, its educational endeavors.

The college complies with the Civil Rights Act of 1964, Title IX of the Education Amendments Act of 1972, Sections 503 and 504 of the Rehabilitation Act of 1973, Section 402 of the Vietnam Era Veterans Readjustment Act of 1974, the Age Discrimination in Employment Act of 1967, as amended, the Americans with Disabilities Act of 1990, the Civil Rights Act of 1991, and all civil rights laws of the State of Colorado.

Inquiries may be made to the Affirmative Action Office at Mesa State College, Houston Hall Room 204, Grand Junction, Colorado.

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.

TABLE OF CONTENTS

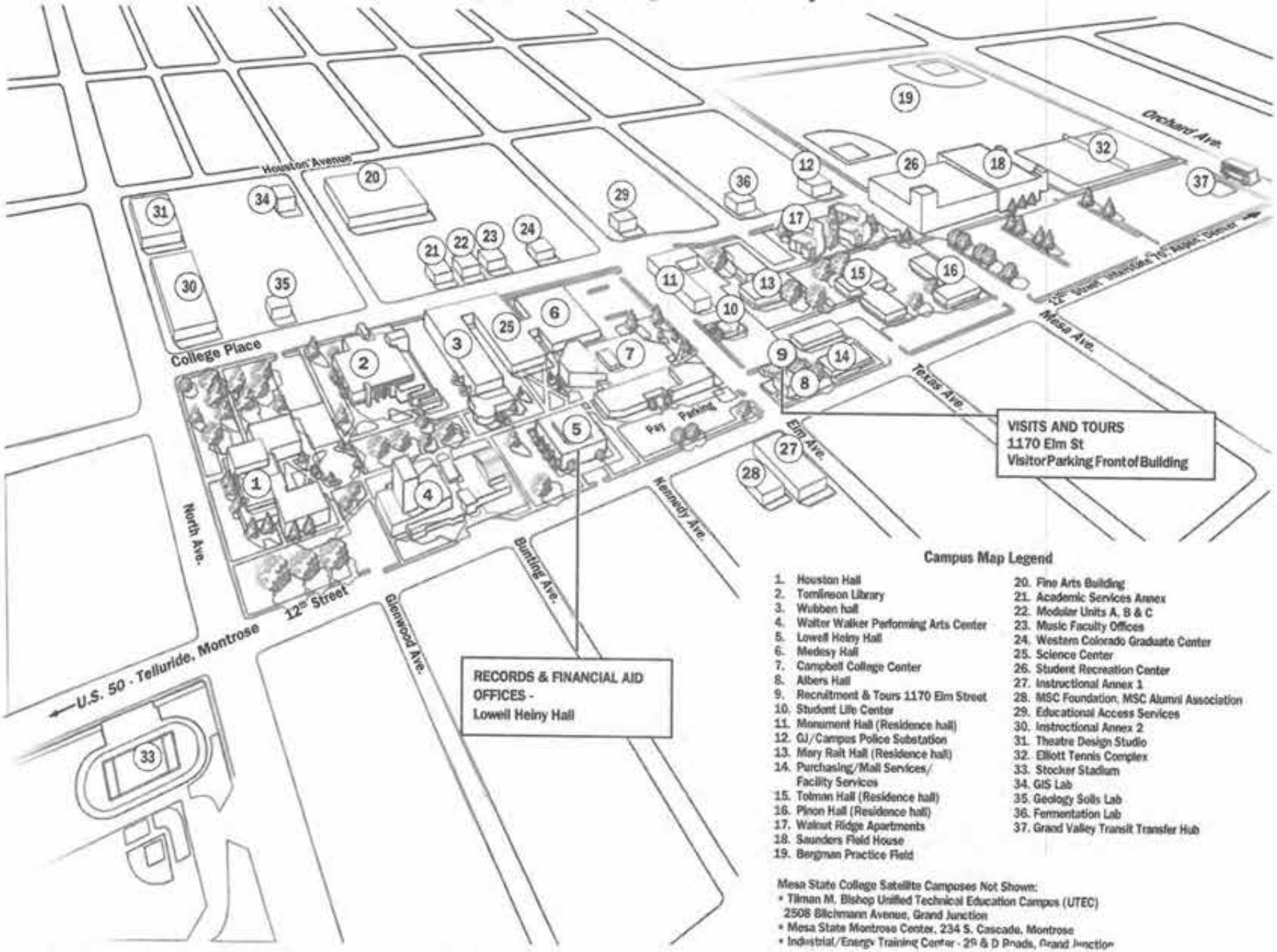
(See Alphabetical Index for specific topics)

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.

Mesa State College Main Campus



Campus Map Legend

1. Houston Hall
2. Tomlinson Library
3. Wubben hall
4. Walter Walker Performing Arts Center
5. Lowell Heiny Hall
6. Medesy Hall
7. Campbell College Center
8. Albers Hall
9. Recruitment & Tours 1170 Elm Street
10. Student Life Center
11. Monument Hall (Residence hall)
12. GJ/Campus Police Substation
13. Mary Rait Hall (Residence hall)
14. Purchasing/Mail Services/ Facility Services
15. Tolman Hall (Residence hall)
16. Pinon Hall (Residence hall)
17. Walnut Ridge Apartments
18. Saunders Field House
19. Bergman Practice Field
20. Fine Arts Building
21. Academic Services Annex
22. Modular Units A, B & C
23. Music Faculty Offices
24. Western Colorado Graduate Center
25. Science Center
26. Student Recreation Center
27. Instructional Annex 1
28. MSC Foundation, MSC Alumni Association
29. Educational Access Services
30. Instructional Annex 2
31. Theatre Design Studio
32. Elliott Tennis Complex
33. Stocker Stadium
34. GIS Lab
35. Geology Soils Lab
36. Fermentation Lab
37. Grand Valley Transit Transfer Hub

Mesa State College Satellite Campuses Not Shown:

- Tilman M. Bishop Unified Technical Education Campus (UTEC) 2508 Blichmann Avenue, Grand Junction
- Mesa State Montrose Center, 234 S. Cascade, Montrose
- Industrial/Energy Training Center - 29 & D Roads, Grand Junction

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 at 1-800-982-MESA or access the website at www.mesastate.edu.

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 four schools, followed by (1) the graduate degree, (2) the baccalaureate degrees, and (3) the associate degrees and certificates offered. Sub-sections are in alphabetical order, with the general requirements for earning each degree or certificate included. The next sub-sections are (4) Teacher Licensure and (5) electives and/or minors.

Course Descriptions

A brief description of each course at Mesa State College is listed alphabetically by prefix. Class schedules are published before each semester and are available from the Office of the Registrar. Not all classes described in this catalog are offered every semester or every year.

Mesa State College Personnel

The administrative officers, support personnel, and faculty are listed.

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 and specialized graduate institution with moderately selective admissions. Mesa State College shall offer liberal arts and sciences programs and a limited number of professional, technical, and 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. As of July 1, 1996, Mesa State was authorized to offer a program of courses leading to a business administration graduate degree. Mesa State may offer other graduate programs in the future. College enrollment, now over 5,200, 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) The graduate degree in Business Administration (MBA);
2) Programs leading to baccalaureate degrees and associate degrees in liberal arts, sciences, business, and professional areas;
3) Vocational technical programs leading to certificates and associate degrees;
4) Continuing education programs directed toward personal, civic, vocational, and professional self-improvement;
5) 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;
6) Community services, including intellectual, civic, and cultural activities, advisory services, and research programs;
7) Sufficient courses in all undergraduate 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 Higher Learning Commission and a member of the North Central Association of Colleges and Schools, 30 North LaSalle Street, Suite 2400, Chicago, IL 60602 (www.ncahigherlearningcommission.org). 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, American Association of Colleges of Nursing, and the Committee on Allied Health Education of the American Medical Association (Radiologic Sciences).

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 110,000. 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 snowfall) 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.

Inter-Institutional Students

One purpose of the OSC is to establish procedures for facilitating superior programs through shared resources – physical, professional, organization, 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.

National Student Exchange

Mesa State College is a member of the National Student Exchange Program. NSE is a consortium of over 160 colleges and universities in the United States and its territories. Mesa State students may be able to participate in this program at in-state tuition rates and receive full credit for course work completed while on exchange. For further information, contact the Coordinator of Academic Advising/NSE Coordinator in Lowell Heiny Hall 127 or telephone (970) 248-1177.

Mesa State College Montrose Campus

Located at the Buell Higher Education Center, 234 S. Cascade, in Montrose, the Campus offers students the opportunity to complete an associate degree, or work toward their baccalaureate degree by completing the General Education component. A limited selection of upper division coursework is offered via distance technology. The Montrose Campus offers coursework primarily between the hours of 1:00 p.m. through 9:30 p.m. to meet the needs of both traditional and working students.

The Campus office is open from 8:00 a.m. to 5:00 p.m., Monday through Friday. All student services are available at the office (admissions, assessment, financial, and business). Academic advising services are available at the Montrose Campus by appointment. In addition to the classrooms and office, the Campus houses two computer labs and a telecommunications classroom. The telephone number for the Montrose Campus is (970) 249-7009.

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.

Diversity Statement

Following is the statement of philosophy on diversity which has been adopted by the faculty at Mesa State College:

"Mesa State College is a community of scholars in the liberal arts tradition. As faculty we believe that all people, regardless of gender, linguistic heritage, marital status, origin, religion, or sexual orientation, have something worthwhile to contribute and that these contributions benefit us all. Therefore, we intend that within our academic community all cultural differences will be treated with equal respect and tolerance. We desire that our students have the opportunity to appreciate the diversity of our modern world, and we encourage them to partake of the resources available within our community. As faculty we pledge ourselves to provide as many divergent cultural experiences for our students as the resources of the college and the needs of our disciplines allow."

"To further tolerance and appreciation of our society's diversity, Mesa State requires that all graduates fulfill General Education requirements. In doing so we honor the validity of a liberal education. We hope that the experience will help our students understand how to appreciate the true diversity of the world. Because diversity promotes multiple opinions, techniques, viewpoints and approaches, it is not the individual courses within the General Education program which we believe will further the above-stated goals, but the whole experience of the program itself."

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.

General Policy: Mesa State College has the responsibility of maintaining and protecting the confidentiality of student's official educational records. Education records are records directly related to a student and maintained by the College or by a party acting for the College. The term does not include those records specifically excluded by Section 99.3 of the Privacy Act. Mesa State College also supervises the access to and/or release of educational records of its students. The Family Educational Rights and Privacy Act (FERPA) also provides students who reach the age of 18 the right to inspect, review, and challenge their educational records. FERPA covers enrolled and former students, including deceased students, who have matriculated at Mesa State College. Students who are not accepted to Mesa State College have no rights under FERPA.

Directory Information: Mesa State College may, without the consent of the student, release to persons outside the institution information designated as Directory Information shall include information in an educational record which would not generally be considered harmful or an invasion of privacy if released, including but not limited to:

1. student name, address, telephone number;
2. date and place of birth;
3. major field of study;
4. participation in officially recognized activities and sports;
5. weight and height of athletic team members;
6. photograph;
7. dates of attendance;
8. degrees and awards received;
9. most recent educational institution attended; and
10. E-mail address.

Note: At any time, students may request the Directory Information not be released to other parties without written permission to the Office of the Registrar. This request will be honored until the student requests in writing that directory information be disclosed. Personally identifiable information may not be released without the student's consent except provided by the Act; i.e., members of the College faculty and staff with a legitimate educational interest, et al.

Access to Student Educational Records: FERPA provides current, former students, and parents of dependent students the right to inspect, review, and challenge their educational records. Parents may challenge a student's denial of consent to access by producing the most current copy of their Internal Revenue Form 1040 showing the student in question is a dependent. Students are permitted to inspect and review their educational records within a maximum of 45 days after the request is received. Students may not review financial information received from their parents or guardians, confidential letters, and recommendations placed in their files prior to January 1, 1975, academic records containing information regarding other students, administrative, disciplinary, law enforcement, student health records, and/or records which are maintained in the sole possession of the maker.

While students who have a financial hold or past due account (all holds included) have a right to inspect their academic records, no transcript will be released to the student or other party until holds are reconciled. Bankruptcy, however, removes any financial obligations the student has to Mesa State College.

Please contact the Office of the Registrar if you have any questions regarding this policy.

Proof of Identification: Before access is allowed to educational records, the student must display some form of personal identification. At the minimum, this identification should include a photograph of yourself.

Personally Identifiable Information – Includes:

1) your name, your parent(s), or other family member;
2) your address
3) a personal identifier such as your social security number or student number;
4) a list of personal characteristics; or
5) other information which would make your identity easily traceable.

Record – Any information or data recorded in any medium, including but not limited to handwriting, print, tapes, film, microfilm, microfiche, or e-mail.

DEGREES AND PROGRAMS

Mesa State College grants the Master of Business Administration, 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 academic school detailing specific and current requirements for the degree or certificate sought and is responsible for meeting these requirements.

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

School of Applied Technology – Accounting Technician, Administrative Office Technology; Administrative Secretary, Communications Technology; Computer Aided Drafting; Criminal Justice; Culinary Arts; Electric Lineworker; Electronic Technology; Legal Secretary, Manufacturing Technology; Medical Secretary; Transportation Services.

School of Business and Professional Studies – Accounting; Business Administration; Computer Information Systems; Business Economics; Finance; Human Performance and Wellness; Human Resource Management; Management; Marketing; Nursing; Radiologic Sciences; Travel, Tourism and Commercial Recreation Management.

School of Humanities and Social Science – Administration of Justice; Anthropology; Art; Counseling Psychology; Classical Studies; Criminology; Dance; Early Childhood Education; English; Foreign Languages; General Social Science; Graphic Art; History; Human Services; Liberal Arts; Mass Communications; Music; Music Theatre; Philosophy; Political Science; Psychology; Sociology; Speech; Teacher Education and Licensure; Theatre.

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

Degrees and Programs of Study

Studies undertaken by a student at Mesa State College depend upon career plans and educational objectives. The College offers a graduate degree in Business Administration, 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 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 statewide 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 technical education programs. These Associate of Applied Science (A.A.S.) degrees and Certificates of Occupational Proficiency are of a technical nature and are normally chosen by students whose immediate plans are to begin a career. They are designed to help students develop the specific skills required for employment in various technical occupations.

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)

Master of Business Administration (M.B.A.)

Bachelor of Arts (B.A.)
- **English**
  - Literature
  - Writing
  - English with Teaching (Secondary)
- **Fine and Performing Arts**
  - Art
  - Art Education (K-12)
  - Graphic Art
  - Music Education (K-12)
  - Music Performance:
    - Instrumental
    - Keyboard
    - Vocal
  - Music Theatre
  - Theatre
    - Acting/Directing
    - Design/Technical

History
- History
- History with Teaching (Secondary)

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

Liberal Arts
- Liberal Arts
- Liberal Arts with Teaching (Elementary)

Mass Communications
- Broadcast Production
- Media News
- Print Media
- Public Relations

Political Science
- Political Science
- Administration of Justice

Psychology
- Psychology
- Counseling Psychology

Social Science

Sociology
- Sociology
- Anthropology
- Criminology
- Human Services

Bachelor of Business Administration (B.B.A.)
- Business Economics
- Finance
- Human Resources Management
- Management
- Marketing
- Travel, Tourism and Commercial Recreation Management

Bachelor of Science (B.S.)

Accounting
- Governmental and Not-For-Profit Accounting
- Information Technology
- Managerial Accounting
- Public Accounting

Biological Sciences
- Biology
- Biology with Teaching (Secondary)

Computer Information Systems

Computer Science

Environmental Science and Technology
- Environmental Restoration and Waste Management
- Environmental Science
- Environmental Science Education - Early Adolescence/Young Adult (Grades 7-12)

Mathematics
- Mathematics
- Computational Science
- Mathematics with Teaching (Secondary)
- Statistics

Physical Sciences
- Applied Physics
- Chemistry
- Geology
  - Environmental Geology
  - Geology with Teaching (Secondary)
- Physics
  - Physics with Teaching (Secondary)

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.)

Administrative Office Technology
- Accounting Technician
- Administrative Secretary
- Legal Secretary
- Medical Secretary

Communications Technology Cluster
- Telecommunications Engineer

Criminal Justice*

Culinary Arts

Electronics Technology

Environmental Restoration Engineering Technology

Manufacturing Technology Cluster
- Computer Aided Design Technology
- Machine Technology
- Welding

Radiologic Technology

Transportation Services Cluster
- Automotive Technology
- Diesel Technology

Certificate of Occupational Proficiency

Culinary Arts

Electric Lineworker

Electronics Technology

Manufacturing Technology Cluster
- Computer Drafting Technology
- Machining
- Welding

Transportation Services Cluster
- Automotive Service
- Diesel Mechanic

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

*Via articulation with Delta-Montrose Area Vocational Center.

ADMISSION INFORMATION

General Undergraduate Admission Procedures

How to Apply

To be considered for admission, undergraduate applicants should submit the application for admission along with a $30 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, and the applicant will be notified of his or her admission status after all credentials have been received. Applications may be obtained from the Office of Admission at Mesa State College or from any Colorado high school counselor. To request an application from Mesa State, call toll free 1-800-982-MESA or (970) 248-1875. Applicants can apply on the Mesa State College web site at www.mesastate.edu.

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 19 on the ACT, or 860 combined on the SAT, may be admitted to Mesa State.

Admission does not assure acceptance of an individual student into 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 re-apply 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.

Students who are not accepted into a baccalaureate program may be conditionally accepted into the PASS Program. If selected for the program, students will be registered in specific courses designed to promote academic success. This program is not optional and students who elect not to enter the PASS Program will not be eligible to attend Mesa State College. Please contact the Office of Admission for further information.

Probationary Admission Status

Any student admitted to Mesa State College on probationary status must earn a minimum 2.00 GPA the first semester or be placed on academic suspension and will not be eligible to return to Mesa State College as stated under the academic suspension guidelines.

Orientation and Registration for Classes

New students are required to meet with an advisor in the Academic Advising and Career Planning Office, 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 the Academic Advising section.

New students are encouraged to attend the orientation program. The orientation program is held prior to the beginning of both fall and spring semesters.

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 complete an application for admission, submit the application fee, and have all credentials on file, including transcripts and test scores before the published deadline. Non-degree 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. The ACT or SAT is not required for students who are 23 years of age or older.

In general, first time freshmen will take the COMPASS Assessment for course placement purposes, before registering for classes. COMPASS is a self-paced, adaptive, computerized placement assessment designed to provide additional information about the student's academic level. Results are used for course placement. Please contact the Testing & Assessment Center at 248-1139 for information on COMPASS.

Admission Procedures by Student Classifications

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

High School Students

1. Obtain and complete an application for admission to Mesa State College or apply online at www.mesastate.edu.
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 $30 application fee.
4. Request that the high school counselor forward official transcripts directly to the Mesa State College Office of Admission. Mesa State College requires a final high school transcript showing a graduation date.
5. Take either the American College Test (ACT) 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 $30 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.

Home School Students

1. Obtain and complete an application for admission to Mesa State College.
2. Submit the application and non-refundable $30 application fee.
3. Submit copies of all nationally standardized test results (achievement tests).
4. Provide outline or transcript evaluation form, available in the Office of Admission, of all courses taken at the high school level. Students may also submit a portfolio to describe their high school education. If any courses are taken at a traditional high school, submit all transcripts.
5. Take either the American College Test (ACT) or Scholastic Aptitude Test (SAT) and have the results sent directly to Mesa State College.

Non-Traditional Students

Students who are 23 years of age or older when applying for admission are not required to submit an ACT or SAT score for admission. However, if the student did complete the ACT or SAT, we can utilize that score even if the test was not completed in recent years. Students who do not complete the ACT or SAT will be considered for admission to a 2-year program.

If the ACT or SAT is more than three years old, or no ACT or SAT is submitted, the student will be required to complete the COMPASS assessment for math placement, and the essay exam for English placement. Both tests are administered by the Testing and Assessment Center.

NOTE: Students applying to the Radiologic Technology program are still required to complete the ACT for admission to these programs.

Transfer Students

1. Obtain and complete an application for admission to Mesa State College.
2. Submit the application along with a non-refundable $30 application fee.
3. Request that **each** previously attended college or university send official transcripts to the Mesa State College Office of Admission. **Mesa State College will not consider any transcript as official unless it is sent directly from the issuing institution to Mesa State College.**
4. If fewer than 30 semester hours of prior college course work has been completed,
   (a) Request that the high school send official transcripts directly to the Mesa State College Office of Admission. (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 unless the student is 23 years of age or older.

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, an associate degree, or a prior baccalaureate degree. In computing the cumulative admission grade point average, Mesa State College will use the grade point average as reported by the prior college or university on the tran-

script(s) submitted. If the student has attended more than one prior institution, the GPA of each is summed together for a total average admission GPA.

Transfer students who are on probation or suspension from another college or university will not be admitted into a baccalaureate degree program but may be **considered** for admission into a Mesa State College associate degree program. If admitted, transfer students who are on probation or suspension from another college may be placed on probation at Mesa State College.

An evaluation of transfer courses is made once the student's application file is complete. Students who do not receive an evaluation within 2 weeks after notification of admission or who need an evaluation for advising purposes may request an evaluation from the Office of Admission. General education evaluations are completed in the Office of the Registrar; specific degree requirements are determined by the faculty advisor.

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 regionally 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 regionally accredited and was accredited or was a candidate for accreditation at the time the credit was earned.
3. Regionally accredited two-year community or junior colleges.
4. Regionally accredited 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 or more 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 advisor or dean.

Transfer students may also wish to request the Tips for Transfer Students handout or review the same information on the Mesa State College web site.

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) must complete a returning student application form. The form may be obtained at the Mesa State College Office of Admission. 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 to receive credit for courses completed. See *Catalog Under Which a Student Graduates* section to determine the catalog to be followed for graduation.

Students wishing to return after being on suspension must submit a returning student application to the Office of Admission at Mesa State College to be considered for re-admission. See the *Academic Suspension* section.

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/petition for "academic renewal" is that the student must have completed 24 academic course credits at Mesa State College, excluding human performance and wellness activity courses and remedial courses below the 100 level, with a minimum grade point average of 3.00. The student must apply/petition no later than the semester following the completion of these 24 credit hours. Matriculation and/or course completion at other institutions during the five-year period of absence has no bearing on the application/petition.

Non-Degree Seeking Students

Students who do not wish to pursue a degree or certificate at Mesa State College may register as non-degree seeking rather than being formally admitted to the College. Students who need to take a few courses to increase their admissibility as a degree-seeking student may also wish to register initially as non-degree seeking. Policies and guidelines include:

1. Applicant must complete the Mesa State College Undergraduate Admission application, checking the non-degree seeking student box, and submit it along with a non-refundable $30.00 admission free.
2. Students who do not wish to pursue a degree or certificate are not required to submit high school or college transcripts or test scores. Students who plan to later apply for formal admission to Mesa State College may wish to submit this information for later use.
3. Non-degree seeking students are not eligible for financial aid or scholarships and will not be assigned an advisor.

4. Non-degree seeking students must consistently earn a minimum semester grade point average of 2.00 while enrolled at Mesa State College. Students who fail to achieve the minimum must apply for admission as a degree-seeking student to continue taking classes.
5. 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.
6. Degree seeking students will have priority over non-degree seeking students regarding registration.

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 formal application will be used to determine admissibility into the college and 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 and students over age 23, the alternative assessment test.

Concurrent Students

High school students with either a senior or junior status and an 80 Index or 3.0 minimum cumulative grade point average may be allowed to register for college classes that are not replicated through the school district curriculum under guidelines from House Bill 1244. In some cases, the school district or the Department of Education will pay the tuition of the student to attend Mesa State College (summer school excluded). Students are always responsible for payment of any and all fees, books, and supplies. The student is responsible for payment of tuition not covered by the school district or the Department of Education. Students must give notice to the high school 60 days before the beginning of the semester they wish to enroll and have all information submitted to the Mesa State College Office of Admission.

Students who do not meet the criteria above may still be allowed to take classes at Mesa State College if approved by the Office of Admission. However, the student is responsible for payment of all tuition/fees and any other expenses.

All students wishing to become concurrently enrolled at Mesa State College must be enrolled in high school (or, if home schooled, be at the senior or junior level) and must submit to the Mesa State College Office of Admission the **Statewide Agreement for High School Concurrent Enrollment Form** along with the following information:

- Mesa State College Concurrent Enrollment Form
- Official high school transcripts (or, if home schooled, a grade report meeting above criteria)
- ACT/SAT test scores (if available)
- $30 non-refundable application fee (if a first-time applicant)
- Proof of two measles, mumps & rubella vaccinations

Students should understand that being a concurrently enrolled student does not guarantee acceptance to Mesa State College, nor does Mesa State College guarantee that the approved classes will be available upon registration. Before registering for a specific course, students must fulfill the prerequisites listed in the current Mesa State College catalog.

International Students

To be considered for admission, students who are not U.S. citizens or resident aliens must complete and submit the following to the Office of Admission at Mesa State College prior to May 1 for fall semester and at least by September 1 prior to spring semester:

1. Application form with $30 non-refundable application fee
2. Copy of American College Test (ACT) scores or Scholastic Aptitude Test (SAT) scores and proof of English proficiency.
3. Official secondary school transcript (transcripts not issued in English must be accompanied by exact English translations)
4. Transcripts from all other colleges or universities attended
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 Office of Admission.

Prospective international students who are seeking admission to Mesa State College and whose primary language is not English, 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 a minimum average of 525 (paper based) or 190 (computer based).
2. Submission of results of Michigan Test of English Language with a minimum score of 80.

3. Submission of results of ELPT test score of 956 (may be taken at Mesa State College)
4. 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.
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 $15,000 per calendar year (12 months).

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

English as a Second Language (ESL) Bridge Program

Mesa State College offers an eight-week summer, intensive English language program for students whose primary language is not English. The program is designed to give qualified students the advanced English training needed to meet admission requirements at Mesa State College and other colleges and universities throughout the U.S. This program offers a balance of classroom instruction, peer interaction, and immersion in local culture that will improve English skills as well as introduce participants to U.S. culture and the Western Colorado region.

Instruction focuses on five key areas: reading, grammar, writing in class, writing in the lab, and conversation. Classes are taught by qualified instructors with advanced training in teaching English to users of other languages.

Admission requirements: Students must be at least 18 years of age and must have completed their secondary (high school) education before the program begins. A $50, non-refundable, application fee must accompany the application form. Official secondary school transcripts are considered official if they are issued on school letterhead and if they bear the official seal and signature of the registrar or appropriate school official. Transcripts not issued in English must be accompanied by exact English translations. Transcripts must be submitted for any college or university studies completed. The results of a recent English assessment must be submitted, preferably the Test of English as a Foreign Language (TOEFL). Applicants must have the equivalent of a 480 or higher paper-based or 157 or higher computer-based TOEFL score to be eligible for admission.

Admission to Specific Undergraduate 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 or director of the academic school in which the desired program is offered for special requirements. Examples follow:

Nursing and Radiologic Science Programs

Students applying to the Nursing and Radiologic Science programs must submit additional material. **ACT or SAT scores are required for all radiologic science applicants.** Students applying for admission into the programs of nursing and radiologic science must be admitted into the general College. Admission to Mesa State College does not guarantee admission into the Nursing or Radiologic Science programs, which require a separate application. Please contact Nursing and Radiologic Sciences for additional information by calling toll free 1-800-982-MESA or (970) 248-1398.

Accounting Program

Entering freshmen are not eligible for admission to the Accounting program but students wishing to major in accounting must be admitted into the general College. Admission to Mesa State College does not guarantee admission into the Accounting program.

Once a student has completed thirty semester credit hours with a 2.75 GPA or higher and has met the other specific criteria for admittance, he or she may apply to the Accounting Program Admission Committee. Specific admission information may be obtained from the Department of Accounting and Information Technology in the School of Business and Professional Studies by calling (970) 248-1656. More information is also available in this catalog under "Accounting" in the Baccalaureate Programs section.

Athletic Training Education Program

Students wishing to apply for admission into the Mesa State College Athletic Training Education Program (ATEP) must go through a competitive application process. A number of prerequisite courses must be completed, a certain cumulative GPA must be attained, and "field experience" hours must be documented in the Mesa State College Athletic Training Room. Admission into Mesa State College does not guarantee admission into the ATEP. Please contact the Human Performance and Wellness Department for specific admission requirements and an application.

Business Administration

Entering freshmen are not eligible for admission to the Business Administration program but students wishing to major in each concentration of the Business Administration area must be admitted into the general College. Admission to Mesa State College does not guarantee admission into the Bachelor of Business Administration program.

Once a student has completed 23 semester credit hours, and has met the other specific criteria for admittance, he or she may apply to the Business Administration Program Admission Committee. Specific admission information may be obtained from the Department of Business Administration in the School of Business and Professional Studies. More information is available in this catalog under Business Administration in the Baccalaureate Program section.

Computer Information Systems

Entering freshmen are not eligible for admission to the Computer Information Systems program, but students wishing to major in Computer Information Systems must be admitted into the general College. Admission to Mesa State College does not guarantee admission into the Computer Information Systems program.

Once a student has completed 45 semester credit hours with a 2.75 GPA or higher, and has met the other specific criteria for admittance, he or she may apply to the Computer Information Systems Program Admission Committee. Specific admission information may be obtained from the Department of Accounting and Information Technology in the School of Business and Professional Studies. More information is available in this catalog under Computer Information Systems in the Baccalaureate Program section.

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 testimony must be done prior to initial registration.

Immunization Policy for Measles, Mumps, and Rubella

Colorado State Immunization Law states that after July 1, 1995 all college students (now including those students over twenty) born since January 1, 1957 must have two (2) measles, two (2) mumps, and two (2) rubella doses. If the student received a second measles dose prior to July 1, 1992 the second mumps and rubella are not required.

Written evidence of titers (blood tests) showing immunity to measles, mumps, and rubella is acceptable. If the student completes an exemption form and an outbreak occurs, the student will be subject to exclusion from school.

Students must prove compliance within 60 days from the beginning of classes during 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 veteran's 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 the Registrar 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 minimal processing time required for the Veterans Administration to establish an applicant's file. Further information may be obtained from the Coordinator of Veterans Affairs in the Office of the Registrar.

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

Undergraduate Admission Assessment and Counseling Tests

ACT or SAT

Scores from either the ACT or the SAT are required of all degree-seeking students attending Mesa State College. Test scores must be on file in the Office of Admission 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. Certain programs, including Radiologic Science, may require a minimum ACT or SAT score. For specific requirements, contact the dean or director of the appropriate school. ACT and SAT test results also are used by the student and advisor 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 who are 23 years of age or older when they apply for admission
2. Students enrolled **only** in non-credit classes
3. Non-degree seeking students
4. Students who have already earned an associate or baccalaureate degree at another regionally accredited institution
5. Students who are transferring from other regionally accredited colleges or universities with 30 or more semester hours of credit. (This does not apply to applicants to the Nursing and Radiologic Sciences programs and any other programs that may require a specified ACT or SAT score as an entrance requirement.)

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 Office of Admission prior to registration. ACT or SAT scores from a previous college or university are acceptable.

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 prepaid, non-refundable testing fee of $50 is due no later than one week prior to the examination date and will be collected by the Testing Center. Test results are reported directly to the Office of Admission. ACT Residual scores are used for Mesa State College and are not transferable to any other institution. Test results will be available to the student's advisor during registration. Contact the Testing and Assessment Center for further details at (970) 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 the School of Applied Technology 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 Learning Process Evaluation section 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 Studio Art – General; Studio Art – Drawing; Art History; Biology; Chemistry; Computer Science A; Computer Science AB; Macroeconomics; Microeconomics: English Literature and Composition; English Language and Composition; French Language; French Literature; German Language; German Literature; Latin – Virgil; Latin Literature; Spanish Language; Spanish Literature; Government and Politics – United States; Government and Politics – Comparative; U.S. History; European History; World History; Human Geography; Mathematics – Calculus AB; Mathematics – Calculus BC; Music Theory; Physics B; Physics C – Mechanics; Physics C – Elec. And Mag.; Psychology; Statistics.

The Office of the Registrar will supply information concerning the scores required for earning academic credit or advanced placement in the various subject areas.

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 semester 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 experiences see the Bachelor of Science in Nursing in the Programs of Study section of this catalog.

For more information contact the appropriate academic dean or director or the College Testing and Assessment Center at (970) 248-1215.

International Baccalaureate

Mesa State College recognizes the International Baccalaureate Diploma Program and awards credit to qualified high school students. For policy details contact the Office of Enrollment Management or check the Mesa State website.

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 semester credit hours.
2. CLEP and credit by examination/department challenge examinations – maximum of 20 credit hours for a baccalaureate degree or an Associate of Applied Science degree, a maximum of 12 semester credit hours for an Associate of Arts or an Associate of Science degree and a maximum of six semester credit hours for a certificate of occupational proficiency. Students may not earn CLEP credit in a class in which they have been previously enrolled including a class from which the student withdrew, so that the transcript shows a – "W," "WP," or "WF." Students must receive approval and follow the procedure to challenge a course, including enrolling in that course. See the Office of the Registrar for a copy of the procedure.
3. Advanced Placement – maximum of 30 semester credit hours for a baccalaureate degree, 15 semester credit hours for an associate degree or a maximum of six semester credit hours for a certificate of occupational proficiency.
4. Competency credit – maximum of 30 semester credit hours towards a baccalaureate degree or 25 percent of the total semester 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 Office of the Registrar for details and guidelines.
5. Cooperative Education, Internships, Practicums, etc. – non-classroom oriented courses such as cooperative education, internships, practicums and other courses determined to be of this type are subject to the following limits: a maximum of 15 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 semester 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 semester credits
2. Associate of Science or Associate of Arts – 15 semester credits
3. Associate of Applied Science – 20 semester credits
4. Certificate of Occupational Proficiency – twenty-five percent of the semester credits required in the program

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 advisors and the Testing and Assessment Center.

No-Credit-Desired/Audit Courses

A student who desires to attend certain undergraduate 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 under the "no-credit desired" category are the same as for classes taken for credit. Exceptions to this policy will be made for senior citizens.

The deadline for a student to change from "no-credit desired/audit," to credit is the same as the deadline to add a class. The last day for a student to change from credit to "no-credit desired/audit" is the same as the deadline to drop a class.

Senior Passport to Education Program

Mesa State College provides individualized support, including academic and scheduling decisions, for persons 60 years and older. For more information, contact the Office of Admission at (970) 248-1847.

Classes for No Credit

Persons 60 years of age or older who do not wish to earn college credit may attend undergraduate 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, self-supporting, and certain other courses for which special charges normally are assessed.)

Interested persons should obtain a registration form from the Office of the Registrar. The registration form must be signed by the instructor granting approval and returned to the Office of the Registrar. No Mesa State College records of participation will be maintained.

Classes for Credit

Persons 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.

Graduate Student Admission Policies and Procedures

Admission Procedures

A student who has received a baccalaureate degree from a regionally accredited institution and who wishes to take either additional undergraduate courses or begin graduate courses must submit the following items to the Office of Admission, Mesa State College, 1100 North Avenue, Grand Junction, Colorado, 81501-3122. The following items shall constitute the admission file for each applicant:

1) A completed application for admission to graduate programs of Mesa State College and a $50 application fee. The fee is non-refundable and is not applicable toward tuition. The fee is not required for students previously enrolled as undergraduate students at Mesa State College. An application form may be obtained by writing the Mesa State College Director of Graduate Programs or by telephoning (970) 248-1778, or from our website: www.mesastate.edu.
2) Official transcripts of all college and university work sent directly to the Office of Admission by each institution attended. Transcripts received directly from students cannot be accepted except for advisement purposes. The transcripts of students who previously attended Mesa State College will be obtained from the Office of Admission and will not require a student request.
3) Students who are applying to the graduate business program must have a score sent from Educational Testing services for the GMAT and accompanying essay, or for the GRE; and from Psychological Corporation for the Miller Analogies Test (MAT).
4) Students whose native language is not English must submit the score from an English language proficiency test (Test of English as a Foreign Language/TOEFL). A minimum score of 550 is required.

Admission Policies

Acceptance of Transfer Credit

A maximum of nine semester credit hours of resident graduate credit from other regionally accredited graduate institutions may be applied to a graduate program. Transfer credits must be directly applicable to the degree programs and must be approved by the applicant's graduate committee and the director of the individual graduate program. Graduate credits accepted in transfer must not be from a correspondence course, must carry a grade of "B" or better, and must be from an institution where the student maintained a graduate GPA of at least 3.00 on a 4.00 scale. Credits accepted in transfer do not apply to the GPA at Mesa State College.

Graduate Advising

Initial advisement of all graduate students in a degree area will be made by the director of the individual graduate program. During the first semester of enrollment, each degree-seeking graduate student will be assigned a graduate advisor by the dean of the school in which a program resides. The advisor shall act as chairperson for a graduate committee for each student. The graduate committee shall consist of at least two faculty members (including the advisor) and is appointed by the dean of the school in consultation with the student. One member of the committee may be from outside the department of the student's graduate program. A change in membership of the graduate committee may be requested by the student through the dean.

The responsibilities of the graduate advisor and the graduate committee include advisement, approval of the degree plan, approval of a thesis or directed research topic and final document (if appropriate), or internship/practicum (if appropriate), and administration and approval of comprehensive and/or oral examinations.

Course Load

Graduate students enrolled in nine or more semester credit hours shall be considered as full-time students; those enrolled for six semester credit hours shall be considered as part-time students.

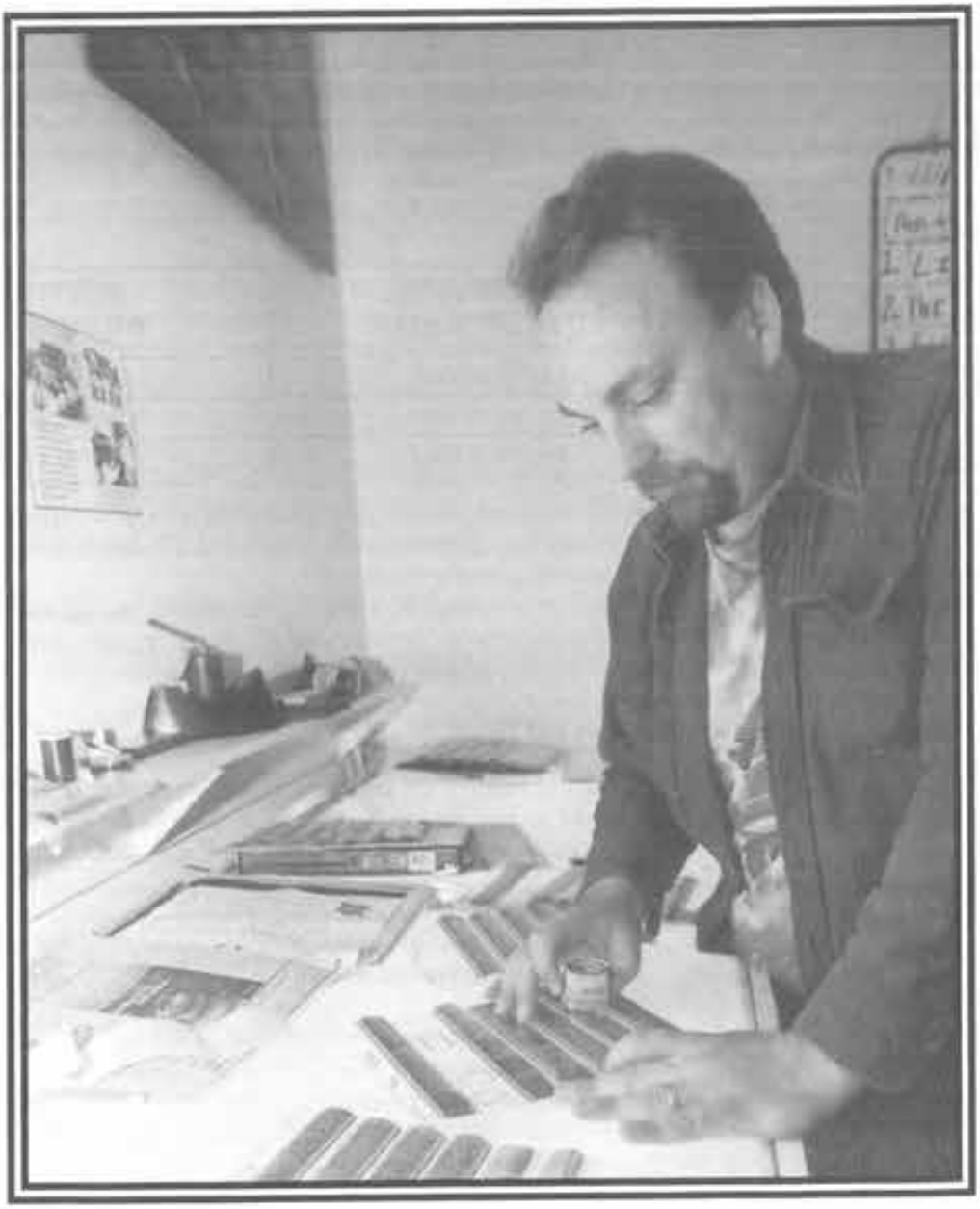
Time Limits

Students are expected to complete their program within six years. Students who do not complete their program within six years will be dropped from the program. Exceptions to this policy must be approved by the Graduate Council.

Degree Plan

All degree-seeking graduate students are required to submit a degree plan, approved by all members of the graduate committee and proper director, to the Director of Graduate Programs. The degree plan should be submitted no later than upon completion of 12 semester credit hours of study, since any course taken prior to having an approved degree plan is subject to review for suitability in the program. Failure to maintain continuous enrollment may result in modification of the degree plan. Changes in the degree plan must be approved by the graduate advisor and program director and submitted to the Director of the individual graduate program for final approval.

Additional information and a description of the MBA program is found in this catalog under the *Master of Business Administration (MBA)* heading in the *Programs* section.



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

Residency for tuition classification in the State of Colorado is governed by Sections 23-7-101 to 104 and 23-7-105 of the Colorado Revised Statutes. Mesa State College must apply the rules set forth in the Residency Statute, and is not free to make exceptions except as specifically permitted under the Statute. Although an individual may be considered a state resident for voting and other legal purposes after being in the state for a short period of time, the tuition law specifies additional requirements for classification as "in-state" for tuition purposes. The Colorado Commission on Higher Education (CCHE) has prepared an informational brochure that is available in the Office of Enrollment Management, the Office of Admission, and the Office of the Registrar. Students may also view this brochure via the World Wide Web at www.state.co.us/cche_dir/hecche.html.

Initial Classification

Initially, the Office of Admission classifies all new students as in-state or out-of state residents for tuition purposes based on information provided on an admission application. Applicants who feel their classification is incorrect, or continuing students who have become eligible for a change to in-state status, must submit a Petition for In-State Tuition Classification with supporting documentation in order to have their status changed. Petitions are available in the Office of Enrollment Management, Office of Admission, or Office of the Registrar, and on Mesa State College's web page at www.mesastate.edu. Petitions and supporting documentation must be submitted to the **Office of Enrollment Management, Lowell Heiny Hall Room 107, Mesa State College, 1100 North Avenue, Grand Junction, CO 81501-3122.** Questions may be directed to the Office of Enrollment Management at (970) 248-1458, or (800) 982-6372, extension 1458, or via e-mail at bstone@mesastate.edu.

Petition Deadlines

SEMESTER	QUALIFYING CUT-OFF DATE*	PETITION DEADLINE**
Summer Session	1st day of class	1st day of class
Fall Semester	1st day of class	1st day of class
Spring Semester	1st day of class	1st day of class

* Qualifying Cut-off Date: The date by which the 12-month physical presence period must have expired in order to **possibly** be classified in-state for the specified term. The 12-month period begins after a student has exhibited establishment of legal domicile, not merely when a student arrives in Colorado.

** Petition Deadline: Fully completed petitions must be received in the **Office of Enrollment Management** by this date in order to be considered for the semester in question. Petitions received after this date will not be considered until the next semester. It is preferable to submit petitions 30 days prior to the term for which a student wishes to be classified in-state so that classification will be determined prior to registration and payment of fees.

Criteria

According to Colorado Statute, individuals at least 22 years of age are eligible to establish domicile in Colorado. Physical presence **and** intent must be established for 12 months prior to the first day of class for the qualifying term. Thus, an individual will meet the requirements of the law no sooner that his/her 23rd birthday. The domicile of a student's parents determines residency for any student **prior** to the age of 23 (22 years of age if the student first matriculated at a Colorado college or university prior to September 1, 1996), unless the student can establish that he/she is emancipated.

- Emancipation may be established if a student is married, financially independent, or is a single parent. If a student can prove emancipation, then the student must complete the Petition for In-State Tuition Classification and attach their supporting documentation when requested.
- If a student has not yet reached the age of 23 and is not emancipated (or has turned 23 within the past 12 months and was not previously emancipated), the parent or court appointed legal guardian of the student must complete the Petition for In-State Residency Classification and attach their supporting documentation when requested.
- If a student has a court appointed legal guardian, the guardian must attach: 1) a copy of the court decree or letters of guardianship, whichever is appropriate; 2) a statement from the court that the parents, if living, do not provide sup-

port to the minor child; and 3) a statement from the court that appointed guardianship which certifies that the primary purpose of such appointment is not to qualify the student as a resident for tuition purposes.

- Should circumstances change that would affect the tuition status requested by a Petition for In-State Residency Classification, a student must notify the Office of Enrollment Management in writing within 15 days after such a change.

Residency Appeals

If you do not agree with the decision of tuition classification as provided to you after review of a petition, you may appeal the decision. Appeals must be made in writing and directed to the Office of Enrollment Management no later than 15 days from the date the denial decision letter was mailed to the student. The decision of the Residency Appeals Committee is the final College determination

Tuition and Fees

Tuition and fees for the 2002-2003 academic year had not been determined when this catalog was printed. Students are invited to write for the most current rates, available in June each year. **The following schedule reflects rates for 2001-2002.**

Tuition and Fee Schedule

Full-Time Students, Regular Undergraduate	Semester	Year
12 credit hours is considered full-time for Financial Aid purposes		
Colorado Residents (enrolled in 10 or more hours)		
Tuition	$ 843.80	$1,687.60
Student Services Fees	$ 300.00	600.00
TOTAL	$1,143.80	$2,287.60
Non-Colorado Residents (enrolled in 10 or more hours)		
Tuition	$ 3257.50	$ 6515.00
Student Services Fees	300.00	600.00
TOTAL	$ 3557.50	$ 7115.00

Part-Time Students, Regular Undergraduate	
Colorado Residents (enrolled in 9 or fewer hours)	
Tuition per credit hour	$ 84.38
*Student Services Fees	32.76
TOTAL PER CREDIT HOUR	$ 117.14
Non-Colorado Residents (enrolled in 9 or fewer hours)	
Tuition per credit hour	$ 325.75
*Student Services Fees	32.76
TOTAL PER CREDIT HOUR	$ 358.51

Graduate Level Students	
Colorado Residents	
Tuition per credit hour	$ 105.00
*Student Services Fees	32.76
TOTAL PER CREDIT HOUR.	$ 137.76
Non-Colorado Residents	
Tuition per credit hour	$ 328.20
*Student Services Fees	32.76
TOTAL PER CREDIT HOUR	$ 390.96

*Student services fees are $32.76 per credit hour and include a 50-cent per semester per student charge. Refer to the Mesa State College Student Handbook for a complete breakdown of the student fees.

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

Summer Term

Students confirm their class schedules upon registration. Tuition and fees are due in full on the first day of the term. Tuition charges for 2001 equaled those for the regular fall or spring semesters; however, student services fees equaled $32.76 per semester hour regardless of the number of hours taken. Please note that summer term follows a separate policy regarding refunds. Summer term pre-registration is held at the same time as pre-registration for fall term.

Payment of Tuition and Fees

Upon registration students incur a financial obligation to Mesa State College. Anyone who registers for one or more classes is expected to pay the full amount of tuition and fees, unless they officially withdraw by the specified deadlines listed in the Course Schedule. All charges are due and payable on the first day of class. A 1% service charge will be assessed each month on all outstanding balances. No student will be allowed to register for classes, graduate or receive transcripts until their account is paid in full.

Students are liable for collection costs, including attorney fees and other charges necessary for the collection of any overdue financial obligation incurred by the student.

Student financial information is available on the Mesa State College web site. If you have any questions, please call the Business Office at (970) 248-1567.

Refunds of Tuition and Fees

If a student registers and officially withdraws via the web at www.mesastate.edu or at the Office of the Registrar before the first day of the semester, all tuition and fees will be refunded.

If a student officially withdraws after classes begin, an additional administration fee will be deducted from the refund. The fee will not exceed 5% of institutional charges.

Beginning with the first day of classes, if a student officially withdraws from all classes, the College will refund the student's payment of tuition and fees as follows based on the date the student completes the official withdrawal form at the Office of the Registrar.

If a student received financial aid and is within the first 60% of the semester, then a portion of the financial aid must be returned. All financial aid recipients withdrawing from school must see the Office of Financial Aid to have this portion calculated.

Institutional /Federal Policy

100% – the first day of the semester
90% – the first week of the semester
50% – the 2nd week through the 4th week of the semester
25% – the 5th week through the 8th week of the semester

Non-credit courses and other self-supporting (cash-funded) courses are not covered by this policy.

Institutional/Federal Refund Schedule for Summer Term

May, June & July Sessions
100% – first day
90% –2nd & 3rd days
50% – 4th-6th days
25% – 7th-10th days

8 week sessions
100% - 1st day
90% - 1st week
50% - 2nd week
25% - 3rd-4th weeks

NOTE: All first-time students at Mesa State who receive financial aid funds and totally withdraw from Mesa State should note the pro-rata refund policy on the total withdrawal form.

If a student has unpaid charges and a cash refund is due the student, the refund will be applied to the student's unpaid charges, and either a check will be issued for any credit balance or the student will be billed for any remaining charges.

Student Housing and Meal Plans

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. However, **space is limited and priority is based on the date the complete housing application and deposit are received in the Housing Office.** A student may qualify for exemption from the on-campus requirement for definite reasons expressed in writing and approved by the Department of Housing and Residence Life 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 12 hours per semester); or
4. Residing at the permanent address of his/her parents or step-parents; or
5. Of junior class standing as of the beginning of the semester; or
6. Not of junior standing, but has resided in the Mesa State College residence halls for four semesters; or
7. Medically excused (with written documentation from a medical doctor); or
8. Placed on a waiting list due to limited space on campus.

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.

Each residence hall and apartment complex is staffed with a resident director, assistant director, and resident assistants who are trained to help students. These staff members aid residents in adjusting to college life, explaining policies, answering questions, and anything else associated with college life.

The Housing and Residence Life Office is available to help students make arrangements for residency and meal plans, answer questions, receive suggestions, and assist students with any housing-related concerns or interests.

The Facilities

There are three types of on-campus housing available: (1) three traditional residence halls which require a meal plan (most rooms are designed for double occupancy, although there are a **limited** number of single rooms); (2) suite style residence hall which also requires a meal plan, and; (3) apartments, available for sophomores, juniors, and seniors.

Student Housing and Dining Contract

Students who wish to apply for accommodations on campus are required to submit a $150 deposit with their signed contracts and completed application cards. On-campus housing is not guaranteed, as availability is limited to 918 students. The deposit includes a $25 non-refundable application fee. Housing assignments will be made by mid-June.

The Student Housing and Dining Contract is a legal agreement between the student and Mesa State College regarding residency and meal plans on campus. Both parties assume the rights and responsibilities outlined in the Student Housing and Dining Contract and all supporting documents upon acceptance of the contract by Mesa State College.

Questions concerning housing on campus should be directed to Housing and Residence Life located in the Student Life Center at 1152 Elm, across from the W.W. Campbell College Center, at (970) 248-1536, or e-mail housing@mesastate.edu.

Off-Campus Housing

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

Campus Dining

Campus Dining Services offers food service to students at Mesa State College which includes a choice of two meal plans: Plan A, unlimited meals between 6:45 a.m. and 7:00 p.m., or Plan B, unlimited meals between 10:30 a.m. and 7:00 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 10:30 a.m. to 1:30 p.m. and 4:45 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 Mav money. Meals are served seven days a week during the academic year. Commuter students are welcome to purchase any of the resident student meal plans, or try one of our commuter plans.

Call (970) 248-1742 for more information on dining services at Mesa State College.

Payment of Housing and Meal Plans

The Student Housing and Dining Contract is in effect for the entire academic year; however, these services are billed and payable by semester. **The following schedule reflects the housing and meal plan rates for 2001-2002.**

	Each Semester	Total Year
Residence Halls:		
Pinon, Rait and Tolman Halls:		
Double room (per student)	$1,438.40*	$2,876.80
Single room (per student)	$1,896.60*	$3,793.20
Monument Hall:		
Double room (per student)	$1,508.00*	$3,016.00
Apartments:		
Walnut Ridge		
Double room (per student)	$1,624.00*	$3,248.00
Single room (per student)	$2,111.20*	$4,222.40

Meal Plans:

(Available to all students; mandatory for those living in a residence hall)
Each meal plan includes $75.00 in Maverick Money.

	Per Semester	Total
Plan A - unlimited, 6:45 a.m.-7:00 p.m.	$1,443.00	$2,886.00
Plan B - unlimited, 10:30 a.m.-7:00 p.m.	$1,350.20	$2,700.40

* A $15 charge per semester will be added to all residents' accounts for housing activity fee. This activity fee is **NON-REFUNDABLE.**

Room and Meal Plan Refunds

The schedule for room and meal plan refunds is outlined in the Student Housing and Dining Contract.

Other Fees and Expenses

Books and Supplies

Required textbooks 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 clothing, magazines, software and gift items.

The approximate cost of textbooks for a single semester is $350-$400 but varies with the program of study. Supply costs vary depending upon student preference and course requirements.

Textbooks may be returned within 14 calendar days of purchase, provided the cash register receipt is shown as proof of purchase and the books have not been defaced. Specific dates for returns are posted in the bookstore.

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.

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 regular per credit hour tuition plus $75.00 for one thirty minute lesson each week. Other special instructional services and courses that require students to pay extra fees include labs, courses with transporta-

tion fees for field trips, human performance and wellness courses with locker and towel facilities and classes such as bowling, skiing and golf.

Application and Evaluation Fees

Undergraduate Application and Evaluation Fee (non-refundable).	$ 30.00
Graduate Application and Evaluation Fee (non-refundable)	$ 50.00

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

Students processing schedule changes after classes begin will be charged a $5.00 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 reservation deposit	$125.00
Parking permit, non-reserved (per year)	$ 50.00
Student health insurance per semester (subject to change)	$275.00
MavCard Student I.D. fee	$ 15.00

Personal Computer Recommendation

Mesa State College recognizes the importance of computers as educational tools to be used in the pursuit of higher education. Students are strongly encouraged, to the extent possible, to have a personal computer for their use while attending Mesa State College.

Students who will be purchasing a personal computer should consider the following specifications. By doing so, students will be able to complete most course work in the privacy of their own room/home.

Suggested specifications: (These specifications and costs could be different for 2003 and beyond. Please direct questions regarding the computer specifications to the Information Technology Office prior to purchasing a computer.)

Computer that runs Windows 95, Windows 98, Windows ME, Windows 2000, or Windows XP; with modem and CD-ROM drive; or good letter quality printer. Approximate cost for system: $1000-1400. (Does not include printer.)

Software: students may be required to purchase specific software for specific courses. In some cases, students will purchase software along with the textbook used for the class at a nominal cost. Students should not purchase software until advised by individual faculty.

Students majoring in Mass Communication (Broadcast Production, Media News, Print Media, Public Relations) or Graphic Arts mainly use Apple Macintosh. Majors are encouraged to consult with the appropriate department before purchasing a computer.

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 self help, 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.

Tuition Payment Plan

Mesa State College provides a payment program designed to meet the specific needs of students and parents. Annual tuition, fees and institutional room and board can be paid in ten monthly installments, beginning July 1 and ending April 1. There is an annual non-refundable application fee, due at the time of enrollment. Contact the Office of Financial Aid for more information.

Colorado Student-Aid Programs

Available to full-time, half-time and part-time students with priority given to full-time students.

1. *Colorado Grants* - Grants 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 Work-Study* – The Work-Study program is designed to provide employment on campus for students with documented need and who meet the residency requirement for tuition purposes.
3. *Colorado Leveraging Education Assistance Program (CLEAP)* – This is a program wherein a portion of the grant to a student is provided by the state of Colorado and the other portion by the federal government. Awards are made only to Colorado resident students with extreme need.
4. *Diversity Grant* – Available to resident, full-time undergraduate students with financial need who are members of an underrepresented population at Mesa State College.
5. *Colorado Graduate Grants (CGG)* – Grants are awarded to Colorado resident students enrolled in a graduate program based on financial need.
6. *Governor's Opportunity Scholarship Program* – Scholarships offered to Colorado resident students who otherwise could not pursue a college degree due to financial reasons.

Mesa State College Foundation Programs

The Mesa State College Foundation is a non-profit organization governed by a Board of Directors. The board is comprised of talented and successful business and community leaders who recognize the College's pivotal role in the future of our state and wish to aid deserving students at Mesa State College. This group, which functions independently of the College, raises funds for scholarships, student loans, and a variety of programs that enhance opportunities provided by the College. In addition, the Foundation serves as a receiving and distribution agency for many established scholarships available to the students at Mesa State.

1. *Private Scholarships* – In addition to institutional scholarships, many scholarships and awards have been established for students of the College by individuals and organizations who recognize the importance of Mesa State to the community and have a connection to the College. The amounts of the awards vary, but all are designed to apply toward tuition and fees. **Contact the Foundation at (970) 248-1295 for additional information.**
2. *Student Loans* – Students may borrow emergency short-term loan funds provided by the Mesa State College Foundation to help meet obligations due to unforeseen situations. 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.**

Scholarships

Scholarships represent an effort by the state of Colorado and Mesa State College to recognize resident and non-resident students for outstanding achievement in academic and talent areas. The awards will vary. Need is not a factor in determining recipients. However, students who receive scholarships are also encouraged to submit a financial aid application. For more detailed information on scholarships, please call (970) 248-1376.

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 3.00. 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 Director of Housing and Residence Life.

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. After the first semester, eligibility is determined by MSC cumulative grade point average.

Western Undergraduate Exchange (WUE)

Western Undergraduate Exchange is a program which allows students from throughout the Western United States to enroll at a reduced tuition rate. Participating states include Alaska, Arizona, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming. Conditions for enrollment under WUE:

- Students must meet regular requirements for admission (provisionally admitted students are ineligible).
- New freshmen or transfer degree-seeking students only (certificate, associate, baccalaureate).
- Must be a resident of one of the participating states.
- Must register as full-time students (12+ credit hours each semester). Some other scholarships may require a minimum of 15 hours.

Programs are open to WUE students on a space-available basis. Time accrued while receiving the WUE grant will **not** contribute toward the length of time required for establishing Colorado residency status. Contact the Office of Admission at (800) 982-6372, ext. 1875.

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 by completing a Free Application for Federal Student Aid (FAFSA) and submitting it to an approved analysis agency. The information is electronically provided to the college. 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, and (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, or on the web http://www.fafsa.ed.gov/.

Stafford Student Loans are obtained in the same manner as other college based aid and require a separate application that is mailed to the student after the Award Notification is returned to the school by the student.

Students must maintain Satisfactory Academic Progress as noted on the Award Notification to remain eligible for 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.

Academic Services Department

(Main office located at Houston Hall 110, 248-1304)

The Academic Services Department (ASD) houses a variety of programs that are designed to assist students in their academic endeavors. The ASD programs and services are located in various offices and buildings around campus. The addresses and telephone numbers for these offices can be found in the following descriptions of the services:

College Success Courses

College Preparatory Reading (SUPP 090) – This course is designed to assist the student in his or her quest to get the most out of college-level reading.

Introduction to Higher Education (SUPP 101) – This class introduces students to the resources of Mesa State College and helps them understand the academic skills essential to succeed in college. For more information about either of these college success courses, stop by the Academic Services office at Houston Hall 110 or call 248-1913.

Educational Access Services (1020 Elm Street, 248-1801 or 248-1826)

Support services for students with documented physical or learning disabilities are available through Educational Access Services, a division of Academic Services. Several services are available, depending upon the documented disability. Services can include volunteer note takers, monitored testing, and taped textbooks (eight weeks notice required). Prospective students are encouraged to contact the office of the Coordinator of Educational Access Services to discuss special needs.

Peer Tutoring Program (Houston Hall 110, 248-1392)

The Peer Tutoring program provides tutoring in a group setting for students who need extra help in a course that is difficult for them. Qualified tutors, recommended by faculty, are trained to work with groups of students in a particular course or general subject area. Tutors sometimes operate open study sessions (i.e., math, chemistry) where students can attend as often as they wish. These sessions are available at various times and locations throughout the semester.

Math Lab is an open study area operated by special peer tutors who have backgrounds in various levels of mathematics. This is a walk-in location that is open to all MSC students; appointments are not necessary. The Math Lab is generally open all day and during select hours in the evening, during each semester. The Math Lab is located at 1325 College Place. For information, call 248-1392.

Testing and Assessment (Lowell Heiny Hall 219, 248-1215)

The Testing and Assessment Center services, but are not limited to, examinations required for admission to graduate and professional schools, examinations for proficiency and certification in nursing and teaching, and the credit by examination program. Assessment of academic skills in college level English, mathematics, and writing are provided through the Testing and Assessment Center for potential students, as well as those who have already been admitted.

Academic Improvement Series (AIMS)

The Academic Improvement Series is offered at the start of each semester. These free one-hour study skills workshops and seminars help students with goal setting, time management, note taking, and other skills necessary for academic success.

Academic Advising and Career Planning (Lowell Heiny Hall 126, 248-1177)

The Office of Academic Advising and Career Planning assists new and undeclared students with planning and course registration. This office is open for assistance by appointment from 8:00 a.m. – 5:00 p.m., Monday through Friday in Lowell Heiny Hall. Students that have started classes or are transferring in with more than 45 semester credit hours will need to contact a faculty advisor for their academic advising needs. See the *Faculty Advisors* section for more information. For those students majoring in Nursing or Radiologic Science, please contact that department for advising, 248-1398.

The Office of Academic Advising and Career Planning offers career information resources, workshops, and testing to help identify interests and their relation to the world of work. This may help identify the correct major selection early in the

college experience or assist an undecided student in choosing a major. For further information regarding Academic Advising and Career Planning, stop by Lowell Heiny Hall or call them at 248-1177.

Orientation

New students to Mesa State may participate in one of the college orientation programs offered at the beginning of fall and spring semester. The program is designed to 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 Student Activities Office.

Faculty Advisors

Faculty Advisors provide academic advising to students that have started classes or are transferring in with more than 45 semester hours. Each major is associated with one of the following schools: School of Applied Technology, School of Humanities and Social Sciences, School of Natural Sciences and Math, or the School of Business and Professional Studies. The secretary for each school is available to aid students in filling out the proper paperwork. (Refer to the *Programs* section of this catalog to identify major and school.)

- Students who know their major may obtain a faculty advisor in the associated school.
- Students who have limited their major choices to a specific area may request a faculty advisor with the associated school.
- Students who need assistance with advising or choosing a major may use the Office of Academic Advising and Career Planning.

Faculty advisors provide the student with a program sheet which details the requirements of the degree or certificate program that student is working toward. The student should work closely with the faculty advisor throughout enrollment at Mesa State, updating the program sheet each semester. Working with a faculty advisor will assist in the process of degree completion, but the student is solely responsible for meeting degree requirements.

Non-Traditional Students

Potential Mesa State College students who do not fit the traditional college student mode – those who have been away from school three or more years, or are older than the "typical" college student, or are employed full or part time, or are married, or a single parent, or who have other non-typical life circumstances – may wish to investigate the non-traditional student program known as the Mesa@Night Evening and Weekend Program.

Mesa@Night provides non-traditional students 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 Mesa@Night staff at (970) 248-1916.

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.

The library collection contains over 300,000 items which includes books, periodicals, nonprint materials, maps, newspapers, audio and video cassettes, slides, records, CD ROM discs, films, software and other items. More than 50 on-line databases are available through the Library's web pages. The library is a selected depository for federal government documents and also contains special collections in the areas of western Colorado history and other subjects.

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

Access to the collection is through the 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. Library and informational resources are available via the web at www.mesastate.edu/library.

Writing Center

Students can improve their writing skills through one-on-one assistance from the staff of the Writing Center. For further information, contact the Writing Center at 248-1831 or Dr. William Wright at 248-1101.

Little Mavericks Learning Center/Toddler Tech

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 ages 12 months and walking to five years. For further information, contact the Center Director at (970) 248-1318.

Student Activities

Many student clubs and organizations exist at Mesa State College. Students clubs include professional and academic clubs as well as social clubs. Currently Mesa State College has over 50 active clubs on campus including club sports, religious clubs, and support groups, which allow students to meet other students who share similar interests. A list of current active clubs and organizations can be viewed on the Mesa State College web site or picked up at the College Center Information Desk.

There are also a number of student fee funded organizations that are administered by Mesa State students including the following:

Associated Student Government (ASG): ASG is the representative body and official voice of the students. The ASG operates through the General Assembly, a legislative body composed of students elected by the student body. Students involved in ASG have an opportunity to gain leadership skills by representing student opinions to the Mesa State administration and Office of State College's Board of Trustees, and they are responsible for reviewing and administering student fee requests.

Mesa State Activities Council (MSAC): MSAC is responsible for organizing entertainment activities including concerts, films, speakers, and dances. Events have included musicians, comedians, hypnotists, and speakers.

Fine Arts Organizations: All Mesa State College students are encouraged to audition to join a musical group, participate in theatre or be 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, 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 whitewater 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 Diversity Board (CDB): This student organization offers leadership experiences for students and organizes programs to educate students regarding multicultural concerns and issues. Member groups include the Black Student Alliances (BSA), the Native American Council, the International Student Union, M.E.Ch.A., Ho'Olokahi, and PRIDE.

Campus Recreation Services

Campus Recreation Services is established to provide varied programs and services that will contribute to the health and well being of the students of Mesa State College. It is our mission to educate participants in the responsible use of leisure time by providing an atmosphere that fosters the development of lifelong patterns of recreational activities and opportunities for participation in such activities regardless of age, sex, race, or motor ability. To do so, we develop and maintain facilities and resources designed to provide appropriate environments for our participants. This mission is realized by:

- Offering structured competitive and social opportunities in a variety of individual and team sports (Intramural Sports Program and Club Sports). Intramural sports include flag football, softball, volleyball, basketball, indoor and outdoor soccer, ultimate Frisbee, disc golf, badminton, tennis, racquetball, and swimming. Club sports include cycling, rodeo, rugby, and track.
- Providing access to recreation facilities, equipment, and activities for convenient, informal participation (Open Recreation Program). These facilities include a multi-sport gymnasium, cardio machines, weight training circuit machines, a free weight room, indoor track, racquetball courts, climbing wall, and swimming pool.
- Offering structured and non-structured opportunities for improving and maintaining physical fitness (Fitness/Wellness Program). These opportunities include aerobics classes, a fitness club, fitness assessments, and exercise program prescription.
- Offering students significant opportunities for career development, including the acquisition of leadership, management, and technical skills in all areas of Campus Recreation Services (Student Employment Program).

It is our hope that you will take advantage of the many recreational opportunities that are available to you. Any suggestions as to how we can better serve the students of Mesa State College are encouraged and welcome.

The College Center

Located in the main artery of the campus, the W. W. Campbell College Center serves as a meeting place for students, faculty, and staff members.

The College Center houses the bookstore, art gallery, outdoor program, student government offices, MSC MAVCard office, Dean of Students Job Placement Office, radio station, school paper, game room, snack bar, information desk, dining hall, student lounges, Cultural Diversity Center, and meeting rooms. The game room includes pool tables, electronic darts, foosball, and 2 general student computers to be used to check e-mail or access the internet between classes. Liff Auditorium is the center of many of the entertainment programs organized 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.

The Dean of Student Services is located in the College Center, Room 101. This office serves as a consultant and advocate for students on campus policy and procedures as well as providing referrals for personal counseling, health services, and assistance in job placement as outlined below. For further information contact (970) 248-1366.

Counseling Services

* Counseling services are contracted by PsycHealth Associates, P.C. located at 2004 N. 12th Street, Suite 47, telephone number (970) 241-6500.
* All students paying student fees are eligible for six free counseling sessions per academic year.
* Referrals are made through the office of the Dean of Students, the Housing and Resident Life office and/or students may contact PsycHealth directly for an appointment.
* All sessions are confidential and students dealing with personal problems affecting their academic life are encouraged to talk with a professional counselor.

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.

Job Placement Services

* Off-campus part time and full time jobs are listed and updated daily and are available for Mesa State College students and Alumni.
* National internship listings are available as are state and federal employment guidelines. Other employment reference materials are also available.
* Credential files may be established at a reasonable cost. Teacher job bulletins are available beginning in the early spring with paid subscriptions. The annual teacher fair co-hosted with Adams State College and Western State College is open to students.
* Resume critique and job interview skill consultation is available by appointment or in a seminar format.
* A resume bank for prospective employers is kept for one year and Netscape Internet access to employment prospects is available at low cost. Other useful computerized job information is also available.
* An annual SHOWCASE career fair featuring over 50 employers is conducted each spring. Appointments for on-campus recruitment with selected companies are scheduled throughout the year.

Student Health Center

Good health, both physical and emotional, is an important factor in successful college work. It is the goal of the Mesa State College Student Health Center to provide competent, accessible medical care. Similar to the family physician, the Student Health Center provides a source of basic medical assistance for the student who is away from home.

Outpatient health services are provided for registered fee-paying students who have a valid student I.D. card regardless of the number of credit hours carried or insurance status. Students are required to pay a $5.00 co-pay for all services received at the Student Health Center. The primary services provided are: first aid, dispensing of simple medications, assessment and referral to specialty physicians and dentists, providing counsel for personal health problems, simple physicals, and limited lab tests for a nominal fee.

Services include a full-time registered nurse, with a part-time physician and practitioner providing a complement of health care, Monday-Friday. The physician/practitioner provides students with an initial health assessment and evaluation, treats minor illnesses, and refers students for hospitalization or specialized treatment as needed. A registered nurse is available to answer questions and provide medical information. The Student Health Center is a contracted service with an off-campus provider. The Center is located within easy walking distance at 1060 Orchard Avenue, Suite O. The telephone number is (970) 256-6345.

For emergency illnesses or accidents which occur after the Center's hours, or on weekends, students should report to the Emergency Care Center at Community Hospital. Immediate emergency help should be obtained by dialing 911.

MAVCard Student I. D.

The Mesa State MAVCard is your key to campus services at Mesa State College. The MAVcard can be used at Tomlinson Library, the student recreation center, the dining hall, Bookcliff Café, campus student photocopy machines, vending machines, and for access to residence halls and athletic events. The MAVcard can also be linked to a free Wells Fargo® checking account, with a customer service branch right on campus.

Campus Parking

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

GENERAL ACADEMIC REGULATIONS

UNDERGRADUATE

System of Grades

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

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* section) 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. 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	.....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. **"W" hours do not count as hours attempted or in the GPA.** (See section on *Withdrawal Procedures*)

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* section.)

A student must achieve a cumulative grade point average of 2.00 or higher to graduate at the certificate, associate, or baccalaureate level. Some programs have additional GPA requirements to remain in and graduate from that program. See *Programs of Study* section and subject program sheet for specifics.

Grade Improvement

Any course which is taken more than once for academic credit at Mesa State College is done so only for "grade improvement" wherein 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 DANP (performing dance), 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 the *Independent Study* section in this catalog); and in some cases Topics, Practicums, Seminars, Internships, Structured Research, and Cooperative Education. See program sheets and the appropriate academic dean or director 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 Office of the Registrar after repeating the class. The last grade earned will be the grade used, whether better or worse than the earlier grade(s).

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") grades are temporary grades given to a student **only in an emergency case** and at the discretion of the instructor. In Progress ("IP") grades are temporary grades given to a student in the case of a course which, because of its nature, cannot be completed by the end of the semester of enrollment (some internships and cooperative education classes are examples).

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 Office of the Registrar. 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 grade that is submitted by the instructor to the Office of the Registrar replaces the "IP". 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 for a particular 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 ("F") in any course is not eligible for the Dean's List.

HONORS PROGRAM

Purpose

The Honors curriculum provides motivated students with especially stimulating courses that demand advanced work beyond that normally required in college level courses. The Honors program is designed to serve those students who want to be challenged to reach their full potential, those who desire close interaction with like-minded students and with faculty, those who seek to make the most of their college careers by finding the greatest opportunities for self-discovery and academic growth. The Honors program at Mesa State College is affiliated with the national Collegiate Honors Council.

Requirements for Admission

1) Enrollment in the Honors Program requires an application separate from the application to Mesa State College. The exact application package depends on whether the applicant is an incoming freshman, a new transfer student, or a current student at the College. Inquiries regarding applications should be made to the Honors Program Director.

2) Honors students are typically in the top 10% of their high school or college classes and have GPA's of 3.00 or higher. The Honors Program Council will consider exceptions to this rule on a case-by-case basis. Once enrolled in the program, honors students must maintain a GPA of 3.00 or higher in order to be retained in the program.

Honors Curriculum

This includes two categories; students may focus on one category or pursue both.

1) *Honors Courses*

Honors courses are smaller in enrollment than most courses, in order that students in these classes can function as a community of scholars actively working together to explore and master the course material.

Fulfillment of general education requirements via Honors courses is made possible by offering honors sections of selected courses, varying the offerings from semester to semester.

Upper-division Honors courses are interdisciplinary, focused around themes, historical periods, important controversies, etc., which can be illuminated from various disciplinary perspectives.

2) *Honors Theses*
Honors students have the option of producing an Honors Thesis on some topic within their major. Under the guidance of an advisor the student pursues some line of research/inquiry culminating in a written work that will be bound and included in the Mesa State College Tomlinson Library Special Collections. Such projects are especially useful for students hoping to do graduate work; while less demanding than a Master's thesis, these projects acquaint students with the process of developing any such scholarly work.

Benefits and Recognitions

1) The "Honors" course designation on a student's transcript signifies that the course is among the college's more demanding courses. Such courses also provide especially rewarding class experience.
2) Students who accumulate an average of B or higher in 18 hours of Honors credits, six of which are upper-division, are cited at graduation and on their transcripts for achieving Academic Honors. Students who produce an Honors Thesis are cited at graduation and on their transcript for this accomplishment.
3) The Honors Program's small classes and occasional extracurricular activities allow students especially easy access to advice and mentoring from faculty members and friendships with other students. Also, students enrolled in the program receive priority registration for classes in order to facilitate fitting Honors courses in to their schedules .

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

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 for 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 Statistics 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 students with either a major or minor in psychology. Minimum qualifications for membership are as follows: rank in the top 35% of one's class with a minimum 3.00 overall GPA; 3.25 Psychology GPA; completion of 9 semester hours in psychology; and completion of at least three semesters of college coursework. 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 be 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, the student's cumulative grade point average will be used in the determination of inclusion in the Honors/Distinction categories listed below. 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.

Exceptions for students not explicitly meeting the criteria for a particular category may be recommended to the Vice President for Academic Affairs by the academic dean or director of the school of those students who are receiving a degree in that school. The grade point average for honors/distinction at commencement does not include final-term, in-progress courses. The ultimate honors/distinction recognition to appear on the permanent record/transcript will reflect the appropriate category based on the inclusion of the final-term course grades required for the completion of degree requirements.

Registration Procedure

Once admitted to Mesa State College, a student will meet with an academic advisor (see *Academic Advising* section). Not all courses available in this catalog are offered every semester or every year. Course schedule offerings for each semester (including Maverick On-Line registration instructions) are available through the Mesa State College web page at www.mesastate.edu and in the Office of the Registrar.

Once a student declares a major, he or she must obtain, from his or her faculty advisor, 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 advisor 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.

Confirmation of Attendance

By the act of registration, students automatically confirm their attendance and incur a financial obligation to the College. A registered student is responsible for paying his/her tuition and fees, regardless of whether or not they attend classes, unless the student officially withdraws from the College through the Office of the Registrar or drops all of his/her courses via the web prior to the deadlines published in the semester course schedule.

Schedule Adjustment – 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, for the entire semester.

It is recommended that students limit their academic load to 21 semester hours or less. Students should consult with their advisors before attempting an overload of more than 21 semester hours in a regular semester or more than 9 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.

Learning Progress Evaluation

The evaluation of a student's 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. An instructor may initiate a drop or withdrawal for a student who fails to attend classes regularly. ("Drops" are up to 15% of class elapsed; "withdrawals" are up to the mid-point of the class.)

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 instructors for making up 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 Dean of Students 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.

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 Dean of Students, located in the W.W. Campbell College Center, Room 101.

Withdrawal Procedures

Withdrawal from Individual Classes

Students may withdraw from individual classes (full semester duration, modular, and summer) via the web at www.mesastate.edu prior to the start of the Session (semester or modular). Once the session has begun, a withdrawal is permitted **up to the mid-point of those classes.** See *Refund Policy* in the Tuition and Fee section of this catalog. After the session has begun, proper forms and signatures are required and must be submitted to the Office of the Registrar by the deadlines published in the semester Course Schedule. Forms are available in the Office of the Registrar. Students who officially

withdraw from a class in which they are passing by the established deadline receive a "W" grade (withdrawn). Students who withdraw after the deadline will automatically receive a grade of "F".

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.

Total Withdrawal from the College

Students who desire to withdraw totally from Mesa State College are advised to notify their faculty advisor or the Office of Academic Advising and Career Planning.

Prior to the first day of the semester, students may totally withdraw from Mesa State via the web at www.mesastate.edu. If a student desires to totally withdraw after the semester has begun, he/she must report to the Office o the Registrar. See *Refund Policy* in the Tuition and Fee section of this catalog. **The necessary withdrawal papers must be filled out by the student and officially signed by the appropriate staff.** Such withdrawals may be made up to the mid-point of the term in which the student is enrolled. 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 F). Students totally withdrawing after the deadline will receive grades of "F".

Exceptions to the withdrawal deadline are possible and are considered only by written appeal in the case of true, documented emergencies. The Admission and Records Appeals Committee will review completed, documented requests. Appeal forms are available in the Office of the Registrar.

Academic Probation and Suspension

"Good Standing" signifies that the student is making satisfactory academic progress (see *Academic Standards* section) 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 at Mesa State 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 semester, 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 as long as the degree still exists. 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 from and readmitted to Mesa State College a maximum of two times. Academic suspension, when imposed, becomes effective immediately upon the recording of grades at the end of the semester or summer term.

The first suspension shall be for a period of one semester; i.e., a student suspended at the end of fall semester may not attend the following spring semester; a student suspended at the end of spring semester may not attend the following fall semester. A student suspended at the end of summer term may not attend the following fall semester.

The second suspension shall be for a period of two semesters; i.e., a student suspended at the end of fall semester may not attend the next spring or fall semester; a student suspended at the end of spring semester may not attend the following fall or spring semester. A student suspended at the end of summer term may not attend the following fall or spring semester.

Students may not enroll in any credit classes whatsoever **(including summer term)** during the period of suspension.

GRADUATION REQUIREMENTS
UNDERGRADUATE

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 academic 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 advisors. The College assumes no responsibility for difficulties arising when a student fails to establish and maintain contact with his or her faculty advisor 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 Degrees

Some requirements may vary with the program and academic 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 to Graduate

A petition to graduate, along with a completed program sheet, must be approved by the student's advisor and by the Department Chair (or, in some instances, the School Dean). At the start of the semester prior to the semester of graduation, students must check with their departments as to the schedule they must follow regarding when the petition and program sheet must be submitted for approval. **Once the petition is approved, it must then be filed with the Office of the Registrar by the last class day of the semester prior to the semester of graduation.** It is the student's responsibility to become familiar with the petition procedure established for his/her particular program, and to adhere to the designated schedule.

Deficiencies

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

Final Credit Requirements Taken At 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 but 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 academic dean or director and the Office of the Registrar at Mesa State College during the time of the student's last enrollment at Mesa State College, and the student must receive a grade of "C" or higher in each course.

Human Performance and Wellness

Classes with the "HPWE" prefix plus DANC 160, 169, 174 and 177 are Human Performance and Wellness activity classes. Each course is scheduled for an eight-week module and includes lectures on the history, 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 and 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 and 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. A course may be taken for credit only once, except for "grade improvement".
3. No more than a total of eight HPWE/DANC 160, 169, 174, 177 classes of any kind may be taken for credit; any such 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/DANC 160, 169, 174, 177 classes a student may take for "no credit". Should a student take more than eight

HPWE/DANC 160, 169, 174, 177 classes for credit, at the time he or she petitions to graduate, all of the aforementioned courses taken after the eighth course will be excluded in calculation of the student's graduation GPA.

4. HPWE/DANC 160, 169, 174, 177 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/DANC 174, 177 Aerobic/Fitness Activity courses and the HPWE/DANC 160, 169 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:

1. Only one varsity sport activity course, numbered HPWE 180-189, may be used to meet the baccalaureate HPWE Aerobic/Fitness activity requirement.
2. A student may elect to register for a particular varsity sports class for credit as many as four times (once at each level).
3. 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/DANC 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 Downhill Skiing
HPWE 134 Snowboarding
HPWE 135 Telemark Skiing
HPWE 136 Body Shaping
HPWE 138 Step Aerobics
HPWE 139 In-Line Skating
HPWE 140 Snowshoeing
HPWE 141 Mountain Biking
HPWE 145 Wrestling
HPWE 147 Track and Field
HPWE 150 Adaptive Aquatics
HPWE 151 Adaptive Physical Activity
HPWE 153 Adaptive Aquatics II
HPWE 156 Soccer
HPWE 157 Adaptive Physical Activity II
HPWE 158 Speedball
HPWE 160 Field Hockey
HPWE 164 Beginning Basketball
HPWE 165 Intermediate Basketball
HPWE 166 Flag Football
HPWE 179 Dance Performance Group
HPWE 180 Varsity Football
HPWE 181 Varsity Basketball
HPWE 182 Varsity Baseball
HPWE 184 Varsity Tennis
HPWE 185 Varsity Volleyball
HPWE 186 Varsity Softball
HPWE 187 Varsity Soccer
HPWE 188 Varsity Golf
HPWE 189 Varsity Cross Country
DANC 174 Beginning Jazz Dance
DANC 177 Beginning Tap Dance

HPWE/DANC Lifetime Activity Courses

HPWE 103 Diving
HPWE 106 Scuba I
HPWE 107 Scuba II
HPWE 108 Canoeing
HPWE 109 Kayaking
HPWE 110 River Rafting
HPWE 111 Rock Climbing
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 159 Aikido
HPWE 161 Two-Person Outdoor Volleyball
HPWE 162 Volleyball
HPWE 163 Intermediate Volleyball
HPWE 167 T'ai Chi

HPWE 168 Hatha Yoga & Relaxation I
HPWE 169 Hatha Yoga & Relaxation II
HPWE 172 Square Dance
HPWE 173 Folk Dance
HPWE 174 Social Dance
DANC 160 Beginning Ballet
DANC 169 Beginning Modern Dance

Catalog under which Student Graduates

The requirements for graduation for each student are the requirements stated in the Mesa State catalog that 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" until graduation and (2) the degree, emphasis or certificate area is still accepting students into the program when the student officially declares his/her major.

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 summer sessions). If an interruption in enrollment occurs so that the student is no longer "continuously enrolled" as described above, the catalog requirements applicable at the time of re-enrollment shall apply.

The student retains the right to use the graduation requirements in any single catalog published during their period of enrollment. The student's major must be listed in that catalog, the major must still be available, and continuous enrollment must be maintained from the period of the designated catalog to the point of MSC degree completion.

If a candidate for a degree is unable to meet the 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 Registrar and the appropriate dean.

Declaring a Major

The major the student lists on the Mesa State College application is considered to be for admission purposes. Once admitted, a student may change his/her major. In order to be admitted/declared into the major, the major must be accepting students and the student must meet the requirements to be admitted to the degree. Some majors have additional admission requirements and for those the student must visit the department for more information. Students who are admitted as an undeclared major are strongly encouraged to declare a major prior to registering for their second semester.

A student can change/declare their official major by working with the department of his/her desired major. Each academic department is available to aid students in changing their major and assigning a faculty advisor. Refer to the Programs section of this catalog to identify the department.

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 120 semester credit hours is required in every baccalaureate degree program. The distribution of the 120 minimum credit hour requirement is:

General Education	minimum 33 credit hours
Degree Distinction	6 credit hours
Human Performance and Wellness	3 credit hours
Major Requirements	42-78 credit hours*
Unrestricted Electives	0-37 credit hours

*Some professional programs may exceed 60 hours.

Students need to work closely with their faculty advisors and obtain a program sheet from that faculty advisor or the academic dean or director **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 advisor 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 with a grade earned of "C" or higher. Some baccalaureate degree programs have additional GPA and other requirements. See a faculty advisor 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 classical or modern foreign language which may include:

FLAF 111, FLAF 112
FLAG 111, FLAG 112
FLAS 111, FLAS 112
FLAS 117, FLAS 118
FLAV 290 (Ancient Greek or Latin)
(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 chair of the department of Language, Literature, and Communications may approve courses in other classical or 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 with two or more years of high school coursework in a foreign language may (1) see the department chair for placement in a higher level class; (2) receive credit by successful completion of a CLEP test in that language; or (3) pursue another language.

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: any college mathematics (MATH) course at or above the college algebra (MATH 113) level and one additional course chosen from any computer science (CSCI) course, any statistics (STAT) course or another college mathematics (MATH) course considered higher level than college algebra (MATH 113). The candidate must complete each of these courses with a grade of "C" or higher. At the discretion of the mathematics and computer science faculty, the requirement may be satisfied by a demonstration of equivalent competency.

The above requirements are separate from and in addition to the General Education 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 cumulative grade point average of 2.00 or higher.

English and Mathematics Requirement

Mesa State College students are required to complete the following English and mathematics courses before they exceed sixty semester credit hours. Students should take the courses as freshmen. Those who need preparatory courses before they are ready to enroll in the required courses should enroll in the preparatory courses their first semester at Mesa State. Students who are completing sixty hours of course work will not be permitted to enroll in any additional courses until they have passed the required courses. Exceptions to the policy for a student requires the written permission of the department chairperson.

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 semester credit hours. The courses must be taken in sequence, and students are encouraged to take them in consecutive semesters. A "C" or higher must be earned in ENGL 111 before a student can take ENGL 112 and a "C" or higher grade must be earned in ENGL 112 to satisfy this requirement.

Mathematics Requirement

Mesa State College requires that the mathematics competency/requirement be completed before students accumulate more than sixty credit hours. Students working towards a baccalaureate degree in nursing are exempt from satisfying this requirement before they reach sixty semester credit hours.

Students seeking the B.A. degree must complete MATH 110 or a higher level mathematics course with a grade of "C" or higher to fulfill their mathematics competency under general education; students seeking the B.S. or B.B.A degree must complete MATH 113 or a higher level mathematics course with a grade of "C" or higher to fulfill their degree distinction.

Academic Residency

To receive a baccalaureate degree from Mesa State College, students must complete a minimum of 28 semester hours of credit 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.

Statement of Philosophy and Goals of Baccalaureate Education

The avowed hope of institutions of higher learning is that students will emerge with well-developed faculties for critical judgment, analytical thought, and an awareness of their world. In the college environment, students are expected to embrace some of the great ideas and expressions of creative energy which characterize the human condition. Specifically, a baccalaureate education emphasizes four areas of cultural achievement:

1. The origins and structure of modern society,
2. The enduring ideas which have inspired man kind through the ages,
3. The scientific world view and its impact on technology, and
4. The expression of the creative spirit in literature and fine arts.

Mesa State College reaffirms these ideals. They are ancient goals tested through the centuries in a tradition which harks back to the earliest universities. Their contemporary expression at Mesa State College will strengthen the foundation of all academic programs.

Educated men and women share a basic body of perception and knowledge. This heritage is at the core of the mission of a baccalaureate college. Other aspects of a student's curriculum reflect particular talents and career aspirations, but this statement builds upon universals – the acknowledged foundations of the arts, letters, social and natural sciences in our civilization.

The design of general education has been guided by a ninefold set of objectives. A Mesa State College baccalaureate graduate should:

1. Be able to communicate effectively in the English language
2. Possess mathematical skills
3. Be aware of the great moral, ethical, and philosophical questions which have endured through the ages
4. Have some knowledge of the origins of our own culture and the existence of others
5. Be able to think critically and recognize issues across a broad spectrum of subjects
6. Understand the complexities of our social, economic and political environment
7. Have a familiarity with the scientific approach to the biological, psychological, and physical universe
8. Appreciate the contributions of literature to our perception of ourselves and our world
9. Appreciate the aesthetic spirit of mankind through a study of some aspect of the performing and visual arts.

General Education

Each student must complete the 33 minimum semester credit hour general education requirement of lower division credit as specified by the Mesa State College faculty. For specific course requirements and choices, refer to the section titled *Courses Approved for General Education Baccalaureate Degree Requirements.*

The only exceptions are for (1) students who have already earned a baccalaureate degree from a regionally accredited institution and (2) students who have an Associate of Arts (A.A.) or Associate of Science (A.S.) degree from a regionally accredited institution or students from a college in Colorado whose transcript contains the "Common Core" statement indicating completion of the Colorado Core Transfer Consortium general education curriculum. In both of these cases, the student's general education is completed and no further general education course work is required at Mesa State College.

Regarding students who wish to transfer all or part of a General Education Program from another institution, the Mesa State Office of the Registrar will check the program against the nine General Education objectives set forth in 'Statement of Philosophy and Goals of Baccalaureate Education,' above, to determine whether, and to what extent, these objectives have been satisfied.

Any college-wide general education course required in a student's major will be replaced with a general education course from the appropriate general education area. 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. 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).
2. 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.

3. 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 with a grade of "C" or higher. (B.A. students, see no. 2 above; B.S. and B.B.A. students, see the Degree Distinctions section or the Mathematics Requirement section in this catalog).
4. A student may satisfy a General Education requirement with an appropriate CLEP test, if the test has been approved by the appropriate academic department at Mesa State.
5. 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. Courses which fit this lecture and laboratory requirement are marked with an asterisk in the Natural Sciences general education list.)
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 Degree Requirements

English

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

Mathematics

MATH 110*	College Mathematics
	or
MATH 149	Honors 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 with a grade of "C" or higher on his or her transcript (for B.S./B.B.A. degrees, see Degree Distinction).

Humanities

ENGL 131, 132	Western World Literature I, II
ENGL 150	Introduction to Literature
ENGL 222	Mythology
ENGL 231, 232	Non-Western World Literature I, II
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 150	General Psychology
PSYC 233	Human Growth and Development
SOCO 144	Marriage and Families
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 118	Survey of Art History, Ancient-Modern
DANC 115	Dance Appreciation
FINE 101	Man Creates
MUSA 110	Standard Notation
MUSA 220	Music Appreciation
MUSA 266	History of Popular Music
MUSP 1XX, 2XX	Music Performance (Any 100 or 200 level MUSP course)
SPCH 241	Oral Interpretation
THEA 117, 118 217, 218	Play Production
THEA 119, 120 219, 220	Technical Performance
THEA 141	Theatre Appreciation
THEA 145	Introduction to Dramatic Literature

Natural Sciences

*BIOL 101, 101L	General Human Biology and Laboratory
*BIOL 102, 102L	General Organismal Biology & 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
ENVS 101	Introduction to Environmental Science
GEOL 100	Survey of Earth Science
GEOL 103	Weather and Climate
GEOL 104	Oceanography
GEOL 105	Geology of Colorado
GEOL 107	Natural Hazards and Environmental Geology
*GEOL 111, 111L	Principles of Physical Geology and Laboratory
*GEOL 112, 112L	Principles of Historical Geology and Laboratory
*GEOL 113, 113L	Field-Based Introduction to Physical Geology and Laboratory
PHYS 100	Concepts of Physics
PHYS 101	Elementary Astronomy
*PHYS 105, 105L	Physics by Inquiry
*PHYS 111, 111L	General Physics and Laboratory
*PHYS 112, 112L	General Physics and Laboratory
*PHYS 131, 131L	Fundamental Mechanics and Laboratory
*PHYS 132, 132L	Electromagnetism and Optics and Laboratory
*PHYS 201, 201L	The Cosmic Perspective and Laboratory

* Only these courses fulfill the requirement of Natural Science with an associated lab or field component. Both the lecture and laboratory must be taken if general education credit is to be received.

Applied Studies

ACCT 201	Principles of Financial Accounting
BIOL 154, 154L	Technobiology and Laboratory
BUGB 101	Introduction to Business
BUGB 231	Survey of Business Law
BUGB 249	Personal Finance
CISB 101	Business Information Technology
CSCI 100	Computers in Our Society
CSCI 110	Beginning Programming:
CSCI 120	Technical Software
ELCT 110, 110L	Basic Electronics and Laboratory
ELCT 132, 132L	Intro to Information Technology Hardware and Software and Lab
ENGR 105	Basic Engineering Drawing
ENGR 131	Introduction to Cartography
ENVS 110	Environmental Science and Technology I
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

MAMT 100	Machine Shop Studies
MAMT 102	Machine Theory
MAMT 160, 160L	Properties of Materials and Laboratory
MATH 121	Calculus for Business
MATH 127	Mathematics of Finance
*MUSL 130-238	Applied Music Lessons
MUSA 130	Class Piano I
MUSA 131	Class Piano II
MUSA 137	Class Voice I
MUSA 236	Electronic Instrument Technique and Materials
PHIL 275	Introduction to Logic
SPCH 101	Interpersonal Communication
SPCH 102	Speechmaking
SPCH 112	Voice and Diction
STAT 214	Business Statistics
TSTC 100	Introduction to Transportation Services
TSTC 101	Vehicle Service and Inspection
UTEC 120	Industrial Safety Practices
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

*Applied Music Lessons are available for general education only to students who are enrolled concurrently in an MUSP course.

In addition, the Human Performance and Wellness requirement must be met (see Human Performance and Wellness under the Graduation Requirements section).

Second Baccalaureate Degrees and Concentrations Within One Degree

Mesa State College offers 19 baccalaureate degrees. Students who meet the requirements may earn any one or more of these baccalaureate degrees. (See *Second Baccalaureate Degree* below.)

Under several of the 19 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). Students with a baccalaureate degree from another institution who are pursuing a second baccalaureate degree from Mesa State College will be exempt from the Human Performance and Wellness requirement.

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 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/DANC 174,177 class from the Aerobic/Fitness list must be earned. Only the one required HPWE/DANC 174,177 class 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.

Academic Residency

To receive an associate degree from Mesa State College, students must complete a minimum of 16 semester hours of credit in no fewer than two semesters of study at Mesa State College.

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.**

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 higher 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 *Programs of Study* section in this catalog or as developed in consultation with a faculty advisor 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 advisors 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 advisor. 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 advisor. 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**
Mathematics			
MATH 113	College Algebra	4	
MATH 121	Calculus for 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	
STAT 214	Business Statistics	3	

SCIENCE **4**

Biology

BIOL 101, 101L	General Human Biology and Laboratory	3,1	
BIOL 102, 102L	General Organismal Biology 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.

Chemistry

CHEM 121, 121L	Principles of Chemistry and Laboratory	4,1	
CHEM 122, 122L	Principles of 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	
GEOL 113, 113L	Field-Based Introduction to Physical Geology and Lab	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 131, 131L	Fundamental Mechanics and Laboratory	4,1	
PHYS 132, 132L	Electromagnetism & Optics 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.

c) **9 semester hours of Social and Behavioral Sciences chosen from the following courses; 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 150	General Psychology	3
Sociology		
SOCO 260	General Sociology	3

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

HUMANITIES			9
Art			
ARTE 115	Art Appreciation	3	
Foreign Language			
FLAF 111, 112	First-Year French I and II	3,3	
FLAF 211, 212	Second-Year French I and II	3,3	
FLAG 111, 112	First-Year German I and II	3,3	
FLAG 251, 252	Second-Year German I and II	3,3	
FLAS 111, 112	First-Year Spanish I and II	3,3	
FLAS 211, 212	Second-Year Spanish I and II	3,3	
Literature			
ENGL 131, 132	Western World Literature I and II	3,3	
ENGL 150	Introduction to Literature	3	
Music			
MUSA 220	Music Appreciation	3	
Philosophy			
PHIL 110	Introduction to Philosophy	3	
PHIL 275	Introduction to Logic	3	
Theatre			
THEA 141	Theatre Appreciation	3	

In addition, the Human Performance and Wellness requirement must be met (see Human Performance and Wellness under the 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	4	
MATH 121	Calculus for 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 Human Biology and Laboratory	3,1
BIOL 102, 102L	General Organismal Biology 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.

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
GEOL 113, 113L	Field-Based Introduction to Physical 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 101	Elementary Astronomy	3
PHYS 111, 111L	General Physics and Laboratory	4,1
PHYS 112, 112L	General Physics and Laboratory	4,1
PHYS 131, 131L	Fundamental Mechanics and Laboratory	4,1
PHYS 132, 132L	Electromagnetism & Optics 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.

c) **6 semester hours of Social and Behavioral Sciences chosen from the following courses; 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 150	General Psychology	3

Sociology

SOCO 260	General Sociology	3

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

HUMANITIES			6
Art			
ARTE 115	Art Appreciation	3	
Foreign Language			
FLAF 111, 112	First-Year French I and II	3,3	
FLAF 251, 252	Second-Year French I and II	3,3	
FLAG 111, 112	First-Year German I and II	3,3	
FLAG 251, 252	Second-Year German I and II	3,3	
FLAS 111, 112	First-Year Spanish I and II	3,3	
FLAS 211, 212	Second-Year Spanish I and II	3,3	
Literature			
ENGL 131, 132	Western World Literature I and II	3,3	
ENGL 150	Introduction to Literature	3	
Music			
MUSA 220	Music Appreciation	3	
Philosophy			
PHIL 110	Introduction to Philosophy	3	
PHIL 275	Introduction to Logic	3	
Theatre			
THEA 141	Theatre Appreciation	3	

In addition, the Human Performance and Wellness requirements must be met (see *Human Performance and Wellness* under the *Graduation Requirements* section.

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. The A.A.S. degrees available at Mesa State College, along with the courses required to complete each degree, are listed under the *Programs of Study* section in this catalog.

Students are urged to consult with a faculty advisor and to obtain from the advisor a program sheet for the degree sought.

1. General Education Requirements for the A.A.S. Degree include:

			Course Credits	Group Credits
A) 4 semester hours of Mathematics				4
UTEC 107		Mathematics for Technology	4	
MATH 113	#*	College Algebra	4	
B) 6 semester hours of English				6
ENGL 111	#*	English Composition and	3	
ENGL 112	#*	English Composition	3	
C) 6 semester hours selected from : Social and Behavioral Science, Humanities, and Applied Studies				6
Social and Behavioral Science				
ANTH 201	#*	Cultural Anthropology	3	
ANTH 222	#*	World Prehistory	3	
ECON 201	#*	Principles of Macroeconomics	3	
ECON 202	#*	Principles of Microeconomics	3	

GEOG 103	#*	World Regional Geography	3
HIST 101, 102	#*	Western Civilizations	3,3
HIST 131, 132	#*	United States History	3
POLS 101	#*	American Government	3
PSYC 150	#*	General Psychology	3
PSYC 233	#*	Human Growth and Development	3
Humanities			
ENGL 131, 132	#*	World Literature I and II	3,3
Applied Studies			
SPCH 101	#	Interpersonal Communications	3
SPCH 102	#	Speechmaking	3

2. Human Performance and Wellness Requirement **2**

HPWA 100	#*	Health and Wellness	1
HPWE XXX	#*	Aerobic/Fitness Activity Course	1

All courses designated with an * are transferable to the A.S. and A.A. degrees.
All courses designated with an # are transferable to the B.A. and B.S. degrees.

3. The remaining requirements and electives are found under the specific program in the *Programs of Study* section in this catalog.

4. Additional requirements apply for some degrees. For specific requirements see the program sheet.

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 Licensure

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

Teacher licensure is a separate process and must be pursued in addition to a baccalaureate degree. See Teacher Licensure 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 four academic schools at Mesa State College. These academic 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, are shown in this portion, with a brief summary of course and other requirements to earn each degree.
   This portion of the section is divided into (1) graduate degree offered (2) baccalaureate degrees offered and (3) associate degrees and certificates offered. Each of the portions is alphabetical by degree name.
4. **Teacher Licensure**

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 with his or her advisor 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 Dean of Enrollment Management in order for a student to be considered for graduation. Refer to the *Undergraduate Graduation Requirements* section of this catalog for further details. Graduate students refer to the *Graduate Policies and Procedures* section in this catalog.

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 A.A.S. 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 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 dean or director of the academic school issuing credit must approve any exceptions.

A written contract is to be initiated by the student desiring independent study in consultation with a supervising instructor. The contract must include justification, description, monitoring, and evaluating procedures. Upon approval by the instructor and department chairperson, the student submits the signed, completed contract to the Office of the Registrar to register for the independent study course no later than the last day to add a full semester course.

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 or director well in advance.

With permission of the instructor, students may register for regular classes but do the work independently, or on their own. This is not the same as "Independent Study". Students who have made prior arrangement with the instructor will still register for the regular course, and not for Independent Study.

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 advisor, and others at Mesa State College.

Typically, cooperative education is open to junior and senior students. Interested students should consult with their faculty advisor and academic dean or director. There are limits on the amount of credit which will apply towards a degree. Undergraduate students see *Non-Traditional Credit* section in this catalog. Graduate students, see *Graduate Admission Policies and Procedures* section of this catalog.

Undergraduate Preparatory Courses

Preparatory courses are available in several subjects at Mesa State College. Numbers of such courses are below the 100 level (e.g., SUPP 090, College Preparatory 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 advisors 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.

Graduate students, see *Graduate Programs* section in this catalog for leveling courses.

SCHOOL OF APPLIED TECHNOLOGY

Kerry Youngblood, Executive Director

Departments and Faculty

Applied Academics
J. Crocker
Culinary Arts
D. Kirby, W. Smith
Communications Technology
J. Sluder
Electronics Technology
J.J. Waugh, R. Wilcox
Electric Lineworker
R. Rux
Graphic Communications
B. Manchee
Manufacturing Technology
S. Arevian, B. Durning, D. Freeman, J. McAninch, R. Sandoval, B. Sundermann, D. Thibodeau
Marketing
E. Walker
MedPrep
J. Huston
Transportation Services
B. Buchholz, G. Looft, J. Goetz

Each student seeking a degree or certificate must obtain a program sheet from his or her faculty advisor or from the office of the Director of the School of Applied Technology listing specific requirements for the degree or certificate sought. The School of Applied Technology offers (2-year) Associate of Science degrees, (2-year) Associate of Applied Science degrees, and (1-year) Certificates of Occupational Proficiency in a variety of disciplines. The school is located at the UTEC campus, at 2508 Blichmann Avenue about three miles northwest of the Mesa State College main campus. The

campus originated in 1992 to meet the state and national need for technically trained professionals. The school also offers customized training, as well as individual skill upgrading and retraining.

ASSOCIATE OF ARTS

Area of Emphasis: Administrative Office Technology

ASSOCIATE OF SCIENCE

Areas of Emphasis:
- Electronic Engineering Technology
- Manufacturing Technology

ASSOCIATE OF APPLIED SCIENCE

Areas of Concentration:
- Administrative Office Technology
  - Accounting Technician
  - Administrative Secretary
  - Legal Secretary
  - Medical Secretary
- Communications Technology Cluster
  - Telecommunications Engineer
- Criminal Justice (Program in conjunction with Delta, Montrose Area Vocational Technical Center)
- Culinary Arts
- Electronics Technology
- Manufacturing Technology Cluster
  - Computer Aided Design Technology
  - Machine Technology
  - Welding
- Transportation Service Cluster
  - Automotive Technology
  - Diesel Technology

CERTIFICATES OF OCCUPATIONAL PROFICIENCY

Areas of Concentration:
- Culinary Arts
- Electric Lineworker
- Electronics Technology
- Manufacturing Technology Cluster
  - Computer Drafting Technology
  - Manufacturing Machine Trades
  - Welding
- Transportation Service Cluster
  - Automotive Service
  - Diesel Mechanics

For more details, see Degrees in the following section of this catalog. The graduate degree is listed in the Graduate section of this catalog. The baccalaureate degrees are alphabetical by title within the baccalaureate section; the associate degrees are alphabetical within that section; and the certificates are alphabetical within that section.

SCHOOL OF BUSINESS AND PROFESSIONAL STUDIES

John Rogers, Dean

Departments and Faculty

Accounting and Information Technology
L. Bornmann, J. Buckley, C. Grabow, D. McGinnis, B. McMechen, D. Rogers (Chair), G. Slauson

Business Administration
M. Bridge (Chair), T. Hatten, G. Hoover, J. Knappenberger, K. Koh, T. Liesz, F. Markham, B. Mayer, J. Moorman, D. Rees, R. Sitz, R. Vail, A. Wallace, M. Zimmerer

Human Performance and Wellness
J. Buchan, J. Cordova (Chair), R. Crick, K. Fritz, C. Hanks, J. Heaps, G. Leadbetter, K. Mort, S. Murray, R. Owens, J. Ramunno, T. Ray, D. Robidoux, R. Ryan, D. Schakel, S. Yeager

Nursing and Radiologic Sciences
S. Beede, S. Forrest (Chair), J. Giddens, S. Goebel, J. Goodhart (B.S.N. Director), B. Hoffman, A. Lambeth,, J. Marie, K. Reuss, C. Roy, B. Schans (Radiologic Technology Director), C. Thomas, P. Ward, S. White

Each student seeking a degree or certificate must obtain a program sheet from his or her faculty advisor or from the their department.

Nursing and Radiologic Sciences

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 Radiologic Sciences. Each new applicant must obtain from Nursing and Radiologic Sciences written guidelines explaining specific program requirements. All programs are fully accredited by the appropriate source including the American Association of Colleges of Nursing and the Joint Review Committee on Education in Radiologic Technology.

Students in most programs offered through the Department of Nursing and Radiologic Sciences 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 Business and Professional Business and 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 (B.B.A.)

Areas of Concentrations:
- Business Economics
- Finance
- Human Resources Management
- Management
- Marketing
- Travel, Tourism, & Commercial Recreation Management

BACHELOR OF ARTS IN HUMAN PERFORMANCE AND WELLNESS

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

BACHELOR OF SCIENCE IN ACCOUNTING

Areas of Concentration: Governmental and Not-For-Profit Accounting
Information Technology
Managerial Accounting
Public Accounting

BACHELOR OF SCIENCE IN COMPUTER INFORMATION SYSTEMS

BACHELOR OF SCIENCE IN NURSING (B.S.N.)

ASSOCIATE OF APPLIED SCIENCE

Radiologic Science
Travel, Recreation and Hospitality Management

ASSOCIATE OF ARTS

Areas of Emphasis: Business Computer Information Systems
Business Administration

For more details, see Degrees in the following section of this catalog. The graduate degree is listed in the Graduate Programs section of this catalog. The baccalaureate degrees are alphabetical by title within the baccalaureate section; and the associate degrees are alphabetical within that section; the certificates are alphabetical within that section.

SCHOOL OF HUMANITIES AND SOCIAL SCIENCES

Janine Rider, Dean

Departments and Faculty

Education and Teacher Licensure
S. Arosteguy, J. Brigham, L. Friel, T. Lovelace, D. Phillips, P. Scanga (Early Childhood Education)

Fine and Performing Art
M. Atkinson, M. Baron, S. Claffey, V. Carmichael, R. Cowden, D. Cox (Co-Chair), J. Delmore, C. Elias, S. Garner (Co-Chair), K. Gustafson, C. Hardy, C. Hofer (Co-Chair), P. Ivanov, L. Mosher, D. Nelson, C. Quinn-Hensley, A. Sanders, E. Schruers, D. Snider, H. Waggoner, M. Waldrop, S. Woodworth, M. Wounded Head

Languages, Literature and Communications
T. Acker, D. Andrews, J. Barak, R. Berkey, E. Broughton (chair), M. Brown, W. Brown, M. Djos, B. Evers, B. Geiger, A. Gordon, C. Haas, K. Hague, P. Hills, R. Johnson, D. Joseph, B. Laga, A. Learst, L. Lopez, S. Matchett, B. McLoughlin, R. Neal, J. Nizalowski, R. Phillis, D. Pilkenton, J. Rider, S. Schakel, L. Silva-Villar, M. Thomas, R. Tucci, N. Watkins, B. Wright

Social and Behavioral Sciences
S. Becker, C. Boulanger, C. Buys, T. Casey, L. Chere, A. Cummings, J. Curtsinger, K. Ford, M. Gizzi, T. Graves, M. Heinrich, P. Joffer, B. Michrina, J. Miller, D. O'Roark, P. Reddin, J. Redifer (chair), E. Rodriguez, S. Schulte, G. Starbuck, S. Swedberg, H. Tiemann, B. Wilhelm

Each student seeking a degree or certificate must obtain a program sheet from his or her faculty advisor 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 ENGLISH

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

BACHELOR OF ARTS IN FINE AND PERFORMING ARTS

Areas of Concentrations:
- Art
- Art Education (K-12)
- Graphic Art
- Music Education (K-12)
- Music Performance:
  - Instrumental
  - Keyboard
  - Vocal
- Music Theatre
- Theatre
  - Acting /Directing
  - Design/Technical

BACHELOR OF ARTS IN HISTORY

Area of Concentration:
- History
- History with Teaching (Secondary)

BACHELOR OF ARTS IN LIBERAL ARTS

Area of Concentration:
- Liberal Arts
- Liberal Arts with Elementary Teaching

BACHELOR OF ARTS IN MASS COMMUNICATION

Area of Concentrations:
- Broadcast Production
- Media News
- Print Media
- Public Relations

BACHELOR OF ARTS IN POLITICAL SCIENCE

Area of Concentration:
- Political Science
- Administration of Justice

BACHELOR OF ARTS IN PSYCHOLOGY

Area of Concentration:
- Psychology
- Counseling Psychology

BACHELOR OF ARTS IN SOCIAL SCIENCE

BACHELOR OF ARTS IN SOCIOLOGY

Areas of Concentration: Sociology
Anthropology
Criminology
Human Services

ASSOCIATE OF ARTS

Areas of Emphasis: Early Childhood Education
Humanities
Social Science – General

For more details, see Degrees in the following section of this catalog. The graduate degree is listed in the Graduate section of this catalog. The baccalaureate degrees are alphabetical by title within the baccalaureate section; the associate degrees are alphabetical within that section; and the certificates are alphabetical within that section.

SCHOOL OF NATURAL SCIENCES AND MATHEMATICS

Duane Hrncir, Dean

Departments and Faculty

Biological Sciences
R. Ballard, B. Bauerle, P. Chowdry, F. Davidson, W. Kelley, G. McCallister, D. McKenney, C. McVean Waring, A. Palmer, T. Schountz, T. Walla, S. Werman (Chair)

Computer Science, Mathematics and Statistics
J. Arledge, C. Bailey, C. Barkley (Chair), C. Bonan-Hamada, E. Bonan-Hamada, W. Davenport, K. Davis, A. Ektare, P. Gustafson, J. Kavanagh, W. MacEvoy, T. Novotny, E. Packard, L. Payne, G. Rader, K. Schneider, T. Shockey, A. Spalding, Z. Wu

Physical and Environmental Sciences
A. Aslan, J. Brock, R. Cole, C. Dodson, G. Gilbert, V. Johnson, R. Livaccari, L. Madsen, P. Misra (Chair), J. Richards, J. Rybak, W. Tiernan, K. Topper, H. Voorhies, R. Walker

Each student seeking a degree or certificate must obtain a program sheet from his or her faculty advisor 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, and associate (2-year) degrees in 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 (Secondary)

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

BACHELOR OF SCIENCE IN ENVIRONMENTAL SCIENCE AND TECHNOLOGY

Areas of Concentration:
- Environmental Restoration and Waste Management
- Environmental Science
- Environmental Science Education - Early Adolescence/Young Adult (Grades 7-12)

BACHELOR OF SCIENCE IN MATHEMATICS

Areas of Concentration:
- Mathematics
- Computational Science
- Mathematics with Teaching (Secondary)
- Statistics

BACHELOR OF SCIENCE IN PHYSICAL SCIENCE

Areas of Concentration:
- Applied Physics
- Chemistry
- Geology
- Geology with Teaching (Secondary)
- Environmental Geology
- Physics
- Physics with Teaching (Secondary)

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 advisor 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
- 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

For more details, see Degrees in the following section of this catalog. The graduate degree is listed in the Graduate Programs section of this catalog. The baccalaureate degrees are alphabetical by title within the baccalaureate section; the associate degrees are alphabetical within that section; and the 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. Mesa State College offers a number of degree programs that prepare a student for health careers. Students planning to enter the fields listed above are advised to declare a major in one of the sciences or another appropriate area.

Engineering
A student can profitably begin the baccalaureate study of engineering with two years at Mesa State College. The student is then prepared for subsequent transfer to institutions within Colorado which offer baccalaureate degrees in engineering. Programs should be carefully designed in consultation with an advisor.

Teacher Licensure
Licensure to teach mathematics or science in the secondary schools and licensure 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 Licensure Department.

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

GRADUATE PROGRAMS

Mesa State College began offering the first of its graduate level programs in the 1997-98 year. New programs and expanded offerings will be presented in future terms as CCHE approval allows.

The MBA program at Mesa State is administered by the Director of Graduate Programs. The administration is guided on academic policy matters by the Graduate Council, which receives and acts on proposals submitted by the faculty immediately responsible for the program.

MASTER OF BUSINESS ADMINISTRATION (MBA)

The Mesa State College MBA is a challenging program designed to prepare graduates for the changing business world. The degree is awarded after successful completion of 36 semester hours of rigorous study. The program is designed to provide the student with a broad background in business while allowing the student to focus on a specified area of study, if desired. To this end, students acquire knowledge of management operations, an appreciation of the interrelationships involved, an understanding of the economic, political and social environment in which businesses function, and behavioral skills that are essential in the manager's role in the implementation of business decisions. The MBA program endeavors to provide an atmosphere conducive to the development of each student's ability to think in a creative manner. The program makes extensive use of lectures, seminars, group projects, case studies and independent research.

The Mesa State MBA has two basic components: a 24 hour core and a 12 hour general elective requirement. The program is open to all baccalaureate holding applicants who can demonstrate through academic or experiential preparation an appropriate background in the core requirements that include work in management, finance, marketing, law and ethics, organizational theory and behavior, and accounting regardless of the undergraduate field of study. Students without this background may be required to complete leveling requirements.

Electives include such courses as global business, entrepreneurship, managerial economics and management information systems. Electives also provide the student with the opportunity to develop and present an original research project or serve an internship.

Admission to the MBA Program

Applicants must normally:

* Possess an undergraduate degree from a regionally accredited college or university
* Have earned a GPA of 3.00 or better from the most recent 60 credit hours of course work earned toward a bachelor degree

* Have a cumulative 3.00 GPA or better for prior graduate work
* Take the GMAT and the accompanying essay and have the results sent to the Office of Admission. A GMAT score of 450 or higher is required. The GRE or MAT score will be considered as an alternative to the GMAT.
* Provide two letters of professional and/or academic recommendation
* Interview, if required, with members of the Graduate Admission Committee
* International students must also take the TOEFL and achieve a score of 550 or higher

Candidates meeting ALL of the above requirements may be admitted under full status.

Candidates not meeting all of the above requirements may be admitted under provisional status. Provisional students must be fully admitted by the time they have completed one semester or nine credit hours (whichever comes first) or be dropped from the program.

MBA For Those Without a Business Degree

While the MBA program is designed for the student having earned a bachelor's degree in a business related field, the opportunity for study is available for the non-business degree holder. For these students, a series of 12 hours of leveling courses have been designated to address any deficiency. Through careful selection of undergraduate courses, students may be admitted to the MBA program without needing any of the leveling courses.

Academic Standards

Graduate courses are graded in an alphabetical system A-F.

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

Graduate students may repeat a maximum of six hours of graduate credit. No course may be repeated more than once. When a course is repeated, the last grade earned is computed into the student's GPA. The previously attempted courses and grades remain in the academic record but are not computed in the overall average. Transcripts will contain a statement indicating the grade point average has been re-computed and stating the basis for re-computation.

To remain in good graduate standing, a graduate student must maintain a GPA of 3.00 or better. If the cumulative graduate GPA falls below 3.00, a graduate student will be placed on probation. Students have one semester to show progress toward good standing. Probationary students with 12 or more semester hours of graduate work will be suspended whenever progress toward good standing is not demonstrated.

A graduate student will be suspended whenever the graduate cumulative GPA falls below 2.50. A student may appeal suspension by submitting a written petition to his or her advisor, then to the graduate committee. This petition must provide justification for continued registration.

Internship/Management Practicum/Thesis

Each graduate program requires work experience or a directed research project. MBA students may select an internship or a management practicum. An internship is a directed work experience within an institution that the student is not currently employed. A management practicum is a directed work experience within an institution that the student is currently employed.

For the internship experience, each graduate student will, in conjunction with his or her advisor, find and select a business position and develop objectives to be accomplished on the job location. These objectives must be submitted in an internship plan that will require the written approval of the advisor, the program director and the appropriate dean. The student will make a presentation to the faculty and guests on work completed for the internship.

For the management practicum, the student must complete a management project. The project will be developed by the student working in conjunction with the employer, and must be approved by the course instructor. The project is initiated, developed, conducted, completed and reported by the student and must relate to as many courses completed in the MBA program as possible. The expected impact of the student's recommendations must be beyond the boundaries of a single functional area.

BUGB 595 is the three-hour course for both the internship and practicum. A minimum of 150 hours of work related experience is required for this course. Completion of all MBA core courses is required prior to the experience.

A thesis track may be an optional substitute for the internship/practicum. Students who are permitted must complete, under faculty supervision, an original research paper and prepare an oral presentation of the thesis. The student must secure a faculty member to work with him/her on the topic of study, research design, and quantitative methods. Approval from the student's graduate committee, program director, and academic dean are required.

PROGRAMS OF STUDY

Required Courses

ACCT 500	Managerial Accounting
BUGB 500	Advanced Business Law and Ethics
FINA 500	Financial Strategy
MANG 500	Advanced Management Theory
MANG 501	Productions and Operations Management
MANG 510	Organizational Theory and Behavior
MANG 590	Strategy and Policy
MARK 500	Marketing Strategy

Elective Courses

BUGB 510	Global Business
BUGB 520	Seminar in Current Business Topics
BUGB 530	Research Design
BUGB 590	Thesis (6 hours)
BUGB 595	Cooperative Education
CISB 500	Management Information Systems
ECON 530	Managerial Economics
MANG 520	Human Resource Management
MANG 540	Advanced Quantitative Methods
MANG 550	Entrepreneurship

Students are required to meet with their advisor and submit information by the appropriate deadlines.

All graduate courses for the MBA are listed in the *Course Descriptions* section of this catalog in the prefix areas of Accounting (ACCT), Business Administration (BUGB), Computer Information Systems in Business (CISB), Economics (ECON), Finance (FINA), Management (MANG), Marketing (MARK), and Masters of Business Administration (MBA).

Leveling Courses

If the prospective MBA student does not have an undergraduate business degree, the student must complete the following Mesa State College courses or equivalent. Equivalent courses are determined by the applicant's graduate committee.

MBA 500	Management Environment
MBA 505	Marketing Environment
MBA 510	Accounting Environment
MBA 515	Finance/Economics Environment

General Policies

Up to nine credit hours may be taken in a "non-degree seeking student" status and later applied to the program requirements. Up to nine credit hours of applicable courses, with a grade of "B" or higher, may be transferred from a regionally accredited institution into the program; additional information may be found in the Acceptance of Transfer Credit portion of the Graduate Admissions Policies and Procedures 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.)

- Governmental and Not-For-Profit Accounting
- Information Technology
- Managerial Accounting
- Public Accounting

Biological Sciences (B.S.)

- Biology
- Biology with Teaching (Secondary)

Business Administration (B.B.A.)

- Business Economics
- Finance
- Human Resource Management
- Management
- Marketing
- Travel, Tourism and Commercial Recreation Management

Computer Information Systems (B.S.)

Computer Science (B.S.)

English (B.A.)

- Literature
- Writing
- English with Teaching (Secondary)

Environmental Science and Technology (B.S.)

- Environmental Restoration and Waste Management
- Environmental Science
- Environmental Science Education - Early Adolescence/Young Adult Grades 7-12

Fine and Performing Arts (B.A.)

- Art
- Art Education (K-12)
- Graphic Art
- Music Education (K-12)
- Music Performance: Instrumental, Keyboard, Vocal
- Music Theatre
- Theatre
  - Acting/Directing
  - Design/Technical

History (B.A.)

- History
- History with Teaching (Secondary)

Human Performance and Wellness (B.A.)

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

Liberal Arts (B.A.)

- Liberal Arts
- Liberal Arts with Teaching (Elementary)

Mass Communications (B.A.)

- Broadcast Production
- Media News
- Print Media
- Public Relations

Mathematics (B.S.)

- Mathematics
- Computational Science
- Mathematics with Teaching (Secondary)
- Statistics

Nursing (B.S.N.)

Physical Sciences (B.S.)

- Applied Physics
- Chemistry
- Geology
- Environmental Geology
- Geology with Teaching (Secondary)
- Physics
- Physics with Teaching (Secondary)

Political Science (B.A.)

- Political Science
- Administration of Justice

Psychology (B.A.)

- Psychology
- Counseling Psychology

Social Science (B.A.)

Sociology (B.A.)

- Sociology
- Anthropology
- Criminology
- Human Services

ACCOUNTING

School of Business and 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 (minimum 33 credit hours)			33
b. B.S. Distinction (Math/Computer Science) (minimum 6 credit hours)			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. Core courses			52
ACCT 201	Principles of Financial Accounting	(3)	
ACCT 202	Principles of Managerial Accounting	(3)	
ACCT 321	Intermediate Accounting I	(4)	
ACCT 322	Intermediate Accounting II	(4)	
ACCT 331	Cost Accounting I	(3)	
ACCT 441	Individual Income Tax	(5)	
BUGB 351	Business Law I or		
BUGB 349	Legal Environment of Business	(3)	
BUGB 352	Business Law II	(3)	
CISB 101	Business Information Technology	(3)	
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 – see below			19-21
c. Electives (must be non-business)			5-7

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

3. Special requirements:
   a. In order to be admitted to the accounting emphasis, certain prerequisites must be satisfied. To be eligible for admission, a student must have successfully completed the following:
      (1) 45 credit hours with a 2.75 GPA or higher,
      (2) ACCT 201 and ACCT 202 with a 2.5 minimum GPA and ACCT 321 with at least a grade of "C",
      (3) MATH 113 or higher numbered MATH class,
      (4) STAT 200 or STAT 214,
      (5) CISB 101,
      (6) MANG 201,
      (7) ENGL 111 and 112 or ENGL 129,
      (8) 15 credit hours of general education requirements.
   b. Applications for admission to the accounting emphasis should be submitted to the Department Admission Committee the semester all requirements have been met.
   c. A grade of "D" is not acceptable in any of the courses identified in this requirement.
   d. Only the Department Admissions Committee may make exceptions to any of these requirements.

CONCENTRATIONS

Bachelor of Science
ACCOUNTING

Governmental and Not-For-Profit Accounting
Information Technology
Managerial Accounting
Public Accounting

An additional option is a five year (3+2) program that allows students to graduate with a Bachelor of Science in Accounting and a Master of Business Administration. This program meets the CPA certification requirements in all states.

BIOLOGICAL SCIENCES

School of Natural Sciences 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		34
b. B.S. Distinction (Math/Statistics/Computer Science)		7#
MATH 113 College Algebra (or higher) (4) **and**		
STAT 200 (3) **or**		
MATH 146 (5)		
c. Human Performance and Wellness		3

2. Requirements specific to this degree

a. Required courses			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 483	Senior Thesis or	(2)	
BIOL 482	Senior Research and	(2)	
BIOL 487	Advanced Research	(2)	

Additional biology courses must be selected from three of the following four areas (minimum of 19 credit hours; 10 credit hours must be upper division.)

(1) Cell, Developmental, and Molecular

BIOL 302, 302L	Cellular Biology and Lab	(4)
BIOL 310, 310L	Developmental Biology and Lab	(5)
BIOL 343, 343L	Immunology and Lab	(4)
BIOL 425	Molecular Genetics	(3)
BIOL 442	Pharmacology	(3)
CHEM 315, 315L	Biochemistry and Lab	(4)

(2) Organismal

BIOL 221, 221L	Plant Identification and Lab	(4)
BIOL 231, 231L	Invertebrate Zoology and Lab	(4)
BIOL 250, 250L	Intro to Medical Microbiology and Lab	(5)
BIOL 331, 331L	Insect Biology and Lab	(5)
BIOL 350, 350L	Microbiology 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 and Lab	(5)	
BIOL 145, 145L	Human Anatomy and Physiology II and Lab	(4)	
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)	
BIOL 426, 426L	Introduction to Electron Microscopy and Lab	(4)	
BIOL 441, 441L	Endocrinology and Lab	(4)	

(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 405, 405L	Advanced Ecological Methods and Lab	(5)	
BIOL 406	Plant-Animal Interactions	(3)	
BIOL 414, 414L	Aquatic Biology and Lab	(4)	
BIOL 415	Tropical Ecosystems	(2)	

b. Required related study area§* 20

CHEM 131, 131L	General Chemistry (or higher level)	(5)	
CHEM 132, 132L	General Chemistry (or higher level)	(5)	
PHYS 111, 111L	General Physics (or higher level)	(5)	
PHYS 112, 112L	General Physics (or higher level)	(5)	

c. Concentrations - see below

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

e. Electives (unrestricted) 15

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

3. Special requirements and recommendations
   a. *A minimum grade of "C" is required for all courses of "Required Core Courses" and "Required Related Study Area."
   b. § 20 credit hours of Degree Distinction and Required Related Study Area must be completed by end of Sophomore Year (≤ 70 cr. hrs).
   c. # With statistics option
   d. ‡ With thesis option

CONCENTRATION
Bachelor of Science
BIOLOGICAL SCIENCES

Biology with Teaching (Secondary)

Requirements may vary if a concentration is selected. See faculty advisor 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 advisors in both Biology and Teacher Licensure.

BUSINESS ADMINISTRATION

School of Business and 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 (minimum 33 credit hours)			33
Required General Education Courses			
ECON 201	Principles of Macroeconomics	(3)	
ECON 202	Principles of Micreconomics	(3)	
b. B.B.A. Distinction (Math/Computer Science)			7
MATH 113	College Algebra	(4)	
(or a higher level math as approved by advisor)			
STAT 214	Business Statistics	(3)	
c. Human Performance and Wellness			3
2. Requirements specific to this degree			29
a. Required courses			
ACCT 201	Principles of Financial Accounting	(3)	
ACCT 202	Principles of Managerial Accounting	(3)	
BUGB 105	Freshman Business Seminar	(2)	
BUGB 211	Business Communications	(3)	
BUGB 349	Legal Environment of Business	(3)	
CISB 101	Business Information Technology	(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 - see below			27-33
Requirements may vary with the concentration selected.			
c. Electives (must be non-business, at least 6 credit hours must be upper division).			14-20
If desired, a student may use electives to satisfy requirements for a minor.			

CONCENTRATIONS
Bachelor of Business Administration
BUSINESS ADMINISTRATION

Business Economics
Finance
Human Resources Management
Management
Marketing
Travel, Tourism, and Commercial Recreation Management

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

COMPUTER INFORMATION SYSTEMS

School of Business and Professional Studies

Bachelor of Science

1. Baccalaureate graduation requirements (For further information and complete requirements, see your faculty advisor and current Mesa State College catalog.)

			Cr. Hrs.
a. General Education (minimum 33 credit hours)			33
b. B.S. Distinction (Math/Computer Science)			6
MATH 121	Calculus for Business	3	
(or a higher level math as approved by advisor)			
STAT 214	Business Statistics	3	
c. Human Performance and Wellness			3

2. Requirements specific to this degree 30

a. Required courses			
CSCI 110	Beginning Programming	3	
CISB 201	Fundamentals of Information Systems	3	
CISB 205	Advanced Business Software	3	
CISB 131	COBOL Programming	3	
CISB 392	Information Systems Theory & Practice	3	
CISB 400	Data Comm. & Network Management	3	
CISB 442	Systems Analysis and Design	3	
CISB 451	Database Administration	3	
CISB 471	Advanced Information Systems	3	
ELCT 260	Info Technology, Hardware & Software	3	
b. Business Support Courses			30
ACCT 201	Principles of Financial Accounting	3	
ACCT 202	Principles of Managerial Accounting	3	
BUGB 349	Legal Environment of Business	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 331	Quantitative Decision Making	3	
MANG 491	Business Policies and Management	3	
MARK 231	Principles of Marketing	3	
c. Electives (18 cr. hrs; 13 cr. hrs. must be Upper Division			18

COMPUTER SCIENCE

School of Natural Sciences 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			34
b. B.S. Distinction (Mathematics/Statistics/Computer Science)			10
MATH 151	Calculus I	(5)	
MATH 152	Calculus II	(5)	
NOTE: The minimum number of hours for distinction is 6.			
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	(4)
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 369	Discrete Structures I	(3)
MATH 361	Numerical Analysis or	(4)
MATH 370	Discrete Structures II	(3)
STAT 200	Probability and Statistics	(3)

Select five courses (three of which must be at the 400 level):

CSCI 333	UNIX Systems Programming	(3)
CSCI 337	Adv. Applications and User Interface Design	(3)
CSCI 350	Software Engineering	(3)
CSCI 375	Object Oriented Programming	(3)
CSCI 380	Operations Research	(3)
CSCI 445	Computer Graphics	(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. No more than one "D" in the major and a GPA of at least 2.5 in the major will be required.

d. Electives (unrestricted) — 22-23

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

e. See faculty advisor for a program sheet detailing exact and complete requirements for the major.

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 minimum credit hours)			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	(3)	
ENGL 421	History of Literary Criticism	(3)	
ENGL 494	Seminar in Literature	(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 Literature 1830-1870	(3)	
ENGL 316	American Literature 1870-1900	(3)	
ENGL 335	The Bible as Literature	(3)	
ENGL 415	American Folklore	(3)	
ENGL 423	Short Story	(3)	
ENGL 435	American Literature 1900-1945	(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)			24-30
c. Electives (unrestricted)			4-30

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 (Secondary)

Requirements vary with the concentration selected. See faculty advisor 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 advisors in both English and Teacher Licensure.

ENVIRONMENTAL SCIENCE AND TECHNOLOGY

School of Natural Sciences and Mathematics

Bachelor of Science
Concentration in Environmental Science

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

			Cr. Hrs.
a. General Education (minimum 33 credit hours)			33
b. B.S. Distinction (Math and Computer Science) (minimum 6 credit hours)			6
MATH 113	College Algebra (or higher)	4	
STAT 200	Probability and Statistics	3	
c. Human Performance and Wellness			3

2. Requirements specific to this degree

a. Required Core Courses			12
ENVS 110	Environmental Science and Technology I	3	
ENVS 331, 331L	Water Quality, Lab	4	
ENVS 340	Air Quality and Pollution Control	3	
ENVS 492	Capstone in Environmental Restoration and Waste Management	2	
b. Other required environmental courses:			7
ENVS 210	Environmental Science and Technology II	3	
ENVS 312, 312L	Soil Properties & Characterization, Lab	4	
c. Restricted Environmental electives (Select a minimum of 14 credit hours from the following):			14
ENVS 213, 213L	Site Characterization, Lab	5	
ENVS 315	Disturbed Land Rehabilitation	3	
ENVS 396	Topics	1-3	
ENVS 413	Environmental Fate & Transport of Contaminants	4	
ENVS 420, 420L	Adv. Env. Sampling and Analytical Methods, Lab	4	
ENVS 431	Water and Wastewater Treatment	3	
ENVS 496	Topics	1-3	
d. Required Support Courses			31
POLS 488	Environmental Politics	3	
3-5 credits selected from:			
MATH 151 or	Calculus I or		
MATH 146	Calculus for the Biological Sciences	5	
STAT 3XX	300-level statistics course	3	
10-15 credits selected from:			
CHEM 121, 121L	Principles of Chemistry, Lab	5	
CHEM 122, 122L	Principles of Organic Chemistry, Lab	5	
CHEM 131, 131L	General Chemistry and Lab	5	
CHEM 132, 132L	General Chemistry and Lab	5	
CHEM 300	Environmental Chemistry	4	
CHEM 311, 311L	Organic Chemistry, Lab	5	
10-15 credits selected from Geology and/or Biology. Students must see their advisor for a list of eligible courses		10-15	

3. Electives (unrestricted) — 14

Environmental Science and Technology majors are encouraged to concentrate on a focused area of study. At least 9 credits must be in upper division courses (those numbered 300 and higher)

Concentration in Environmental Restoration and Waste Management

			Cr. Hrs.
a. General Education (minimum 33 credit hours)			33
b. B.S. Distinction (Math and Computer Science)			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 Core Courses			38
ENVS 110	Environmental Science and Technology I	3	
ENVS 211	Hazardous/Radioactive Waste Management	4	
ENVS 212, 212L	Environmental Health & Safety, Lab	3	
ENVS 213, 213L	Site Characterization, lab	5	
ENVS 250	Environmental Compliance	4	
ENVS 301	Environmental Project Management	2	
ENVS 331, 331L	Water Quality, Lab	4	
ENVS 340	Air Quality and Pollution Control	3	
ENVS 420, 420L	Adv. Env. Sampling & Analytical Methods, Lab	4	
ENVS 492	Capstone in Environmental Restoration and Waste Management	2	
ENVS 499	Internship	4	
b. Required Support Courses			21
BIOL 105, 105L	Attributes of Living Systems, Lab or	5	
GEOL 111, 111L	Physical Geology, Lab	4	
CHEM 131, 131L	General Chemistry, Lab	5	
CHEM 132, 132L	General Chemistry, Lab	5	
CHEM 300	Environmental Chemistry or	4	
CHEM 311, 311L	Organic Chemistry, Lab	5	
ENGL 385	Technical Writing	3	
c. Restricted Electives			8
Select a minimum of 8 credit hours from the following, with at least 5 upper division credit hours. Students should consult with an advisor regarding appropriate combination of courses for individual needs.			
ENVS 216	Risk Assessment & Site Remediation	3	
ENVS 220, 220L	Environmental Field Instrumentation, Lab	3	
ENVS 312, 312L	Soil Properties & Characterization	4	
ENVS 315	Disturbed Land Rehabilitation	3	
ENVS 396	Topics	1-3	
ENVS 413	Environmental Fate & Transport of Contaminants	4	
ENVS 431	Water & Wastewater Treatment	3	
ENVS 496	Topics	1-3	
3. Electives (unrestricted)			9

Environmental Restoration and Waste Management majors are encouraged to concentrate on a focused area of study, with at least 5 credits in upper division courses. Each student is required to submit a plan of study within their electives to his or her advisor before the end of their sophomore year. By taking a few additional courses, students may choose to receive a formal minor in another discipline.

CONCENTRATION
Bachelor of Science

ENVIRONMENTAL SCIENCE AND TECHNOLOGY

Environmental Science Education (Early Adolescence/Young Adult Grades 7-12)

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 (minimum 33 credit hours)	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 and Art Education)			6
FINE 494	Seminar in Critical Analysis of the Arts (all concentrations except Music with Teaching)	(3)	
Fine and Performing Arts course(s) outside the concentration. (Music Theatre Concentration students are exempt from this requirement and take only FINE 494)		(3)	
b. Concentrations - see below (students must choose one)			51-78
c. Electives (unrestricted)			0-21

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

3. Special requirements and recommendations
   a. Students must receive a grade of "C" or better in Fine and Performing Arts Core Requirements, particular emphasis core requirements, and courses in the specific options. General Education, support courses, and electives are excluded from the minimum "C" requirements.
   b. It is recommended that students who are interested in pursuing graduate programs and/or teaching licensure programs maintain at least an overall 3.2 GPA with "A's" in the major courses.
   c. Fine and Performing Arts students should see their advisor each semester before registering for classes.
   d. It is advisable for each student to choose a minor in consultation with his or her advisor.

CONCENTRATIONS
Bachelor of Arts
FINE AND PERFORMING ARTS

Art

Required courses: 51

ARTE 101	Two Dimensional Design	(3)
ARTE 102	Three Dimensional Design	(3)
ARTE 118	Survey of Art History, Ancient-Modern	(3)
ARTE 151	Basic Drawing	(3)
ARTE 251	Figure Drawing	(3)
ARTE 300	Exhibitions and Management	(3)
ARTE XXX	200 Level Studio Classes	(6)
ARTE XXX	300 Level Studio Classes	(6)
ARTE XXX	400 Level Studio Classes	(6)
ARTE	Upper-division Art History classes	(12)
ARTE 494	Senior Seminar and Portfolio	(3)

1. Special Requirements
   It is the policy of the Mesa State College Art Department that all graduating seniors with a concentration in Art are required to have a comprehensive Senior Exhibit.

2. Additional expenses
   Approximately $100.00 is required for materials and equipment in addition to the cost of textbooks.

Art Education: K-12

Required courses:			36
ARTE 101	Two Dimensional Design	(3)	
ARTE 102	Three Dimensional Design	(3)	
ARTE 118	Survey of Art History, Ancient-Modern	(3)	
ARTE 121	Basic Photography for Teachers	(1)	
ARTE 151	Basic Drawing	(3)	
ARTE 220	Jewelrymaking for Teachers	(1)	
ARTE 230	Fiber Techniques for Teachers	(1)	
ARTE 241	Ceramics, Handbuilding	(3)	
ARTE 251	Figure Drawing	(3)	
ARTE 271	Printmaking - Relief and Intaglio **or**		
ARTE 272	Printmaking - Lithography	(3)	
ARTE 281	Sculpture - Modeling and Mold Making **or**		
ARTE 282	Sculpture - Foundry **or**		
ARTE 283	Sculpture - Carving and Construction **or**		
ARTE 284	Ceramic Sculpture	(3)	
ARTE 291	Painting or		
ARTE 292	Watercolor Painting	(3)	
ARTE 311 or 312 or 315 or 316	Art History, upper division (Choose one)	(3)	
ARTE 494	Senior Seminar and Portfolio	(3)	
Art Certification Specialty (6 credit hours 300 level and 3 credit hours 400 level)			9
ARTE 3XX		(3)	
ARTE 3XX		(3)	
ARTE 4XX		(3)	
Teacher Education Licensure			33
ARTE 410	Elementary Art Education Methods	(3)	
ARTE 410L	Field/Studio Experience – Elem. Art Ed. Methods	(1)	
ARTE 412	Secondary Art Education Methods	(4)	
EDUC 211	Introduction to Teaching	(2)	
EDUC 342	Pedagogical and Assessment Knowledge, Secondary/K-12	(3)	
EDUC 343	Teaching to Diversity	(3)	
EDUC 442	Meth. Of Teaching Language and Literacy, Secondary K-12	(5)	
EDUC 499d	Internship (Elementary)	(6)	
EDUC 499h	Internship (Secondary)	(6)	

Graphic Art

Required courses:			54
ARTE 101	Two Dimensional Design	(3)	
ARTE 102	Three Dimensional Design	(3)	
ARTE 118	Survey of Art History, Ancient-Modern	(3)	
ARTE 151	Basic Drawing	(3)	
ARTE 251	Figure Drawing	(3)	
ARTE 316	Twentieth-Century Art	(3)	
ARTE XXX	200 Level chosen from ARTE 271, 272, **or** 291	(3)	
ARTE XXX	300 Level chosen from ARTE 371, 372, 391, **or** 392	(3)	
GRAR 215	Fundamentals of Computer Graphics	(3)	
GRAR 221	Layout and Design	(3)	
GRAR 301	Computer Illustration	(3)	
GRAR 305	Graphic Design for Web Pages	(3)	
GRAR 320	Letterforms and Typography	(3)	
GRAR 337	Applied Illustration	(3)	
GRAR 338	Advertising Design I	(3)	
GRAR 450	Corporate Design	(3)	
GRAR 493	Portfolio Construction	(3)	
GRAR 499	Internship	(3)	

1. Additional expenses
   Approximately $100.00 is required for materials and equipment in addition to the cost of textbooks.

2. In an effort to meet industry standards, Macintosh computers are used exclusively in all computer-based GRAR courses Majors are strongly advised to consider purchasing a Macintosh and related print publication software for personal use.

3. Progression requirements: All graphic art courses must be taken in sequence. All required 200 level courses must be completed before 300 level courses may be taken. All required 300 level courses must be completed before 400 level courses may be taken.
4. Admission into the program after the sophomore year will be contingent upon the student's satisfying the following requirements:
   a) Completion of Graphic Art Admission Application Form
   b) Completion of ARTE 101 Two Dimensional Design, ARTE 102 Three Dimensional Design, ARTE 151 Basic Drawing, GRAR 215 Fundamentals of Computer Graphics, and GRAR 221 Graphic Layout and Design, with a grade of B or A.
   c) 3.00 GPA or better in the major.
   d) Successful completion of a Graphic Art entrance exam with a minimum grade of 80%.

Music

Required courses: 46

MUSA 111	Music Technology I	(1)	
MUSA 112	Music Technology II	(1)	
*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	(3)	
MUSA 215	Theory IV	(3)	
MUSA 250	Beginning Conducting	(2)	
MUSA 302	Keyboard Literature, <u>or</u>		
MUSA 303	Symphonic Literature <u>or</u>		
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)	
MUSP 420	Senior Recital	(2)	
MUSL XXX	Music Lessons (2 cr hrs from each level 1-4)	(8)	
MUSP XXX	Music Performance (2 cr hrs from each level 1-4) (3 hours counted in General Education)	(8)	5

Options:

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

Music Education K-12
Music Performance: Instrumental
Music Performance: Keyboard
Music Performance: Vocal

Students who choose an option in Music Education should see their faculty advisors in both Music and in Teacher Licensure and refer to the program sheets detailing requirements.

1. Special requirements
   Each music student must attend weekly recitals and required concerts and pass basic proficiencies, undergo a sophomore review, and successfully complete a public senior recital after completing all other required music lessons and courses.

2. Additional expenses
   Approximately $100.00 is required for materials and equipment in addition to the cost of textbooks.

Music Theatre

Required courses: 58

DANC 161	Theory and Practice of Ballet **or**	
DANC 170	Theory and Practice Modern Dance **or**	
DANC 175	Theory and Practice Modern Jazz Dance **or**	
DANC 178	Theory and Practice Tap Dance	(1)
DANC 253	Beginning Improvisation and Composition in Dance	(3)
DANC 271	Principles of Modern Dance **or**	
DANC 277	Principles of Ballet	(2)
DANP XXX	DANP Electives (2 credit hours upper division)	(3)
MUSA 113	Fundamentals of Theory	(3)
MUSA 116	Ear Training and Sightsinging I	(2)
MUSA 117	Ear Training and Sightsinging II	(2)
MUSA 130	Class Piano I	(2)
MUSA 131	Class Piano II	(2)
MUSL 137	Applied Lessons: Voice	(2)
MUSL 237	Applied Lessons: Voice	(2)
MUSL 337	Applied Lessons: Voice	(2)
MUSL 437	Applied Lessons: Voice	(1)
MUSP XXX	Choir Ensembles (2 credit hours upper division)	(6)
MUSP 420	Senior Recital	(2)
THEA 117 **or** 118	Play Production	(1)
THEA 151	Acting I: Beginning Acting	(3)
THEA 152	Acting II: Stage Movement	(3)
THEA 270	Music Theatre Performance Workshop	(2)
THEA 270L	Music Theatre Performance Workshop Lab	(1)
THEA 341	Music Theatre History and Literature	(3)
THEA 352	Acting V: Styles in Acting	(3)
THEA 370	Music Theatre Performance Workshop	(2)
THEA 370L	Music Theatre Performance Workshop Lab	(1)
THEA 401	Performing Arts Management **or**	
THEA 451	Directing I	(3)

*MUSA 110 (Notation) required first if deficiency occurs

Other requirements: 3

DANP XXX	Repertory Dance **or**	
THEA 147 or 148	Drama Performance	(1)
DANP XXX	Repertory Dance **or**	
MUSP XXX	Choir Ensemble **or**	
THEA 117 or 118	Play Production **or**	(1)
THEA 120	Technical Performance	(1)
MUSL 437	Voice **or**	
DANP XXX	Upper Division DANP Elective	(1)

Special Requirements and Recommendations:
Each Music Theatre student must audition for and, if cast, appear in two musicals during the regular academic year. See advisor for additional recommendations.

Theatre

Required courses: 18

THEA 117 or 118	Play Production	(1)
THEA 217 or 218	Play Production	(1)
THEA 151	Acting I: Beginning Acting	(3)
THEA 317 or 318	Play Production	(1)
THEA 331	History of Theatre: 400 B.C. to 1642	(3)
THEA 401	Performing Arts Management	(3)
THEA 451	Directing I	(3)
THEA 322	Stage Management **or**	

THEA 380	Playwriting	(3)	

Options 36

Specific courses are required for options available under this degree.

Acting/Directing

Design/Technical

Choose three hours from courses listed in Acting/Directing Program Sheets.

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

1. Additional expenses
   Approximately $100.00 in addition to the cost of textbooks may be required for purchase of supplies and materials.

HISTORY

School of Humanities and Social Science

Bachelor of Arts

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

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

2. Requirements specific to this degree

a. Required courses			15
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:			21
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 350	Renaissance and Reformation	(3)	
HIST 360	Medieval Europe	(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 Early American Republic	(3)	
HIST 344	The Age of Industry in America	(3)	
HIST 346	History of Modern America	(3)	
HIST 370	U.S. Women's History I	(3)	
HIST 371	U.S. Women's History II	(3)	
HIST 415	Colonial America	(3)	
HIST 416	The American Revolution	(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 315	American Indian History	(3)	
HIST 320	The American West	(3)	
HIST 332	History of Modern Warfare	(3)	
HIST 355	Ancient and Medieval Cities	(3)	
HIST 405	Introduction to Public History	(3)	
HIST 410	Environmental History	(3)	
HIST 435	Classical Archaeology	(3)	
HIST 440	Early and Medieval Christianity	(3)	
Three additional courses must be selected from the four areas listed above.		(9)	
9 upper division credit hours selected from the following disciplines: Anthropology, Economics, English, Literature, Philosophy, Political Science, Psychology, and Sociology			9

b. Options
History for Secondary Education track – See faculty advisor for complete requirements for this option.

c. See faculty advisor 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
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 Business and Professional Studies

Bachelor of Arts

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

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

2. Requirements specific to this degree

a. Required courses			34
BIOL 141	Human Anatomy and Physiology	(3)	
BIOL 141L	Human Anatomy and Physiology Lab	(2)	
HPWA 200	History and Philosophy of Human Performance	(3)	
HPWA 213	Methods of Physical Fitness	(2)	
HPWA 233	Methods of Weight Training	(1)	
HPWA 234	Prevention and Care of Athletic Injuries	(3)	
HPWA 260	School and Personal Health	(3)	
HPWA 301	Tests and Measurements	(3)	
HPWA 309	Anatomical Kinesiology	(3)	
HPWA 360	Motor Learning	(3)	
HPWA 370	Biomechanics	(2)	
HPWA 370L	Biomechanics Lab	(1)	
HPWA 303	Exercise Physiology	(3)	
HPWA 303L	Exercise Physiology Lab	(1)	
HPWA 494	Senior Seminar (Capstone)	(1)	
b. Concentrations – see below (students must choose one)			26-33

c. Electives (unrestricted) 11-18
If desired, a student may use electives to satisfy requirements for a minor.

d. Special requirements
Red Cross Standard First Aid/CPR certification is required.

CONCENTRATIONS
Bachelor of Arts
HUMAN PERFORMANCE AND WELLNESS

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

Requirements vary, depending upon the concentration selected. See faculty advisor 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 advisors in both Human Performance and Wellness and Teacher Licensure.

Beginning January 1, 2004, the National Athletic Trainers Association Board of Certification (NATABOC) will only allow students who have graduated from a Commission on Accreditation of Allied Health Education Programs (CAAHEP) accredited Athletic Training Education Program (ATEP) to take the NATABOC national certification exam. The ATEP at Mesa State College (MSC) is currently seeking accreditation through CAAHEP. The MSC ATEP is officially recognized as being in candidacy status through the Joint Review Committee on Educational Programs in Athletic Training (JRC-AT). However, candidacy status does not guarantee CAAHEP accreditation. To obtain official acceptance requirements for admittance into the ATEP please contact the ATEP Curriculum Director (CD) or visit the ATEP website. Students may choose the Athletic Training concentration as a freshman; however, they will only be allowed to start field experience hours (observational and provisional athletic training student status) after they have taken HPWA 234 and have completed their freshman year. Please see the ATEP website for definitions of observational and provisional athletic training students. There is an annual spring application deadline (March 1) to be considered for official admission into the ATEP. Please see the ATEP CD to obtain an application. If accepted, students begin the academic program the next fall. The application process is competitive and acceptance is not guaranteed. Students will be notified by March 15 whether or not they have been accepted into the program. If there is space available, applications may be considered on an individual basis throughout the year. The following requirements must be completed before students may apply for official acceptance to the ATEP.

1. Prerequisite Course Requirements (Grade "C" or higher required)
   a) HPWA 100
   b) HPWA 200
   c) HPWA 234
   d) HPWA 260
   e) BIOL 141, 141L
2. Minimum GPA of 2.5
3. Students must accumulate 200 hours of experience in the Mesa State College Athletic Training Room and reach the class C Provisional athletic training student classification. Transfer students must have 200 hours of experience under the direct supervision of a Certified Athletic Trainer and possess the skills and knowledge required to achieve the Class C Provisional athletic training student classification.

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 for Baccalaureate Degree (minimum 33 credit hours)	33
b. B.A. Degree Distinction (Foreign Language)	6
c. Human Performance and Wellness	3

2. Requirements specific to this degree

Interdisciplinary Core				**36/33**
Literacy (9 hours)			**9**	
ENGL 240	Children's Literature	(3)		
ENGL 343	Language and Literacy	(3)		
ENGL 245	Imaginative Writing	(3)		
Math (6 Hours/3 Hours)				
For Elementary Education Candidates			**6**	
MATH 105*	Elements of Mathematics I	(3)		
MATH 301	Mathematics for Elementary Teachers	(3)		
For Non-Elementary Education Candidates			**3**	
Social Science (9 hours)			**9**	
POLS 101	American Government	(3)		
ECON 201	Principles of Macroeconomics	(3)		
HIST 225	History of Colorado	(3)		
Fine Art (3 Hours)			**3**	
For Elementary Education Candidates				
ARTE 410	Elementary Art Education Methods	(3)		
For Non-Elementary Education Candidates				
ARTE 118	Survey of Art History	(3)		
Human Performance and Wellness (3 Hours)			**3**	
For Elementary Education Candidates				
HPWA 320	Elementary School Physical Education	(3)		
For Non-Elementary Education Candidates				
HPWA 350	Motor Development	(3)		
Science (6 Hours)			**6**	
CHEM 100	Chemistry and Society	(3)		
GEOL 100	Survey of Earth Sciences	(3)		
CONTENT AREAS – Choose one content area (15 Hours for each Discipline)				
ENGLISH (15 Hours)			**15**	
Two Courses Required:				
ENGL 440	History of the English Language	(3)		
ENGL 451	Structure of the English Language (Capstone Course)	(3)		
To fill the remaining 9 hours students would choose one of the following "paths":				
World Literatures			**9**	
Writing			**9**	
American Literature			**9**	
British Literature			**9**	

At least 6 hours must be Upper Division. See departmental program sheet for specific course choices.

SOCIAL SCIENCE (15 Hours)			**15**
HIST 102	Western Civilizations	(3)	
ANTH 201	Cultural Anthropology	(3)	
POLS 236	State and Local Government	(3)	
Followed by 6 hours chosen from:			
ANTH 410	World Cultures	(3)	
HIST 415	Colonial America	(3)	
HIST 416	The American Revolution	(3)	
HIST 342	The Early American Republic	(3)	
HIST 420	Civil War and Reconstruction	(3)	
MATHEMATICS (15 Hours)			**15**
STAT 200	Probability and Statistics	(3)	
CSCI 110	Beginning Programming	(3)	
MATH 151	Calculus I	(5)	
or			
MATH 146	Calculus for Biological Sciences	(5)	
MATH 294	Mathematics Colloquium	(1)	
Choose one from the following list:			
MATH 369	Discrete Structures	(3)	
MATH 305	Euclidean Geometry	(3)	
MATH 311	Statistical Methods	(3)	
*MATH 105 and MATH 205 will be replaced by MATH 105 Honors and MATH 205 Honors for Elementary Education candidates who are choosing the Mathematics content area.			
Required Education Courses (For Education Candidates)			**34**
EDUC 211	Introduction to Teaching	(2)	
EDUC 340			
or 341	Pedagogical/Assessment Knowl/ Teachers	(3)	
EDUC 343	Teaching to Diversity	(3)	
EDUC 440			
or 441	Methods of Teaching Language and Literacy	(4)	
EDUC 451	Methods of Teaching Mathematics	(4)	
EDUC 452	Methods of Teaching Science and Health	(3)	
EDUC 453	Methods of Teaching Social Science	(3)	
EDUC 499	Internship (Student Teaching)	(12)	
Elective Hours (For non-Education candidates)			**30**

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 minimum credit hours)	33
b. B.A. Distinction (Foreign Language)	6
c. Human Performance and Wellness	3

2. Requirements specific to this degree

a. Required courses			24
MASS 110	Mass Media in America	(3)	
MASS 201	News Writing and Reporting	(3)	
MASS 320	Photojournalism	(3)	
MASS 397	Practicum	(1)	

MASS 480	Journalism Law and Ethics	(3)	
MASS 494	Seminar	(3)	
MASS 499	Internship	(8)	

b. Concentrations – see below (students must choose one) 18

c. Electives (unrestricted) 36

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

3. Special requirements

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 110 and MASS 201) 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

Media News
Broadcast Production
Public Relations
Print Media

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

MATHEMATICS

School of Natural Sciences 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			34
b. B.S. Distinction (Math/Statistics/Computer Science)			6
STAT 200	Probability and Statistics	(3)	
CSCI 111	Computer Science I	(3)	
c. Human Performance and Wellness			3

2. Requirements specific to this degree

a. Required courses			42-44
MATH 151	Calculus I	(5)	
MATH 152	Calculus II	(5)	
MATH 240	Intro to Advanced Mathematics	(3)	
MATH 253	Calculus III	(4)	
MATH 325	Linear Algebra I	(3)	
MATH 452	Advanced Calculus I	(3)	
MATH 490	Abstract Algebra I	(3)	
MATH 453	Advanced Calculus II or		
MATH 491	Abstract Algebra II	(3)	
MATH 494	Senior Seminar	(1)	
Four courses from the following list*:			
MATH 260	Differential Equations	(3)	

MATH 310	Number Theory	(3)
MATH 360	Methods of Applied Math	(3)
MATH 361	Numerical Analysis	(4)
MATH 365	Mathematical Modeling	(3)
MATH 369	Discrete Structures I	(3)
MATH 370	Discrete Structures II	(3)
MATH 386	Geometries	(4)
MATH 420	Introduction to Topology	(3)
MATH 450	Complex Variables	(3)
MATH 460	Linear Algebra II	(3)
MATH 453	Advanced Calculus II or	
MATH 491	Abstract Algebra II	(3)
STAT 311	Statistical Methods	(3)
MATH 396	Topics **or**	
MATH 496	Topics	(3)

*NOTE: At most, one Topics class, which must be 3 credit hours, can be used as one of these four courses.

b. Concentrations – see below

c. Electives (unrestricted) 32-37
If desired, a student may use electives to satisfy requirements for a minor.

d. No more than one "D" may be used in completing major requirements, and a GPA of at least 2.50 in the major is required.

3. Additional expenses
Graphing calculator is recommended for several mathematics and statistics courses. See department for recommended models.

CONCENTRATIONS
Bachelor of Science
MATHEMATICS

Computational Science
Statistics
Mathematics with Teaching (Secondary)

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

Students seeking a degree in Mathematics with secondary teaching should see their faculty advisors in both Mathematics and Teacher Licensure.

NURSING

School of Business and Professional Studies

Bachelor of Science (B.S.N.)

1. Baccalaureate graduation requirements (for further information, see section on *Degree Requirements* in this catalog)
Please work closely with an advisor in the planning of program requirements.

		Cr. Hrs.
a. General Education		34
Required General Education Courses		
PSYC 150	General Psychology	(3)
PSYC 233	Human Growth and Development	(3)

b. B.S. Distinction (Math, Statistics and Computer Science) 6-7

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 75-76

BIOL 141, 141L	Human Anatomy and Physiology and Lab	(5)
BIOL 241	Pathophysiology	(4)
BIOL 250, 250L	Introduction to Medical Microbiology and Lab	(5)
NURS 201, 201L	Nursing Fundamentals and Lab	(5)
NURS 202, 202L	Health Assessment/Promotion	(4)
NURS 203	Nursing Pharmacology	(2)
NURS 204	Theories and Research	(3)
NURS 301, 301L	Medical/Surgical Process and Lab	(7)
NURS 302, 302L	Family Nursing Through the Lifespan and Lab	(4)
NURS 303	Leadership Development	(1)
NURS 311, 311L	Advanced Medical/Surgical and Lab	(6)
NURS 312	Home Health Nursing	(2)
NURS 313, 313L	Mental Health and Lab	(4)
NURS 401, 401L	The Childbearing Family and Lab	(4)
NURS 402, 402L	Pediatrics and Lab	(3)
NURS 403, 403L	Public Health and Lab	(3)
NURS 404	Business of Health Care	(3)
NURS 411, 411L	Leadership and Lab	(3)
NURS 412L	Senior Specialty	(3)
NURS 414	Senior Research Project	(1)
NURS 496	Topics	(2)

b. There are no concentrations available under this major.

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

d. Electives (upper division) 2

1) Upper division NURS courses (2)

2) Additional nursing course required for advanced placements: for RN's and LPN's (consult advisor for requirements)

NURS 300 Professional Transitions (3)

3. Special requirements

The B.S.N. 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: High school courses in biology, chemistry and algebra are recommended. All non-nursing college courses must be completed before a student can be admitted to the B.S.N. program. An admission committee selects students from applicants who best meet requirements. In addition, anatomy and physiology and microbiology, each with the lab, and a math course at least at college algebra level are required for admission into the program. All admission materials must be on file in the office of the Nursing Department prior to September 15 for spring entrance, or prior to February 15 for fall entrance.

b. A separate application for advanced placement is required. 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 course specifically designed for RNs entering the program for degree completion.

c. Students transferring in credit for human anatomy and physiology and/or microbiology courses taken at out-of-state 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 must be completed before 300 level nursing courses may be taken. 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.

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 five year requirement is waived for RN's who have been working in the nursing field since taking courses. The final approval for all accepted support course requirements and/or challenge examination will be made by the Department of Nursing and Radiologic Sciences.

4. Additional expenses
Students will be required to purchase additional supplies and material (e.g., medical equipment and uniforms). Approximate cost will be $300-$500. See advisor for specific requirements.

PHYSICAL SCIENCES

School of Natural Sciences 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	34
b. B.S. Distinction (Math/Computer Science)	7-10
(1) In Chemistry, the degree distinction should be satisfied by taking Calculus I and II (MATH 151, 152) for 10 credit hours.	
(2) In Geology, the degree distinction should be satisfied by taking Calculus I (MATH 151) and Probability and Statistics (STAT 200) for 8 credit hours.	
(3) In Applied Physics and 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)	50-59
(b) Electives (unrestricted)	14-29

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, biology and geology. 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

Chemistry

52

Required courses:

CHEM 131, 131L	General Chemistry & Lab	(5)
CHEM 132, 132L	General Chemistry & Lab	(5)
CHEM 211, 211L	Quantitative Analysis & Lab	(4)
CHEM 311, 311L	Organic Chemistry & Lab	(5)
CHEM 312, 312L	Organic Chemistry & Lab	(5)
CHEM 321	Physical Chemistry I	(3)
CHEM 322	Physical Chemistry II	(3)
CHEM 341	Advanced Laboratory I	(2)
MATH 253	Calculus III	(4)
PHYS 131	Fundamental Mechanics	(4)
PHYS 132, 132L	Electromagnetism & Optics & Lab	(5)

In addition, 7 credit hours chosen from the following restricted electives are required:

CHEM 315, 315L	Biochemistry & Lab	(4)
CHEM 396	Topics	(3)
CHEM 411	Main Group Elements	(3)
CHEM 412	Transition Elements	(3)
CHEM 421	Advanced Organic Chemistry I	(3)
CHEM 422	Advanced Organic Chemistry II	(3)
CHEM 431, 431L	Instrumental Analysis **and** lab	(4)
CHEM 482	Senior Research I **and**	(2)
CHEM 483	Senior Research II	(2)
CHEM 496	Topics	(3)

Geology

58

Required courses:

GEOL 111, 111L	Principles of Physical Geology and Lab **or**	
GEOL 113, 113L	Field-Based Intro to Physical Geology and Lab	(4)
GEOL 112, 112L	Principles of Historical Geology and Lab	(4)
GEOL 250	Environmental Geology	(3)
GEOL 301, 301L	Structural Geology and Lab	(4)
GEOL 331, 331L	Crystallography & Mineralogy and Lab	(4)
GEOL 340, 340L	Igneous & Metamorphic 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 (Secondary)

Students who want an option in **Geology with Teaching** should see their faculty advisors, both in Geology and Teacher Licensure.

Applied Physics

59

Required courses:

ENGR 105	Engineering Drawing	(3)
ENGR 251	Circuit Analysis I	(3)
ENGR 251L	Circuit Analysis I Laboratory	(1)

ENGR 255	Thermodynamics	(3)
ENGR 261	Statics and Dynamics I	(3)
ENGR 262	Statics and Dynamics II	(3)
PHYS 131	Fundamental Mechanics	(4)
PHYS 131L	Fundamental Mechanics Lab	(1)
PHYS 132	Electromagnetism and Optics	(4)
PHYS 132L	Electromagnetism and Optics Lab	(1)
PHYS 231	Modern Physics	(3)
PHYS 311	Electromagnetic Theory I	(3)
PHYS 321	Quantum Theory I	(3)
PHYS 331	Advanced Laboratory I	(2)
PHYS 332	Advanced Laboratory II	(2)
PHYS 362	Statistical and Thermal Physics	(3)
PHYS 421	Advanced Dynamics	(3)
PHYS 482	Senior Research (taken twice)	(2)
PHYS 494	Seminar (taken twice)	(2)
Required Mathematics Courses		
MATH 253	Calculus III	(4)
MATH 260	Differential Equations	(3)
MATH 360	Methods of Applied Mathematics	(3)

Physics

Required courses:			53
ENGR 251	Circuit Analysis I	(3)	
ENGR 251L	Circuit Analysis I Lab	(1)	
PHYS 131	Fundamental Mechanics	(4)	
PHYS 131L	Fundamental Mechanics Lab	(1)	
PHYS 132	Electromagnetism and Optics	(4)	
PHYS 132L	Electromagnetism and Optics Lab	(1)	
PHYS 231	Modern Physics	(3)	
PHYS 311	Electromagnetic Theory I	(3)	
PHYS 321	Quantum Theory I	(3)	
PHYS 322	Quantum Theory II	(3)	
PHYS 331	Advanced Laboratory I	(2)	
PHYS 332	Advanced Laboratory II	(2)	
PHYS 362	Statistical and Thermal Physics	(3)	
PHYS 421	Advanced Dynamics	(3)	
PHYS 473	Modern Optics	(3)	
PHYS 482	Senior Research (taken twice)	(2)	
PHYS 494	Seminar (taken twice)	(2)	
Required Mathematics Courses			
MATH 253	Calculus III	(4)	
MATH 260	Differential Equations	(3)	
MATH 360	Methods of Applied Mathematics	(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 advisors, both in Physics and Teacher Licensure.

Requirements may vary according to the concentration and option selected. See faculty advisor 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

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

			Cr. Hrs.
a. General Education (minimum 33 credit hours)			33
b. B.A. Distinction (Foreign Language)			6
c. Human Performance and Wellness			3
2. Requirements specific to this degree			
a. Political Science Core			39
POLS 101	American Government	(3)	
POLS 236	State and Local Government	(3)	
POLS 261	Comparative Politics	(3)	
POLS 324	The Legislative Process	(3)	
POLS 325	The American Presidency	(3)	
POLS 342	Public Administration	(3)	
POLS 370	World Politics	(3)	
POLS 412	Constitutional Law	(3)	
POLS 452	Political Theory: Classical/Medieval or	(3)	
POLS 453	Political Theory: Modern		
POLS 475	American/Foreign National Security	(3)	
POLS 490	Senior Seminar: Political Science	(3)	
SOCI 310	Methods of Social Research	(3)	
STAT 200	Probability and Statistics	(3)	
b. Political Science Electives, Select From			9
POLS 310	Development of U.S. Constitution	(3)	
POLS 328	The American Court System	(3)	
POLS 352	Religion and Politics	(3)	
POLS 355	Politics in the Information Age	(3)	
POLS 365	European Government and Politics	(3)	
POLS 413	Civil Liberties	(3)	
POLS 452	Political Theory: Classical and Medieval or (if not used in core)	(3)	
POLS 453	Political Theory: Modern (if not used in core)		
POLS 488	Environmental Politics and Policy	(3)	
POLS 499	Political Science Internship	(3)	
Recommend: 9 upper division credit hours selected from the following disciplines: (Credit hours included in General Electives below) Anthropology, Economics, History, Philosophy, Psychology, or Sociology.			*9
b. Concentrations – see below			
c. See faculty advisor for a program sheet detailing exact and complete requirements for the major.			
d. *Electives If desired, a student may use electives to satisfy requirements for a minor.			30

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 advisor 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 (minimum 33 credit hours)	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 150	General Psychology	(3)
***PSYC 311	Quantitative Research **or**	
***SOCI 310	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)

24 upper division credit hours selected from the following:

ANTH 340	Ethnopsychology	(3)
PSYC 310	Child Psychology	(3)
PSYC 325	Environmental Psychology	(3)
PSYC 330	Psychology of Adolescents and Young Adults	(3)
PSYC 335	Psychology of Women	(3)
PSYC 340	Abnormal Psychology	(3)
PSYC 350	Psychology of Adulthood	(3)
PSYC 360	Sport Psychology	(3)
PSYC 370	Cross-Cultural Psychology	(3)
PSYC 395	Independent Study	(1-3)
PSYC 396	Topics	(1-3)
PSYC 400	Psychological Testing	(3)
PSYC 410	Drugs and Human Behavior	(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)

***If not used in the Psychology Core, one of the following may be a choice as a Psychology Elective:

SOCI 310	Methods of Social Research **or**	3
PSYC 311	Quantitative Research Methods	3

b. Concentrations – see below

c. Electives — 31

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

3. Special requirements

a. 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 150, General Psychology
STAT 200, Probability and Statistics

b. Students must receive a grade of "C" or better in all core or concentration courses required for the major.
c. Failure to attain a grade of "C" or better in any core or concentration course required for the major within three attempts, will result in expulsion from the program.

CONCENTRATIONS
Bachelor of Arts
PSYCHOLOGY

Counseling Psychology
Requirements may vary if a concentration is selected. See faculty advisor 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 (minimum 33 credit hours)	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

HIST 101	Western Civilizations	(3)
HIST 102	Western Civilizations	(3)
HIST 131	United States History	(3)
HIST 132	United States History	(3)
GEOG 103	World Regional Geography	(3)
ANTH 201	Cultural Anthropology	(3)
POLS 101	American Government	(3)
POLS 261	Comparative Politics	(3)
PSYC 150	General Psychology	(3)
ECON 201	Principles of Macroeconomics	(3)
SOCO 260	General Sociology	(3)

International subject to be selected from (cannot be from Primary Area) (not required in ed. track): 3
ANTH 390, ANTH 405, ANTH 410, HIST 331, HIST 332, HIST 340, HIST 400, HIST 403, POLS 365, POLS 370

b. Required Primary and Secondary areas of study — 27-28
   (1) Primary and Secondary requirements
   Select one Primary area Track and one Secondary area of study from the following academic disciplines: Anthropology, Economics (secondary only), History, Political Science, Psychology, or Sociology.
   (2) Primary area Track requirements:
   18-19 credit hours in the discipline selected, 15 of which are upper division. Only courses offered under the selected discipline track 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 advisor for a program sheet detailing exact and complete requirements for the major.
d. Electives — 14-15

Students will take the exit exam in the Primary Area, with the exception of Anthropology, which does not have an exit exam.

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

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 (minimum 33 credit hours)	33
b.	B.A. Distinction (Foreign Language)	6
c.	Human Performance and Wellness	3

2. Requirements specific to this degree

a.	Sociology Core			21
	SOCO 260	General Sociology	(3)	
	SOCO 264	Social Problems	(3)	
	SOCO 400	Classical Social Theory	(3)	
	SOCO 410	Contemporary Social Theory	(3)	
	STAT 200	Probability and Statistics	(3)	
	ANTH 201	Cultural Anthropology	(3)	
	SOCI 310	Methods of Social Research	(3)	
b.	Sociology Electives: Select 18 upper division hours from the following:			18
	ANTH 390	Ethnic Groups	(3)	
	ANTH 405	Globalization and Culture Change	(3)	
	SOCO 300	Political Sociology	(3)	
	SOCO 305	Environmental Sociology	(3)	
	SOCO 310	Sociology of Religion	(3)	
	SOCO 312	Collective Behavior and Social Movements	(3)	
	SOCO 314	Population	(3)	
	SOCO 316	Social Inequality	(3)	
	SOCO 320	Life Course Sociology	(3)	
	SOCO 330	Crime and Delinquency	(3)	
	SOCO 340	Sex and Gender	(3)	
	SOCO 350	Sociology of Death and Dying	(3)	
	SOCO 360	Social Influences of Small Groups	(3)	
	Or any other upper division Sociology Elective approved by a Sociology Advisor			
c.	Restricted Electives: Select 9 upper division hours from:			9
	ANTH 310	Ethnographic Methods	(3)	
	ANTH 330	Religion and Culture	(3)	
	ANTH 410	World Cultures	(3)	
	SOCO 301	Introduction to Human Services	(3)	
	PSYC 320	Social Psychology	(3)	
	Or any upper division course from the following disciplines: Economics, History, or Political Science		(3)	
d.	Concentrations - see below			
e.	Electives			30
	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 advisor for a program sheet detailing exact and complete requirements for the major and concentration chosen.

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 can be counted toward the minor. (Double counting may not occur between general education and course requirements specific to a major). The number of minors a student may receive at Mesa State College shall not exceed two.

At least 33 percent of the credit hours required for the minor must be in courses numbered 300 or above. A GPA of 2.00 or higher in the minor is required.

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
Accounting	Business and Professional Studies
Administration of Justice	Humanities and Social Sciences
Anthropology	Humanities and Social Sciences
Art	Humanities and Social Sciences
Art History	Humanities and Social Sciences
Athletic Training	Business and Professional Studies
Biology	Natural Sciences and Mathematics
Business Administration	Business and Professional Studies
Chemistry	Natural Sciences and Mathematics
Classical Studies	Humanities and Social Sciences
Coaching	Business and Professional Studies
Computer Information Systems	Business and Professional Studies
Computer Science	Natural Sciences and Mathematics
Corporate Fitness	Business and Professional Studies
Dance	Humanities and Social Sciences
Economics	Business and Professional Studies
English (Literature or Writing)	Humanities and Social Sciences
Environmental Science and Technology	Natural Sciences and Mathematics
Geographic Information Systems	Natural Sciences and Mathematics
Geology	Natural Sciences and Mathematics
Graphic Art	Humanities and Social Sciences
History	Humanities and Social Sciences
Mass Communications	Humanities and Social Sciences
Mathematics	Natural Sciences and Mathematics
Music (Instrumental or Vocal)	Humanities and Social Sciences
Personal Training	Business and 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
Spanish	Humanities and Social Sciences
Speech	Humanities and Social Sciences
Theatre	Humanities and Social Sciences
Travel, Tourism, and Commercial Recreation Mgmt.	Business and Professional Studies

ASSOCIATE DEGREES 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 Completion.

Associate of Arts (A.A.)
- Administrative Office Technology
- Business Administration
- Business Computer Information Systems
- Early Childhood Education
- Humanities
- Social Science

Associate of Science (A.S.)
- Biology
- Computer Science
- Electronics Engineering Technology
- Engineering
- Geology
- Manufacturing Technology
- Mathematics
- Physics

Administrative Office Technology (A.A.S.)
- Accounting Technician
- Administrative Secretary
- Legal Secretary
- Medical Secretary

Communications Technology Cluster (A.A.S.)
- Telecommunications Engineer

Criminal Justice (A.A.S.)

Culinary Arts (A.A.S.)

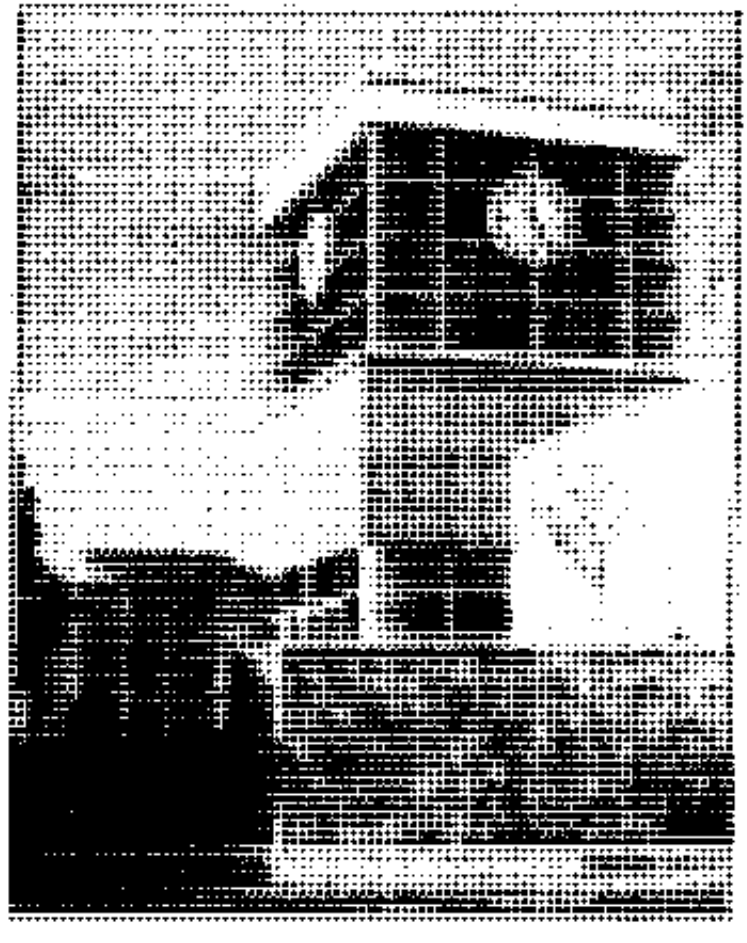
Electronics Technology (A.A.S.)

Environmental Restoration Engineering Technology (A.A.S.)

Manufacturing Technology Cluster (A.A.S.)
- Computer Aided Design Technology
- Machine Technology
- Welding

Radiologic Technology (A.A.S.)

Transportation Services Cluster (A.A.S.)
- Automotive Technology
- Diesel Technology



ADMINISTRATIVE OFFICE TECHNOLOGY

School of Applied Technology

Associate of Arts

1. Associate of Arts graduation requirements (for further information, see section on *Degree Requirements* in this catalog)
   Minimum credit hours required: 60

			Cr. Hrs.
a.	General Education for Associate Degree*		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		12
a.	Required business courses		
	ACCT 201 Principles of Financial Accounting	(3)	
	BUGB 211 Business Communications	(3)	
	CISB 101 Business Information Technology	(3)	
	MANG 201 Principles of Management	(3)	
b.	Required emphasis courses		
	OFAD 153 Beginning Word Processing	(2)	
	OFAD 201 Office Management	(3)	
	OFAD 202 Records Management	(2)	
	OFAD 253 Intermediate Word Processing	(2)	
3.	Electives		3

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

*No substitutions can be made from the general education common core.

ADMINISTRATIVE OFFICE TECHNOLOGY: ACCOUNTING TECHNICIAN

School of Applied Technology

Associate of Applied Science

1. Course requirements for this degree
   Minimum credit hours required: 64

			Cr. Hrs.
a.	ENGL 111 and 112		6
	Social and Behavioral Science, Humanities, and Applied Studies		6
	UTEC 107 Mathematics for Technology		4
b.	Human Performance and Wellness		2
	HPWA 100 Health and Wellness	(1)	
	HPWE XXX Aerobic/Fitness Activity	(1)	
c.	All of the following courses		46
	Required business courses		
	ACCT 201 Principles of Financial Accounting	(3)	
	ACCT 202 Principles of Managerial Accounting	(3)	

BUGB 211	Business Communications	(3)
BUGB 231	Survey of Business Law	(3)
CISB 101	Business Information Technology	(3)
CISB 205	Advanced Business Software	(3)
MANG 121	Human Relations in Business	(3)
MANG 221	Supervisory Concepts & Practices	(3)
OFAD 101	Office Accounting	(3)
OFAD 105	Ten-Key Operations	(1)
OFAD 201	Office Management	(3)
OFAD 202	Records Management	(2)
OFAD 153	Beginning Word Processing	(2)
OFAD 253	Intermediate Word Processing	(2)
OFAD 206	Computerized Office Accounting	(3)
OFAD 270	Integrated Office Applications	(3)
OFAD 293	Cooperative Education	(3)

2. See faculty advisor for a program sheet detailing exact and complete requirements for this degree.

ADMINISTRATIVE OFFICE TECHNOLOGY: ADMINISTRATIVE SECRETARY

School of Applied Technology

Associate of Applied Science

1. Course requirements for this degree
   Minimum credit hours required: 60

			Cr. Hrs.
a.	ENGL 111 and 112		6
	Social and Behavioral Sciences, Humanities, and Applied Studies		6
	UTEC 107 Mathematics for Technology		4
b.	Human Performance and Wellness		2
c.	All of the following courses		
	(1) Required business courses		15
	BUGB 211 Business Communications	(3)	
	BUGB 231 Survey of Business Law	(3)	
	CISB 101 Business Information Technology	(3)	
	MANG 121 Human Relations in Business	(3)	
	MANG 221 Supervisory Concepts & Practices	(3)	
	(2) Required office administration courses		24
	OFAD 101 Office Accounting	(3)	
	OFAD 153 Beginning Word Processing	(2)	
	OFAD 201 Office Management	(3)	
	OFAD 202 Records Management	(2)	
	OFAD 221 Transcription Machines	(3)	
	OFAD 253 Intermediate Word Processing	(2)	
	OFAD 266 Advanced Word Document Production	(3)	
	OFAD 270 Integrated Office Applications	(3)	
	OFAD 293 Cooperative Education	(3)	
2.	Electives		3

3. See faculty advisor for a program sheet detailing exact and complete requirements for this degree.

ADMINISTRATIVE OFFICE TECHNOLOGY: LEGAL SECRETARY

School of Applied Technology

Associate of Applied Science

1. Course requirements for this degree
   Minimum credit hours required: 60

			Cr. Hrs.
a.	ENGL 111 and 112		6
	Social and Behavioral Science, Humanities, and Applied Studies		6
	UTEC 107 Mathematics for Technology		4
b.	Human Performance and Wellness		2
c.	All of the following courses		15
	(1) Required business courses		
	BUGB 211 Business Communications	(3)	
	BUGB 231 Survey of Business Law	(3)	
	CISB 101 Business Information Technology	(3)	
	MANG 121 Human Relations in Business	(3)	
	MANG 221 Supervising Concepts and Practices	(3)	27
	(2) Required office administration courses		
	OFAD 101 Office Accounting	(3)	
	OFAD 153 Beginning Word Processing	(2)	
	OFAD 201 Office Management	(3)	
	OFAD 202 Records Management	(2)	
	OFAD 223 Transcription Machines	(3)	
	OFAD 244 Legal Office Procedures	(3)	
	OFAD 253 Intermediate Word Processing	(2)	
	OFAD 266 Advanced Word Processing	(3)	
	OFAD 270 Integrated Office Applications	(3)	
	OFAD 293 Cooperative Education	(3)	

2. See faculty advisor for a program sheet detailing exact and complete requirements for this degree.

ADMINISTRATIVE OFFICE TECHNOLOGY: MEDICAL SECRETARY

School of Applied Technology

Associate of Applied Science

1. Course requirements for this degree
   Minimum credit hours required: 65

		Cr. Hrs.
a.	ENGL 111 and 112	6
	Social and Behavioral Science, Humanities, and Applied Studies	6
	UTEC 107 Mathematics for Technology or MATH 113 College Algebra	4
b.	Human Performance and Wellness	2
c.	All of the following courses:	
	(1) Required business courses	12

BUGB 211	Business Communications	(3)	
BUGB 231	Survey of Business Law	(3)	
MANG 121	Human Relations in Business	(3)	
CISB 101	Business Information Technology	(3)	
(2) Required office administration courses			27
OFAD 101	Office Accounting	(3)	
OFAD 147	Medical Terminology	(2)	
OFAD 153	Beginning Word Processing	(2)	
OFAD 202	Records Management	(2)	
OFAD 203	Medical Records Management	(1)	
OFAD 221	Transcription Machines	(3)	
OFAD 248	Medical Coding and Scheduling	(3)	
OFAD 249	Medical Office Procedures	(3)	
OFAD 253	Intermediate Word Processing	(2)	
OFAD 266	Advanced Word Processing	(3)	
OFAD 293	Cooperative Education	(3)	
(3) Other required courses			8
BIOL 141	Human Anatomy and Physiology	(3)	
BIOL 141L	Human Anatomy and Physiology Lab	(2)	
PSYC 233	Human Growth and Development	(3)	

2. See faculty advisor for a program sheet detailing exact and complete requirements for this degree.

BIOLOGY

School of Natural Sciences 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 advisors 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.

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

   Minimum semester hours required: 60

			Cr. Hrs.
a. General Education for Associate Degree*			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 advisor.			10

3. Special requirements
   General Education and course requirements in discipline area plus electives chosen in consultation with the student's advisor up to the minimum of 60 credit hours comprise the requirements for this emphasis.

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

   * No substitutions can be made from the general education common core.

BUSINESS ADMINISTRATION

School of Business and Professional Studies

Associate of Arts

1. Associate of Arts graduation requirements (for further information, see section on *Degree Requirements* in this catalog)
   Minimum semester hours required: 63-64

			Cr. Hrs.
a.	General Education for Associate Degrees*		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 Financial Accounting	(3)	
	ACCT 202 Principles of Managerial Accounting	(3)	
	BUGB 101 Introduction to Business	(3)	
	BUGB 211 Business Communications	(3)	
	CISB 101 Business Information Technology	(3)	

3. Electives 12-13

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

* No substitutions can be made from the general education common core.

BUSINESS COMPUTER INFORMATION SYSTEMS

School of Business and Professional Studies

Associate of Arts

1. Associate of Arts graduation requirements (for further information, see section on *Degree Requirements* in this catalog).
   Minimum semester hours required: 60

			Cr. Hrs
a	General Education for Associate Degree*		34
b.	Human Performance and Wellness		2

2. Course requirements specific to this degree 18

a.	Required courses		
	ACCT 201 Principles of Financial Accounting	(3)	
	ACCT 202 Principles of Managerial Accounting	(3)	
	CISB 201 Information System Fundamentals	(3)	
	CISB 205 Advanced Business Software	(3)	
	CSCI 110 Beginning Programming	(3)	
	ELCT 260 Personal Computers II	(3)	
b.	Electives		6

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

* No substitutions can be made from the general education common core.

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 advisors 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: 60

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

			Cr. Hrs.
a. General Education for Associate Degree* (minimum 33 credit hours)			33
b. Human Performance and Wellness			2

2. Course requirements specific to this degree

a. Required courses			22
MATH 151	Calculus I	(5)	
CSCI 111	Computer Science I	(4)	
CSCI 112	Computer Science II	(4)	
CSCI 241	Computer Architecture I	(3)	
CSCI 242	Computer Architecture II	(3)	
CSCI 250	Data Structures	(3)	
Recommended:			
MATH 152	Calculus II	(5)	
b. Electives**			3

3. Special requirements and recommendations
   a. It is recommended that a strong background in mathematics (at least Calculus I and Calculus II) be completed simultaneously.
   b. General Education and course requirements in discipline area plus electives chosen in consultation with the student's advisor up to the minimum of 60 credit hours comprise the requirements for this emphasis.

4. No more than one D may be used in completing major requirements, and a GPA of at least 2.5 in the major is required.

5. See faculty advisor for a program sheet detailing exact and complete requirements for this degree.

*No substitutions can be made from the general education common core.

**MATH 151 may count as the mathematics core requirement. This will leave a balance of 7 hours of free general electives.

CRIMINAL JUSTICE

School of Applied Technology

Associate of Applied Science

Through a cooperative program between Mesa State College and the Delta Montrose Area Vocational Technical Center, students may enroll in an A.A.S. degree program in Criminal Justice with a choice of emphasis: Detentions/Corrections or Police Science. The Detentions/Corrections Academy and the Police Academy may be taken separately for a vocational certificate.

Students seeking the A.A.S. degree would enroll in the Criminal Justice Program at the Delta/Montrose Center and complete the required general education courses through Mesa State.

Minimum semester hours required: 71

1. Associate of Applied Science graduation requirements (taken at Mesa State College) — 18

a.	General Education		
	ENGL 111 and 112	English Composition	(6)
	SPCH 101	Interpersonal Communications or	
	SPCH 102	Speech Making	(3)
	CSCI 100	Computers in Our Society	(3)
	SOCO 144	Marriage and Families or	
	SOCO 260	General Sociology	(3)
	PSYC 150	General Psychology	(3)
b.	Human Performance and Wellness		2
	HPWA 100	Health and Wellness	(1)
	HPWE XXX*	Aerobic/Fitness Activity	(1)

2. Criminal Justice core requirements — 27

CRJ 110	Intro to Criminal Justice	(3)
CRJ 111	Substantive Criminal Law	(3)
CRJ 112	Procedural Criminal Law	(3)
CRJ 125	Law Enforcement Operations	(3)
CRJ 135	Judicial Function	(3)
CRJ 145	Correctional Process	(3)
CRJ 210	Constitutional Law	(3)
CRJ 220	Human Relations/Social Conflict	(3)
CRJ 230	Criminology	(3)

a. Detentions/Corrections emphasis — 15

CRJ 149	Criminal Justice Records/Reports	(3)
CRJ 215	Constitutional Rights of Inmates	(3)
CRJ 225	Crisis Intervention	(3)
CRJ 255	Organization/Mgmt of Institutions	(3)
CRJ 256	Classification/Treatment/Offenders	(3)

Detentions/Corrections Electives — 9

b. Police Science (Academy) emphasis; 24 credit hours required for A.A.S. Degree — 24

CRJ 101	Basic Academy	(10)
CRJ 104	Law Enforcement Skills Training	(5)
CRJ 115	Colorado Criminal Code	(3)
CRJ 118	Police Report Writing	(3)
CRJ 126	Patrol Operations	(5)
CRJ 127	Crime Scene Investigations	(3)
CRJ 246	Accident Investigation/Traffic Mgmt	(3)

c. Electives (all courses available at DMAVTC)

CRJ 151	Juvenile Justice System/Procedures	(3)
CRJ 164*	Law Enforcement Physical Fitness	(1)
CRJ 257	Spanish/Law Enforcement Officers	(3)
CRJ 258	Spanish/Detention Officers	(.5)
CRJ 259	Spanish/Patrol Officers	(.5)
CRJ 260	Transition School	(4)
CRJ 261	Crime Scene Identification	(3)
CRJ 262	Drug Identification & Interdiction	(.5)
CRJ 263	Self Defense/Law Enforcement Officers	(3)
CRJ 264	Stress Mgmt & Critical Incidents	(.5)
CRJ 265	Civil Process/Court Security	(1)
CRJ 266	Pressure Point Compliance Tactics	(2)
CRJ 267	Gangs & Religious Cults	(.5)
CRJ 268	First Aid/CPR	(1)
CRJ 269	OC Spray	(.5)
CRJ 270	Career Attainment Skills/ Criminal Justice	(1)

CRJ 275	Internship	(1-4)
CRJ 295	Independent Study	(1-8)
BUS 100	Beginning Computer	(1)
BUS 105	Business Communication	(4)
BUS 114	Computer Lab	(1-4)

* Student may elect to take either CRJ 164 at DMAVTC or HPWE aerobic/activity class from Mesa State College.

3. Criminal Justice core classes and Detentions/Corrections may be taken for a vocational certificate.

4. Students must successfully complete all 30 semester credit hours of the Police Science (Academy) courses to receive a certificate. No credits transfer into the program.

5. Programs for transfer students will be adjusted on an individual basis by both Delta/Montrose Area Vocational Technical Center, and Mesa State College. (Resident requirement and 16 credit hour minimum at Mesa State must be met to quality for a degree.)

Special requirements: Contact the Delta-Montrose Area Vocational Technical Center at 970-874-7671 for fees and charges of CRJ courses. See faculty advisor for a program sheet detailing exact and complete requirements for this degree.

CULINARY ARTS

School of Applied Technology

Associate of Applied Science

1. Course requirements for this degree
   Minimum semester hours required: 67

			Cr. Hrs.
a.	General Education for Associate Degree		16
	English 111, 112 English Composition	(6)	
	UTEC 107 Math for Technology	(4)	
	Social/Behavioral Science or Literature	(6)	
b.	Human Performance and Wellness		2

2. All of the following courses: 49

CUAR 121	Introduction to Food Production	(1)
CUAR 122	Introduction to Hot Foods	(1)
CUAR 123	Introduction to Garde Manger	(1)
CUAR 124	Food Production Applications	(1)
CUAR 131	Vegetables, Starches, Pastas, Breakfast and Short Order Cookery	(1)
CUAR 132	Center of the Plate Meat	(1)
CUAR 133	Center of the Plate Poultry, Fish	(1)
CUAR 134	Food Production Applications II	(1)
CUAR 136	Beverage Management	(2)
CUAR 138	Dining Room Management	(3)
CUAR 141	Basic Baking Principles and Ingredients	(1)
CUAR 142	Basic Yeast-Raised Products and Quick Breads	(1)
CUAR 143	Cakes, Pies and Pastries, Cookies	(1)
CUAR 144	Baking Applications	(1)
CUAR 155	Applied Food Service Sanitation	(2)
CUAR 156	Nutrition for the Food Service Worker	(3)
CUAR 157	Menu Planning	(3)
CUAR 161	Cost Controls	(3)
CUAR 162	Cost, Purchasing, and Pricing	(4)
CUAR 165	Computer Applications in the Food Service Industry	(3)
CUAR 255	Food Service Supervision	(3)

CUAR 256	Food Service Marketing	(3)
CUAR 299	Internship	(8)

3. Special requirements
   Students enrolling in the Culinary Arts Program must obtain a minimum grade of 2.00 "C" in each course listed on their program sheet, and must satisfy all other graduation requirements.

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

EARLY CHILDHOOD EDUCATION

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 Science degree with licensure for the same discipline and also for other programs at Mesa State College and other colleges. Faculty advisors will assist students in planning programs to meet requirements. Programs of study 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. The curriculum will increase students' understanding of the education and care of children. Students seeking Directorship need to meet with an advisor to assist in planning a program to meet specific licensure requirements.

1. Associate of Arts graduation requirements (for further information, see section on *Degree Requirements* in this catalog)
   Minimum credit hours required: 60

		Cr. Hrs.
a. General Education for Associate Degree*		35
ENGL 111 and 112	English Composition	(6)
SPCH 102	Speechmaking	(3)
Mathematics (MATH 113 recommended)		(4)
Science with lab		(4)
Humanities		(9)
Social and Behavioral Sciences		(9)
b. Human Performance and Wellness		2
2. Course requirements specific to this degree		18
EDEC 220	Introduction to Early Care and Education	(3)
EDEC 230*	Infant & Toddler Curriculum	(2)
EDEC 240*	Curriculum and Development: Early Childhood	(3)
EDEC 250	Exceptionalities in Early Education	(2)
EDEC 299	Student Teaching in Early Education	(5)
PSYC 233*	Human Growth and Development or	(3)
EDEC 238	Early Childhood Development	
3. Electives		5
EDEC 102	Intro to Early Childhood Lab Tech	(3)
EDEC 148	Guidance Strategies for Children	(3)
BIOL 205	Health, Nutrition, & Safety	(3)
EDEC 216	Early Childhood Admin: Human Relations	(3)
EDEC 196	Topics	(1-3)
EDEC 262*	Parenting Issues in Early Education	(1)
EDEC 264*	Administration	(3)
EDEC 290	Early Literacy for the Young Child	(2)
EDEC 297	Practicum	(1-2)
ENGL 240	Children's Literature	(3)
EDUC 211	Intro to Teaching (required for admission to Teacher Licensure Program)	(2)

4. *24 hours required for Director Qualification at State Licensing. See faculty advisor for program sheet detailing exact and complete requirements for this degree, and suggested electives. No substitutions can be made from the General Education core.

5. Students anticipating transferring into the Early Childhood Education/Elementary Education Dual Licensure Program note that a 2.75 GPA is required for admission into the program.

ELECTRONICS TECHNOLOGY

School of Applied Technology

Associate of Applied Science

The A.A.S. in Electronics Technology covers 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 or her own pace. This is especially beneficial to non-traditional students and those who must work and can only attend classes at night.

1. Associate of Applied Science graduation requirements
   Minimum semester hours required: 69

			Cr. Hrs.
a.	General Education		16
	English (ENGL 111 and 112, or 129)	(6)	
	Social/Behavioral Science, Humanities, and Applied Studies	(6)	
	UTEC 107 Math for Technology	(4)	
b.	Human Performance and Wellness		2

2. All of the following courses:* 51

ELCT 117, 117L	DC Passive Circuits and Lab	(4)
ELCT 118, 118L	AC Passive Circuits and Lab	(4)
ELCT 132, 132L	Intro to Info Tech Hardware/Software and Lab	(4)
ELCT 164, 164L	Electronic Circuits I and Lab	(4)
ELCT 165, 165L	Applied Digital Circuits and Lab	(4)
ELCT 230, 230L	Electronic Circuits II and Lab	(4)
ELCT 254, 254L	Industrial Circuits and Lab	(5)
ELCT 256, 256L	Electronic Communication and Lab	(4)
ELCT 260, 260L	Info. Tech. Hardware and Software and Lab	(5)
ELCT 265, 265L	Adv. Info Tech Hardware/Software and Lab	(4)
ELCT 279, 279L	Electronic Troubleshooting and Lab	(4)
CADT 121	CAD-Electronic Design/Layout	(1)
ELCT 280, 280L	Project Design and Fabrication and Lab	(4)

*Students may, with Electronics advisor approval, substitute the following courses for electronic courses except for ELCT 279/279L and ELCT 280/280L; ELCT 150; ELCT 152; ELCT 262/262L; ELCT 267/267L and CSCI 120.

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 advisor for a program sheet detailing exact and complete requirements for this degree.

5. Additional expenses:
   Student will be required to have an appropriate multi-meter (20,000 ohms/volts or more), hand tools costing approximately $60.00 and a scientific calculator. A power supply kit is required for ELCT 117L for approximately $32.00. This does not include the cost of required textbooks. These costs may vary with student needs and brand or quality of tools or equipment purchased. All safety glasses must meet the minimum industry safety standard of Z-87 with side shields.

ELECTRONIC ENGINEERING TECHNOLOGY

School of Applied 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. 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 of Occupational Proficiency 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.

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

	Cr. Hrs.
a. General Education for Associate Degree*	33
b. Human Performance and Wellness	2

2. Course requirements specific to this degree — 31
   a. Required courses

CSCI XXX	Pascal, FORTRAN, or other approved language (consult with advisor)	(3)
ELCT 117, 117L	DC Passive Circuits and Lab	(4)
ELCT 118, 118L	AC Passive Circuits and Lab	(4)
ELCT 164, 164L	Electronic Circuits I and Lab	(4)
ELCT 165, 165L	Applied Digital Circuits and Lab	(4)
ELCT 230, 230L	Electronic Circuits II and Lab	(4)
MATH 130	Trigonometry	(3)
MATH 151	Calculus I	(5)

3. Special recommendations
   It is recommended that the student take PHYS 111, 111L, 112 and 112L.

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

5. Additional expenses:
   Student will be required to have an appropriate multi-meter (20,000 ohms/volts or more), hand tools costing approximately $60.00 and a scientific calculator. A power supply kit is required for ELCT 117L, approximate cost is $32.00. This does not include the cost of required textbooks.
   These costs may vary with student need and brand or quality of tools or equipment purchased. All safety glasses must meet the minimum industry safety standard of Z-87 with side shields.

*No substitutions can be made from the general education common core.

ENGINEERING

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 advisors 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.

1. Associate of Science graduation requirements (for further information, see section on *Degree Requirements* in this catalog)
   Minimum semester hours required: 60

			Cr. Hrs.
a.	General Education for Associate Degree*		36
b.	Human Performance and Wellness		2

2. Course requirements specific to this degree

a.	Required Engineering & Mathematics courses		15
	ENGR 105 Basic Engineering Drawing	(3)	
	MATH 152 Calculus II	(5)	
	MATH 253 Calculus III	(4)	
	MATH 260 Differential Equations	(3)	
b.	Engineering electives (Choose from the following)		7
	ENGR 251 Circuit Analysis I	(3)	
	ENGR 251L Circuit Analysis I Lab	(1)	
	ENGR 255 Thermodynamics	(3)	
	ENGR 261 Statics and Dynamics I	(3)	
	ENGR 262 Statics and Dynamics II	(3)	

   c. Additional engineering courses may be coordinated with the branch of engineering to be studied. Students should consult their advisor 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 advisor up to the minimum of 60 credit hours comprise the requirements for this emphasis.

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

*No substitutions can be made from the general education common core.

ENVIRONMENTAL RESTORATION ENGINEERING TECHNOLOGY

School of Natural Sciences and Mathematics

Associate of Applied Science

1. Course requirements for this degree
   Minimum semester hours required: 72

			Cr. Hrs.
a.	General Education		12
	English	(6)	
	Social and Behavioral Science or Literature	(6)	
b.	Human Performance and Wellness		2

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c. All of the following courses:

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	Mapping and Technical Graphics	(3)
ENVS 110	Introduction to Environmental Restoration/ Waste Management	(3)
ENVS 211	Hazardous/Radioactive Waste Management	(4)
ENVS 212, 212L	Environmental Health and Safety, Lab	(3)
ENVS 213, 213L	Site Characterization, Lab	(5)
ENVS 216	Risk Assessment and Site Remediation	(3)
ENVS 220, 220L	Environmental Field Instrumentation, Lab	(3)
ENVS 250	Environmental Compliance	(4)
ENVS 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. Special requirements and recommendations
   a. A "D" grade or lower in any required ENVS course is not acceptable.
   b. Students must pass a comprehensive examination/practical exercise within ENVS 292.

3. See faculty advisor for a program sheet detailing exact and complete requirements for this degree.

GEOLOGY

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 advisors 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.

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

	Cr. Hrs.
a. General Education for Associate Degree*	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 or	(4)	
GEOL 113, 113L	Field-Based Intro to Physical Geology and Lab	(4)	
GEOL 112, 112L	Principles of Historical Geology and Laboratory	(4)	
GEOL 250	Environmental Geology	(3)	

3. Additional courses in geology specialization 17
   These courses will be selected in consultation with advisor.

4. Special requirements and recommendations
   General education and course requirements in discipline area plus electives chosen in consultation with the student's advisor up to the minimum of 63 credit hours comprise the requirements for this emphasis.

5. See faculty advisor for a program sheet detailing exact and complete requirements for this degree.

*No substitutions can be made from the general education common core.

HUMANITIES

School of Humanities and Social Science

Associate of Arts

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

	Cr. Hrs.
a. General Education for Associate Degree*	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 areas listed below. No more than 12 credits may be earned from any single area.
Fine Arts, Foreign Languages, History of the Arts, Literature, Mass Communications, Philosophy, Speech.
b. See faculty advisor for a program sheet detailing exact and complete requirements for this degree.

* No substitutions can be made from the general education common core.

MANUFACTURING TECHNOLOGY

School of Applied 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. By itself, it 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 of Occupational Proficiency 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 A.A.S. degree programs.

1. Associate of Science graduation requirements (for further information, see section on *Degree Requirements* in this catalog)
Minimum semester hours required: 65-66

	Cr. Hrs
a. General Education for Associate Degree*	33
b. Human Performance and Wellness	2

2. Course requirements specific to this degree

a. Required courses — 30-31

CADT 101	Introduction to CAD	(1)
CADT 106, 106L	Basic Computer Aided Design and Lab	(3)
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 148	CNC Applications	(3)

MAMT 151, 151L	Numerical Control Machining I and Lab	(3)
MATH 130	Trigonometry and	(3)
MATH 151	Calculus I (with MATH 113) **or**	
MATH 152	Calculus II (with MATH 113) **and**	
MATH 253	Calculus III	(4-5)

Special recommendations
It is recommended that the student take CSCI 100, MATH 113 (prerequisite to MATH 130) and PHYS 111, 111L. See faculty advisor for a program sheet detailing exact and complete requirements for this degree.

4. Additional expenses
Students in Machine Trades may be required to purchase approximately $375.00 in safety glasses, tools, and material. This does not include the cost of textbooks. These costs may vary with student needs and brand or quality of tools or equipment purchased. All safety glasses must meet the minimum industry safety standard of Z 87 with side shields.

* No substitutions can be made from the general education common core.

MANUFACTURING TECHNOLOGY CLUSTER: COMPUTER AIDED DESIGN TECHNOLOGY

School of Applied Technology

Associate of Applied Science

The onset of computers has changed the look and working content of the drafting and design industry. Blueprints are being transformed into computer-generated models, and the models into working parts. Changes and additions to a model are worked out on the computer instead of in the shop, saving time and money. The purpose of the A.A.S. in Computer Aided Design Technology is to prepare students for this career. The program will incorporate the concept of CAD with the engineering fields of machining, architecture, electronic and civil design.

			Cr. Hrs
1.	Course requirements for this degree		70
	Minimum semester hours required:		16
	a. General Education		
	English (ENGL 111 and 112, or 129)	(6)	
	Social and Behavioral Science or Literature	(6)	
	MATH 113 College Algebra	(4)	
	b. Human Performance and Wellness		2
	c. Electives (with advisor's approval)		3
2.	All of the following courses		49
	CADT 101 — Intro to Computers and CAD	(1)	
	CADT 106, 106L — Basic Computer Aided Design & Lab	(3)	
	CADT 107, 107L — Computer Aided Drafting & Lab	(3)	
	CADT 108, 108L — Basic CAD - MicroStation & Lab	(3)	
	CADT 109, 109L — CAD MicroStation & Lab	(3)	
	CADT 110, 110L — CAD Application & Lab	(4)	
	CADT 120, 120L — CAD – Mechanical/Electrical & Lab	(3)	
	CADT 130, 130L — CAD – Civil and Lab	(3)	
	CADT 140 — Architectural Theory	(2)	
	CADT 141 — Structural Materials	(3)	
	CADT 142, 142L — CAD – Residential Arch. & Lab	(3)	
	CADT 143, 143L — CAD – Commercial Arch. & Lab	(3)	
	MAMT 101 — Intro to Manufacturing	(2)	
	MAMT 105 — Print Reading/Sketching	(2)	
	MAMT 106 — Geometric Tolerancing	(1)	

MAMT 115, 115L.*	Intro to Machine Shop & Lab	(3)
ELCT 110, 110L	Basic Electronics & Lab	(4)
CSCI 100	Computers in Our Society	(3)

*Students may, with the CAD advisor's approval, substitute the following course for MAMT 115 and MAMT 115L: WELD 151 and WELD 151L Industrial Welding and Lab.

3. Special requirements and recommendations:
   Students seeking an Associate of Applied Science degree must obtain a minimum of 2.00 ("C") in each course and must satisfy all other graduation requirements.

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

MANUFACTURING TECHNOLOGY CLUSTER: MACHINING TECHNOLOGY

School of Applied Technolog

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.

1. Course requirements for this degree
   Minimum credit hours required: 74

			Cr. Hrs.
a.	General Education		19
	Physics (100 minimum)	(3)	
	Social and Behavioral Science or Literature	(6)	
	Mathematics (UTEC 107 minimum)	(4)	
	English (ENGL 111 &112,or 115 minimum)	(6)	
b.	Human Performance and Wellness		2

2. All of the following courses 53

CADT 101	Introduction to CAD	(1)
CADT 106,106L	Basic Computer Aided Design and Lab	(3)
ELCT 110,110L	Basic Electronics and Lab	(4)
MAMT 101	Intro to Manufacturing	(2)
MAMT 105	Print Reading/Sketching	(2)
MAMT 106	Geometric Tolerancing	(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 140, 140L	Job Shop Machining II and Lab or	
MAMT 170	Practical Applications	(3)
MAMT 148	CNC Applications	(3)
MAMT 151, 151L	Numerical Control Machining I and Lab	(3)
MAMT 155, 155L	Numerical Control Machining II and Lab	(3)
MAMT 160, 160L	Properties of Materials and Lab	(2)
MAMT 207	Introduction to Statistical Process	(2)
UTEC 220	Shop Management	(3)
WELD 151, 151L	Industrial Welding and Lab	(3)
Elective		(3)

3. 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.

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

5. Additional expenses
   Students in the Manufacturing Technology Cluster **may** be required to purchase approximately $375.00 in safety glasses, tools, and material. This does not include the cost of textbooks. These costs may vary with student needs and brand or quality of tools or equipment purchased. All safety glasses must meet a minimum industry safety standard of Z-87 with side shields.

MANUFACTURING TECHNOLOGY CLUSTER: WELDING

School of Applied Technology

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.

1. Course requirements for this degree
   Minimum semester hours required: 74

		Cr. Hrs.
a. General Education		16
English (ENGL 111 and 112 minimum)	(6)	
Social and Behavioral Science or Literature	(6)	
Mathematics (UTEC 107 minimum)	(4)	
b. Human Performance and Wellness		2
2. All the following courses:		56
CADT 101 Introduction to CAD	(1)	
CADT 106, 106L Basic Computer Aided Design and Lab	(3)	
ELCT 110, 110L Basic Electronics and Lab	(4)	
MAMT 101 Intro to Manufacturing	(2)	
MAMT 105 Print Reading/Sketching	(2)	
MAMT 106 Geometric Tolerancing	(1)	
MAMT 115, 115L Intro to Machining and Lab	(3)	
MAMT 150 CNC for Welders	(1)	
MAMT 160, 160L Properties of Materials and Lab	(2)	
MAMT 207 Statistical Process Control	(2)	
UTEC 220 Shop Management	(3)	
WELD 110, 110L SMAW I and Lab	(6)	
WELD 115 Welding and Structural Theory	(4)	
WELD 117, 117L OFW and C I and Lab	(2)	
WELD 133 Fabrication Layout	(3)	
WELD 140 Job Shop **or**		
WELD 170 Practical Application	(3)	
WELD 211, 211L GMAW and Lab	(5)	
WELD 221, 221L FCAW and Lab	(3)	
WELD 230, 230L GTAW and Lab	(3)	
Elective	(3)	

3. 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.

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

5. Additional expenses
   Students in Welding **may** be required to purchase approximately $200.00 in tools and personal safety and welding equipment. This amount does not include required textbooks. These costs may vary with student needs and brand or quality of tools or equipment purchased. All safety glasses must meet the minimum industry safety standards of Z-87 with side shields.

MATHEMATICS

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 advisors 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.

1. Associate of Science graduation requirements (for further information, see section on *Degree Requirements* in this catalog)
   Minimum semester hours required: 60

			Cr. Hrs.
a. General Education for Associate Degree*			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)	
STAT 200	Probability and Statistics	(3)	
3. Electives			5

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

5. See faculty advisor for a program sheet detailing exact and complete requirements for this degree.

6. Additional expenses
   TI-82 or TI-85 (preferred) or equivalent calculator is recommended or required for mathematics courses. Cost is approximately $70.00-125.00.

* No substitutions can be made from the general education common core.

PHYSICS

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 advisors 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.

1. Associate of Science graduation requirements (for further information, see section on *Degree Requirements* in this catalog)
   Minimum semester hours required: 60

			Cr. Hrs.
a. General Education for Associate Degree*			34
b. Human Performance and Wellness			2
2. Course requirements specific to this degree			
a. Required courses			13
PHYS 131	Fundamental Mechanics	(4)	
PHYS 131L	Fundamental Mechanics Lab	(1)	
PHYS 132	Electromagnetism and Optics	(4)	
PHYS 132L	Electromagnetism and Optics Lab	(1)	
PHYS 231	Modern Physics	(3)	
3. Electives			11

4. Special requirements
   General Education and course requirements in discipline area plus electives chosen in consultation with the student's advisor up to the minimum of 60 credit hours comprise the requirements for this emphasis.

5. See faculty advisor for a program sheet detailing exact and complete requirements for this degree.

* No substitutions can be made from the general education common core.

RADIOLOGIC TECHNOLOGY

School of Business and Professional Studies

Associate of Applied Science

The Radiologic Technology graduate is eligible to take the examination administered by the American Registry of Radiologic Technologists.

			Cr. Hrs.
1. Pre-Requisite			
BIOL 141, 141L	Human Anatomy and Physiology and Lab		5
2. Course general education requirements for this degree			
a. English Composition			6
b. Social or Behavioral Science (PSYC 150 General Psychology and One other Social/Behavioral or Humanities course)			6
c. Human Performance and Wellness			2
d. CSCI 100	Computers in Our Society		3
3. Program Courses			57
RTEC 114	Radiographic Clinical Experience I	(2)	

RTEC 120	Introduction to Rad Tech and Patient Care	(3)
RTEC 121, 121L	Radiographic Anatomy and Positioning/Lab	(3)
RTEC 122, 122L	Principles of Exposure/Lab	(3)
RTEC 124	Radiographic Clinical Experience II	(4)
RTEC 125	Radiologic Science	(2)
RTEC 131, 131L	Radiographic Anatomy and Positioning II/Lab	(3)
RTEC 132, 132L	Radiographic Equipment and Special Imaging/Lab	(3)
RTEC 135	Radiation Biology and Protection	(2)
RTEC 214	Radiographic Clinical Experience III	(8)
RTEC 224	Radiographic Clinical Experience IV	(8)
RTEC 234	Radiographic Clinical Experience V	(8)
RTEC 251	Radiographic Pathology	(3)
RTEC 255	Radiographic Assessment I	(1)
RTEC 261	Radiographic Review	(3)
RTEC 265	Radiographic Assessment II	(1)

4. Special Requirements
   There is a separate application form used for admittance to the program. Please contact the Department of Nursing and Radiologic Sciences.

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 advisors to plan specific programs that will prepare them for further study in disciplines of their choice.

1. Associate of Arts graduation requirements (for further information, see section on Degree Requirements in this catalog)
   Minimum credit hours required: 62

	Cr. Hrs.
a. General Education for Associate Degree*	34
b. Human Performance and Wellness	2
2. Course requirements specific to this degree	18
3. Electives	8

   a. Students are required to select a minimum of 18 hours of lower-division courses from one or more of the following disciplines:
      Anthropology — Economics
      History — Political Science
      Sociology — Psychology
   b. Those students wishing to concentrate in a specific discipline should consult with an advisor in that discipline or the Chairperson of the Department of Social Sciences.

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

   * No substitutions can be made from the general education common core.

COMMUNICATIONS TECHNOLOGY CLUSTER: TELECOMMUNICATIONS ENGINEER

School of Applied Technology

Associate of Applied Science

1. Course requirements for this degree
   Minimum credit hours required: 72

			Cr. Hrs.
A.	General Education		22
	English 111 and 112	(6)	
	SPCH 101	(3)	
	SPCH 102	(3)	
	Social and Behavioral Science	(6)	
	MATH 113	(4)	
B.	Human Performance and Wellness		2
C.	Major Area Courses		48
	CADT 101 Introduction to Computers and CAD	(1)	
	ELCT 105 PC Maintenance and Repair	(2)	
	OFAD 201 Office Management	(3)	
	UTEC 251 Personal & Professional Leadership Development	(2)	
	ELCT 117 DC Passive Circuits	(3)	
	ELCT 117L DC Passive Circuits Lab	(1)	
	ELCT 118 AC Passive Circuits	(3)	
	ELCT 118L AC Passive Circuits Lab	(1)	
	TCOM 150 Data Communications	(4)	
	TCOM 160 Cable Communications	(4)	
	TCOM 170 Voice Communications	(4)	
	TCOM 190 Emerging Technologies	(2)	
	TCOM 215 Communication Transmission Systems	(3)	
	TCOM 220 Regulations and Standards	(3)	
	TCOM 240 Telecom. Engineering and Outside Plant	(3)	
	TCOM 245 Engineering Economics	(6)	
	TCOM 275 Field Studies, Engineering Planning	(3)	

2. The student seeking an Associate of Applied Science degree must obtain a minimum grade of 2.00 (C) in each course listed in their program sheet, and must satisfy all other graduation requirements.

TRANSPORTATION SERVICES CLUSTER: AUTOMOTIVE TECHNOLOGY

School of Applied Technology

Associate of Applied Science

Automotive technology covers general service and repair of vehicles in today's society. Courses will cover theory, applications, maintenance, repair and diagnosis of vehicle systems using hand, power and specialty tools and equipment. Diagnostics and computer systems receive special emphasis. UTEC is a satellite training center for Ford, Chrysler, Toyota, and Subaru.

1. Course requirements for this degree
   Minimum credit hours required: 75

			Cr. Hrs
a.	General Education		16
	English (ENGL 111, ENGL 112)	(6)	
	Social and Behavioral Science, Humanities, and Applied Studies	(6)	
	Mathematics (UTEC 107)	(4)	
b.	Human Performance and Wellness		2
c.	Major Area required courses listed below		27
	TSTC 100 Introduction to Transportation Services	(1)	
	TSTC 101 Vehicle Service and Inspection	(2)	
	TSTC 110 Engine Fundamentals	(1)	
	TSTC 130 Electrical Fundamentals	(2)	
	TSTC 140 Drive Train Fundamentals	(2)	
	TSTC 160 Electronic Control Systems	(2)	
	TSTC 170 Chassis Fundamentals	(1)	
	TSTC 171 Brake System Fundamentals	(2)	
	TSTC 180 Fuel System Fundamentals	(1)	
	TSTC 190 Climate Control Fundamentals	(1)	
	UTEC 120 Industrial Safety Practices	(3)	
	UTEC 150 Fluid Power	(3)	
	UTEC 220 Industry Employment Practices	(3)	
	WELD 151 Industrial Welding	(2)	
	WELD 151L Industrial Welding Laboratory	(1)	
d.	Elective courses		20
	Choose twenty-seven credit hours minimum from the following:		
	TSTA 245 Manual Drive Trains	(5)	
	TSTA 247 Automatic Drive Trains Service	(4)	
	TSTA 265 Engine Control Service	(2)	
	TSTA 267 Body and Chassis Controls	(2)	
	TSTA 275 Alignment and Suspension Service	(3)	
	TSTD 285 Diesel Fuel Injection	(4)	
	TSTG 115 Gas Engine Reconditioning	(4)	
	TSTG 135 Electrical Component Repair	(2)	
	TSTG 140 Job Shop	(4)	
	TSTG 170 Practical Applications	(4)	
	TSTG 175 Hydraulic Brake Service	(2)	
	TSTG 195 Climate Control Service	(2)	
	TSTA 287 Engine Performance & Emissions	(2)	
	TSTG 240 Advanced Job Shop	(4)	
	TSTG 270 Advanced Practical Applications	(4)	

e. The student seeking an Associate of Applied Science degree must obtain a minimum of 2.00 ("C") in each course entitled TSTC, TSTG, and TSTA.

f. See a faculty advisor for a program sheet with exact program requirements.

2. Additional expenses

Students entering the program **may** be required to purchase or have hand tools and appropriate personal clothing and safety gear with a total cost of approximately $1375.00. This does not include the cost of required textbooks. The above costs may vary with student need and brand or quality of tools or equipment purchased. All safety glasses must meet the minimum industry standard of Z-87 with side shields.

TRANSPORTATION SERVICES CLUSTER: DIESEL TECHNOLOGY

School of Applied Technology

Associate of Applied Science

Diesel technology covers general service and repair of diesel powered vehicles in today's society. Course will cover theory, applications, maintenance, repair and diagnosis of vehicle systems using hand, power and specialty tools and equipment. Diagnostics and computer systems receive special emphasis.

1. Course requirements for this degree
   Minimum credit hours: 75

			Cr. Hrs
a.	General Education		16
	English (ENGL 111 and ENGL 112)	(6)	
	Social and Behavioral Science, Humanities, and Applied Studies	(6)	
	Mathematics (UTEC 107)	(4)	
b.	Human Performance and Wellness		2
c.	Major area required courses listed below		27
	TSTC 100 Introduction to Transportation Services	(1)	
	TSTC 101 Vehicle Service and Inspection	(2)	
	TSTC 110 Engine Fundamentals	(1)	
	TSTC 130 Electrical Fundamentals	(2)	
	TSTC 140 Drive Train Fundamentals	(2)	
	TSTC 160 Electronic Control Systems	(2)	
	TSTC 170 Chassis Fundamentals	(1)	
	TSTC 171 Brake System Fundamentals	(2)	
	TSTC 180 Fuel System Fundamentals	(1)	
	TSTC 190 Climate Control Fundamentals	(1)	
	UTEC 120 Industrial Safety Practices	(3)	
	UTEC 150 Fluid Power	(3)	
	UTEC 220 Industrial Employment Practices	(3)	
	WELD 151 Industrial Welding	(2)	
	WELD 151L Industrial Welding Laboratory	(1)	
d.	Elective courses		30
	Choose thirty credit hours minimum from the following:		
	TSTA 245 Manual Drive Trains	(5)	
	TSTA 287 Engine Performance and Emission	(2)	
	TSTD 177 Air System Repair Service	(2)	
	TSTD 215 Diesel Engine Recon	(5)	
	TSTD 265 Diesel Engine Controls	(1)	
	TSTD 275 Heavy Duty Suspension	(2)	
	TSTD 285 Diesel Fuel Injection	(4)	
	TSTG 115 Gas Engine Reconditioning	(4)	
	TSTG 135 Electrical Component Repair	(2)	
	TSTG 140 Job Shop	(4)	
	TSTG 170 Practical Applications	(4)	
	TSTG 175 Hydraulic Brake Service	(2)	
	TSTG 195 Climate Control Service	(2)	
	TSTG 240 Advanced Job Shop	(4)	
	TSTG 270 Advanced Practical Applications	(4)	

e. The student seeking an Associate of Applied Science degree must obtain a minimum of 2.00 ("C") in each course entitled TSTC, TSTG, TSTD.

f. See a faculty advisor for a program sheet with exact program requirements.

2. Additional expenses
   Students entering the program may be required to purchase or have hand tools and appropriate personal clothing and safety gear with cost of approximately $1375.00. This does not include the cost of required textbooks. These costs may vary with student need and brand or quality of tools or equipment purchased. All safety glasses must meet the minimum industry safety standard of Z-87 with side shields.

CERTIFICATES OF OCCUPATIONAL PROFICIENCY OFFERED AT MESA STATE COLLEGE

The various emphases currently defined and available for the student to choose from under the Certificate of Occupational Proficiency are listed below.

Certificate of Occupational Proficiency

- **Culinary Arts**
- **Electric Lineworker**
- **Electronic Technology**
- **Manufacturing Technology Cluster**
  - Computer Drafting Technology
  - Machining and Manufacturing Trades
  - Welding
- **Transportation Services Cluster**
  - Automotive Service
  - Diesel Mechanics

CULINARY ARTS

School of Applied Technology

Certificate of Occupational Proficiency

Minimum credit hours required: 33

			Cr. Hrs.
1. General Education Requirements			7
ENGL 111	English Composition	(3)	
UTEC 107	Math for Technology	(4)	
2. Skill Core Requirements			4
CUAR 121	Introduction to Food Production	(1)	
CUAR 141	Basic Baking Principles and Ingredients	(1)	
CUAR 155	Applied Foodservice Sanitation	(2)	
3. Electives (select 22 hours from this list)			22
CUAR 122	Introduction to Hot Foods	(1)	
CUAR 123	Introduction to Garde Manger	(1)	
CUAR 124	Food Production Applications	(1)	
CUAR 131	Vegetables, Starches, Pastas, Breakfast, and Short Order Cookery	(1)	
CUAR 132	Center of the Plate Meat	(1)	
CUAR 133	Center of the Plate Poultry, Fish	(1)	
CUAR 134	Food Production Applications II	(1)	
CUAR 136	Beverage Management	(2)	
CUAR 138	Dining Room Management	(3)	
CUAR 142	Basic Yeast-Raised Products and Quick Breads	(1)	
CUAR 143	Cakes, Pies and Pastries, Cookies	(1)	
CUAR 144	Baking Applications	(1)	
CUAR 156	Nutrition for the Food Service Worker	(3)	
CUAR 157	Menu Planning	(3)	
CUAR 161	Cost Controls	(3)	
CUAR 162	Cost, Purchasing, and Pricing	(4)	
CUAR 165	Computer Applications in the Food Service Industry	(3)	

CUAR 255	Food Service Supervision	(3)
CUAR 256	Food Service Marketing	(3)
CUAR 299	Internship	(8)

Special requirements:

Students enrolling in the Culinary Arts program must obtain a minimum grade of 2.00 "C" in each course listed in their program sheet, and must satisfy all other graduation requirements. Students seeking a Certificate of Occupational Proficiency must see their faculty advisor before registering for classes.

ELECTRIC LINEWORKER

School of Applied Technology

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:

ELCL 111	Mathematical Basic Electricity	(5)
ELCL 120	Fundamentals of Electricity	(5)
ELCL 131	Electrical Distribution Theory I	(4)
ELCL 132	Electrical Distribution Theory II	(4)
ELCL 132L	Electrical Distribution Theory II Lab	(2)
ELCL 136L	Related Fundamentals I Lab	(4)
ELCL 137	Related Fundamentals II	(2)
ELCL 137L	Related Fundamentals II Lab	(4)
ELCL 140	Underground Procedure	(4)
ELCL 140L	Underground Procedure Lab	(2)
ELCL 145	Hotline Procedure	(1)
ELCL 145L	Hotline Procedure Lab	(2)

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 advisor for a program sheet detailing exact and complete requirements for this certificate.

4. Additional expenses
   Students will be required to purchase or have approximately $560.00 in tools and personal equipment. This does not include required textbooks or an adequate pair of workboots. These costs may vary with student needs and brand or quality of tools or equipment purchased. All safety glasses must meet the minimum industry safety standard of Z-87 with side shields.

ELECTRONICS TECHNOLOGY

School of Applied Technology

Certificate of Occupational Proficiency

Minimum semester hours required: 55

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

ELCT 117	DC Passive Circuits	(3)
ELCT 117L	DC Passive Circuits Lab	(1)
ELCT 118	AC Passive Circuits	(3)
ELCT 118L	AC Passive Circuits Lab	(1)
ELCT 132	Intro to Info Tech Hardware and Software	(3)
ELCT 132L	Intro Info Tech Hardware and Software Lab	(1)
ELCT 164	Electronic Circuits I	(3)
ELCT 164L	Electronic Circuits I Lab	(1)
ELCT 165	Applied Digital Circuits	(2)
ELCT 165L	Applied Digital Circuits Lab	(2)
ELCT 230	Electronic Circuits II	(3)
ELCT 230L	Electronic Circuits II Lab	(1)
ELCT 254	Industrial Circuits	(3)
ELCT 254L	Industrial Circuits Lab	(2)
ELCT 256	Electronic Communication	(3)
ELCT 256L	Electronic Communication Lab	(1)
ELCT 260	Information Technology, Hardware and Software	(3)
ELCT 260L	Info Technology, Hardware and Software Lab	(2)
ELCT 265	Advanced Info Tech Hardware and Software	(2)
ELCT 265L	Advanced Info Tech Hardware and Software Lab	(2)
ELCT 279	Electronic Troubleshooting	(3)
ELCT 279L	Electronic Troubleshooting Lab	(1)
ELCT 280	Project Design	(2)
ELCT 280L	Project Design Lab	(2)
CADT 121	CAD-Electronic Design/Layout	(1)
UTEC 107	Mathematics for Technology	(4)

   *Students may, with Electronics advisor approval, substitute the following courses for electronic courses except ELCT 279/279L and 280/280L: ELCT 150; ELCT 152; ELCT 262/262L; ELCT 267/267L and CSCI 120.

2. Special requirements and recommendations
   a. Students should check with an Electronics instructor/advisor 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.

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

4. Additional expenses
   Student will be required to have an appropriate multi-meter (20,000 ohms/volts or more); handtools, costing approximately $60.00; and a scientific calculator. A power supply kit is required for ELCT 117L and costs approximately $32.00. This does not include the cost of required textbooks. These costs may vary with student needs and brand or quality of tools or equipment purchased. All safety glasses must meet the minimum industry safety standard of Z-87 with side shields.

MANUFACTURING TECHNOLOGY CLUSTER: COMPUTER DRAFTING TECHNOLOGY

School of Applied 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.

Minimum semester hours required: 33

1. Course requirements for this certificate

CADT 101	Intro to Computer and CAD	(1)
CADT 106	Basic Computer Aided Design	(1)
CADT 106L	Basic Computer Aided Design Lab	(2)
CADT 107	Computer Aided Drafting	(1)
CADT 107L	Computer Aided Drafting Lab	(2)
CADT 108	Basic CAD – Micro Station	(1)
CADT 108L	Basic CAD – Micro Station Lab	(2)
CADT 109	CAD Micro Station	(1)
CADT 109L	CAD Micro Station Lab	(2)
CADT 110	CAD Application	(2)
CADT 110L	CAD Application Lab	(2)
CSCI 100	Computers in Our Society	(3)
ENGL 111	English Composition	(3)
MAMT 105	Print Reading/Sketching	(2)
MAMT 106	Geometric Tolerancing	(1)
UTEC 107	Mathematics for Technology	(4)
Electives (with advisor's approval)		(3)

2. 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.

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

MANUFACTURING TECHNOLOGY CLUSTER: MACHINE AND MANUFACTURING TRADES

School of Applied Technology

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: 43

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

CADT 101	Intro to CAD	(1)
ENGL 090	Basic Writing or	

ENGL 111	English Composition	(3)
MAMT 105	Print Reading/Sketching	(2)
MAMT 106	Geometric Tolerance	(1)
MAMT 115	Introduction to Machine Shop	(1)
MAMT 115L	Introduction to Machine Shop Lab	(2)
MAMT 120	Machine Technology I	(1)
MAMT 120L	Machine Technology I Lab	(3)
MAMT 125	Machine Technology II	(1)
MAMT 125L	Machine Technology II Lab	(3)
MAMT 130	Machine Technology III	(1)
MAMT 130L	Machine Technology III Lab	(3)
MAMT 135	Job Shop Machining I	(1)
MAMT 135L	Job Shop Machining I Lab	(2)
MAMT 140	Job Shop Machining II and	(1)
MAMT 140L	Job Shop Machining II Lab or	
MAMT 170	Practical Applications	(2)
MAMT 148	CNC Applications	(3)
MAMT 151	Numerical Control Machining I	(1)
MAMT 151L	Numerical Control Machining I Lab	(2)
MAMT 155	Numerical Control Machining II	(1)
MAMT 155L	Numerical Control Machining II Lab	(2)
MAMT 160	Properties of Materials	(1)
MAMT 160L	Properties of Materials Lab	(1)
UTEC 107	Mathematics for Technology	(4)

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 advisor for a program sheet detailing exact and complete requirements for this certificate.

4. Additional expenses
   Students in Machine Trades may be required to purchase approximately $375.00 in safety glasses, tools, and material. This does not include cost of textbooks. This cost may vary with student needs and brand or quality of tools or equipment purchased. All safety glasses must meet a minimum industry safety standard of Z-87 with side shields.

MANUFACTURING TECHNOLOGY CLUSTER: WELDING

School of Applied Technology

Certificate of Occupational Proficiency

Certificate programs are designed to be employment directed for beginning level jobs. Students should check with a welding instructor/advisor about options for specialized employment training requiring a shorter period of training.

Minimum semester hours required: 44

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

CADT 101	Introduction to CAD	(1)
ENGL 111	English Composition	(3)
MAMT 105	Print Reading/Sketching	(2)
MAMT 160	Properties of Materials	(1)
MAMT 160L	Properties of Materials Lab	(1)
UTEC 107	Mathematics for Technology	(4)

WELD 110	Shielded Metal Arc Welding I	(1)
WELD 110L	Shielded Metal Arc Welding I Lab	(5)
WELD 115	Welding and Structural Theory	(4)
WELD 117	Oxy-Fuel Welding/Cutting I	(1)
WELD 117L	Oxy-Fuel Welding/Cutting I Lab	(1)
WELD 120	Shielded Metal Arc Welding II	(1)
WELD 120L	Shielded Metal Arc Welding II Lab	(5)
WELD 133	Fabrication Layout	(3)
WELD 140	Job Shop **or**	
WELD 170	Practical Application	(3)
WELD 211	Gas Metal Arc Welding	(1)
WELD 211L	Gas Metal Arc Welding Lab	(4)
WELD 221	Flux Core Arc Welding	(1)
WELD 221L	Flux Core Arc Welding Lab	(2)

2. See faculty advisor for a program sheet detailing exact and complete requirements for this certificate.

3. Special requirements and recommendations
   Students seeking a Certificate of Occupational Proficiency must obtain a minimum of 2.00 ("C") in each required WELD course and must satisfy all other graduation requirements.

4. Additional expenses
   Students in welding **may** be required to purchase approximately $200.00 in tools and personal safety and welding equipment. This does not include required textbooks. These costs may vary with student need and brand or quality of tools or equipment purchased. All safety glasses must meet the minimum industry safety standard of Z-87 with side shields.

TRANSPORTATION SERVICES CLUSTER AUTOMOTIVE SERVICE

School of Applied Technology

Certificate of Occupational Proficiency

Offers a shortened training period with an opportunity to take selected courses to prepare for entry-level positions in the automotive field. Completion is applicable to the Associate of Applied Science in Transportation Services Cluster – Automotive Technology.

Minimum semester hours: 41

1. Course requirements for this certificate:
   a. All of the following courses 28

TSTC 100	Intro to Transportation Services	(1)
TSTC 101	Vehicle Service and Inspection	(2)
TSTC 110	Engine Fundamentals	(1)
TSTC 130	Electrical Fundamentals	(2)
TSTC 140	Drive Train Fundamentals	(2)
TSTC 180	Fuel System Fundamentals	(1)
TSTC 171	Brake System Fundamentals	(2)
TSTC 160	Electronic Control System Fundamentals	(2)
TSTC 170	Chassis Fundamentals	(1)
TSTC 190	Climate Control Fundamentals	(1)
UTEC 107	Mathematics for Technology	(4)
UTEC 120	Industrial Safety Practices	(3)
UTEC 150	Fluid Power	(3)
WELD 151/151L	Industrial Welding & Lab	(3)

b. Electives required for this certificate: 13
(Select 13 hours from this list)

TSTA 245	Manual Drive Trains	(5)
TSTA 265	Engine Control Service	(2)
TSTA 267	Body and Chassis Controls	(2)
TSTA 275	Alignment and Suspension Service	(3)
TSTA 287	Engine Performance & Emissions	(2)
TSTG 115	Gas Engine Recon	(4)
TSTG 135	Electrical Component Repair	(2)
TSTG 175	Hydraulic Brake Service	(2)
TSTG 195	Climate Control Service	(2)
UTEC 220	Industry Employment Practices	(3)

c. Students seeking a Certificate of Occupational Proficiency must obtain a minimum of 2.00 ("C") in each course.
d. See faculty advisor for a program sheet with exact program requirements.

2. Additional expenses
Students entering the program **may** be required to purchase or have hand tools and appropriate clothing and safety gear with a total cost of approximately $1375.00. This does not include cost of required textbooks. These costs may vary with student need and brand or quality of tools or equipment purchased. All safety glasses must meet the minimum industry safety standard of Z-87 with side shields.

TRANSPORTATION SERVICES CLUSTER DIESEL MECHANICS

School of Applied Technology

Certificate of Occupational Proficiency

Offers a shortened training period with opportunity to take selected courses to prepare for entry level positions in the diesel service field. Completion is applicable to the Associate of Applied Science in Transportation Services Cluster-Diesel Technology.

Minimum semester hours: 41

1. Course requirements for this certificate:
a. All of the following courses: 28

TSTC 100	Intro to Transportation Services	(1)
TSTC 101	Vehicle Service and Inspection	(2)
TSTC 110	Engine Fundamentals	(1)
TSTC 130	Electrical Fundamentals	(2)
TSTC 140	Drive Train Fundamentals	(2)
TSTC 180	Fuel System Fundamentals	(1)
TSTC 171	Brake System Fundamentals	(2)
TSTC 160	Electronic Control System Fundamentals	(2)
TSTC 170	Chassis Fundamentals	(1)
TSTC 190	Climate Control Fundamentals	(1)
UTEC 107	Mathematics for Technology	(4)
UTEC 120	Industrial Safety Practices	(3)
UTEC 150	Fluid Power	(3)
WELD 151/151L	Industrial Welding & Lab	(3)

b. Electives for this certificate 13
(Choose at least 13 hours from the following courses)

TSTA 245	Manual Drive Trains	(5)
TSTA 287	Engine Performance & Emissions	(2)
TSTD 177	Air Brakes Repair and Service	(2)

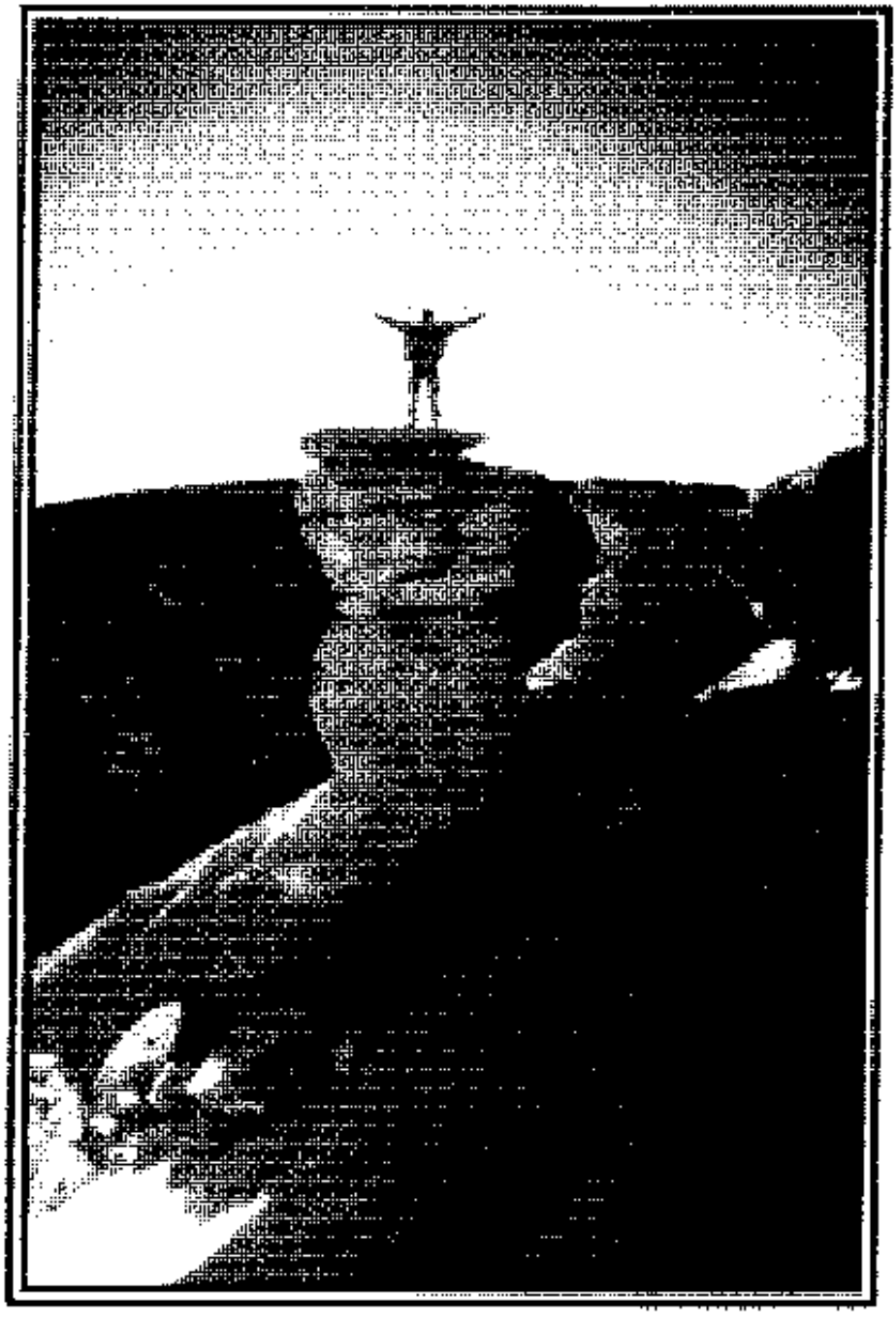
TSTD 215	Diesel Engine Recon	(5)
TSTD 265	Diesel Engine Controls	(1)
TSTD 275	Heavy Duty Suspensions	(2)
TSTD 285	Diesel Fuel Injection	(4)
TSTG 135	Electrical Component Repair	(2)
UTEC 220	Industry Employment Practices	(3)

c. Students seeking a Certificate of Occupational Proficiency must obtain a minimum of 2.00 ("C") in each course.

d. See a faculty advisor for a program sheet and exact program requirements.

2. Additional expenses

Students entering the program may be required to purchase or have hand tools and appropriate personal clothing and safety gear with a total cost of approximately $1375.00. This does not include the cost of required textbooks. These costs may vary with student need and brand or quality of tools or equipment purchased. All safety glasses must meet the minimum industry safety standard of Z-87 with side shields.



Department of Teacher Education (Educator Licensing)

The Department of Teacher Education offers licensure programs in Elementary, Secondary, and K-12 Education. Licensure to teach in public schools in the State of Colorado requires each teacher candidate to complete a baccalaureate degree and a sequence of professional education courses that include extensive field experiences. Licensure is a separate process from the degree, although both may be pursued concurrently. Formal admission to the Teacher Education Program is required of all students expecting to obtain a Colorado Educator License in any teaching field.

In order to complete all licensure requirements in a timely manner it is important that students contact the department as soon as possible after enrolling at Mesa State College.

The Department Office and Office of the Coordinator of Placements and Admissions is located in Albers Hall (12th and Elm Street).

Elementary Education Licensure

Colorado Teacher Licensure and Elementary Education Endorsement (Kindergarten through Sixth Grade)

Students should meet with the Coordinator of Placements and Admissions as soon as possible in order to obtain information specific to the elementary education licensure program. Following are the components of the Mesa State College elementary licensure program:

1. Academic Major: All elementary licensure students must complete the requirements for a Bachelor of Arts in Liberal Arts (Interdisciplinary Studies).
2. Formal admission to the Teacher Education Program.
3. Professional Education Sequence for Elementary Teacher Licensure:
   (Coursework must be taken in the prescribed sequence)

	Credit Hours	Field Hours
EDUC 211: Introduction to Teaching	2	20
EDUC 341: Pedagogy and Assessment Knowledge	3	20
EDUC 343: Teaching to Diversity	3	25
EDUC 441: Methods of Teaching Language and Literacy	4	50
EDUC 451: Methods of Teaching Mathematics	4	50
EDUC 452: Methods of Teaching Science	3	35
EDUC 453: Methods of Teaching Social Sciences	3	35
EDUC 499: Teaching Internship and Colloquium	12	600
Total Hours Required	34	835

Secondary Education Licensure

Colorado Teacher Licensure and Secondary Education Endorsement (Grades Seven through Twelve)

Students should meet with the Coordinator of Placements and Admission as soon as possible in order to obtain information specific to the secondary education licensure program. Following are the components of the Mesa State College secondary licensure program:

1. Academic Major: All secondary licensure students must complete the requirements for a Bachelor of Arts or Science in one of the following academic disciplines:
   English, History (Social Science), Mathematics, Science (Biology), Science (Geology), Science (Physics)
2. Formal Admission to the Teacher Education Program.
3. Professional Education Sequence for Secondary Teacher Licensure:
   (Coursework must be taken in the prescribed sequence)

	Credit Hours	Field Hours
EDUC 211: Introduction to Teaching	2	20
EDUC 342: Pedagogy and Assessment	3	20
EDUC 343: Teaching to Diversity	3	25

EDUC 442: Methods of Teaching Language and Literacy	4	60
Content Area Methods Course	3-5	75
EDUC 499: Teaching Internship and Colloquium	12	600
Total Hours Required	28-30	800

K-12 Education Licensure

Colorado Teacher Licensure and K-12 Endorsement (Kindergarten through 12th Grade)

Students should meet with the Coordinator of Placements and Admission as soon as possible in order to obtain information specific to the K-12 Education licensure program. Following are the components of the Mesa State College K-12 teacher licensure program.

1. Academic Major: K-12 licensure students must complete the requirements for the Bachelor of Arts in one of the following academic disciplines:
   Art, Human Performance and Wellness, Music
2. Formal admission to the Teacher Education Program.
3. Professional Education Sequence for K-12 Teacher Licensure:**
   (Coursework must be taken in the prescribed sequence)

	Credit Hours	Field Hours
EDUC 211: Introduction to Teaching	2	20
EDUC 342: Pedagogy and Assessment	3	20
EDUC 343: Teaching to Diversity	3	25
Content Area Methods Course	Varies	135
EDUC 499: Teaching Internship and Colloquium	12	600
Total Hours Required		800

**Students seeking licensure in Art must take EDUC 442 (3 cr. hr. and 60 field hours) in addition to the above sequence.

Professional Development School

The Professional Development Schools (PDS) program at Mesa State College is an intensive field-based teacher education and licensure program developed in cooperation with local school districts as an alternative to the conventional teacher education program. Participants must hold a bachelor's degree in English, History, Mathematics or Science for Secondary Licensure. An Interdisciplinary B.A. degree in Liberal Arts is required for Elementary Licensure. The PDS program consists of a pre-admission stage and three consecutive semester phases. The students spend one summer attending classes on the Mesa State College campus and the entire academic school year immersed in the school culture under the direct supervision of a master mentor teacher while concurrently participating in coursework, seminars, and colloquia at the college.

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. Courses numbered 500-599 are taken during graduate years.

100-199 . . . . . Freshman year
200-299 . . . . . Sophomore year
300-399 . . . . . Junior year
400-499 . . . . . Senior year
500-599 . . . . . Graduate

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.

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.

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. 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.

Some courses/programs have additional expenses (i.e., calculator, medical equipment, etc.) above the standard cost of tuition, fees, and textbooks. Courses or programs with additional expenses will show the approximate cost in the program description or above the course description. Courses/programs with additional expenses less than $50 will not be included.

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.

Discipline	*Prefix*	*Page*	*School**
Accounting	ACCT	XXX	BUS
Administration of Justice	ADJU	XXX	H&SS
Anthropology	ANTH	XXX	H&SS
Art	ARTE	XXX	H&SS
Biology	BIOL	XXX	NS&M
Business	BUGB	XXX	BUS
Chemistry	CHEM	XXX	NS&M
Computer Drafting Technology	CADT	XXX	AT
Computer Information Systems, Business	CISB	XXX	BUS
Computer Science	CSCI	XXX	NS&M
Culinary Arts	CUAR	XXX	AT
Dance			
Academic Classes	DANC	XXX	H&SS
Performing	DANP	XXX	H&SS
Economics, Business	ECON	XXX	BUS
Education, Early Childhood	EDEC	XXX	H&SS
Education, Teacher Licensure	EDUC	XXX	H&SS
Electric Lineworker	ELCL	XXX	AT
Electronics Technology	ELCT	XXX	AT

Engineering	ENGR	XXX	NS&M
English	ENGL	XXX	H&SS
Environmental Science	ENVS	XXX	NS&M
Finance	FINA	XXX	BUS
Fine Arts	FINE	XXX	H&SS
Foreign Languages			
French	FLAF	XXX	H&SS
German	FLAG	XXX	H&SS
Spanish	FLAS	XXX	H&SS
Other	FLAV	XXX	H&SS
Geography	GEOG	XXX	H&SS
Geology	GEOL	XXX	NS&M
Graphic Art	GRAR	XXX	H&SS
History	HIST	XXX	H&SS
Human Performance and Wellness			
Academic	HPWA	XXX	BUS
Activity	HPWE	XXX	BUS
Humanities	HUMA	XXX	H&SS
Interdisciplinary Study	INTR	XXX	H&SS
Machining and Manufacturing Trades	MAMT	XXX	AT
Management	MANG	XXX	BUS
Marketing	MARK	XXX	BUS
Mass Communications	MASS	XXX	H&SS
Mathematics	MATH	XXX	NS&M
MBA Leveling	MBA	XXX	BUS
Music			
Academic	MUSA	XXX	H&SS
Lessons	MUSL	XXX	H&SS
Performing	MUSP	XXX	H&SS
Nursing	NURS	XXX	BUS
Office Administration	OFAD	XXX	AT
Philosophy	PHIL	XXX	H&SS
Physics	PHYS	XXX	NS&M
Political Science	POLS	XXX	H&SS
Psychology	PSYC	XXX	H&SS
Psychology - Counseling	PSYP	XXX	H&SS
Radiologic Technology	RTEC	XXX	BUS
Social Science	SOCI	XXX	H&SS
Sociology	SOCO	XXX	H&SS
Speech	SPCH	XXX	H&SS
Statistics	STAT	XXX	NS&M
Supplemental	SUPP	XXX	
Telecommunications – Communications Technology	TCOM	XXX	AT
Theatre	THEA	XXX	H&SS
Transportation Services Cluster-Automotive	TSTA	XXX	AT
Transportation Services Cluster-Core	TSTC	XXX	AT
Transportation Services Cluster-Diesel	TSTD	XXX	AT
Transportation Services Cluster-General	TSTG	XXX	AT
Travel, Tourism, and Commercial Recreation Management	TRAV	XXX	BUS
UTEC Courses	UTEC	XXX	AT
Welding	WELD	XXX	AT

*School

AT – Applied Technology
BUS – Business and Professional Studies
H&SS – Humanities and Social Sciences
NS&M – Natural Sciences and Mathematics

ACCOUNTING

School of Business and Professional Studies

ACCT 201 **Principles of Financial Accounting** (3)
A basic course that introduces the concepts of bookkeeping, generally accepted accounting principles, and financial statements. (Fall/Spring)

ACCT 202 **Principles of Managerial Accounting** (3)
A basic course that introduces the use of accounting information in managerial decision making, control, and planning. Prerequisites: ACCT 201, CISB 101. (Fall/Spring)

ACCT 321 **Intermediate Accounting I** (4)
Development of a foundational understanding of Generally Accepted Accounting Principles and their application to external financial statements. Prerequisite: ACCT 201. (Fall)

ACCT 322 **Intermediate Accounting II** (4)
Continuation of ACCT 321. Prerequisite: ACCT 321. (Spring)

ACCT 331 **Cost Accounting I** (3)
Costs and their relationship to planning, controlling, inventory valuation, and decision making. Prerequisite: ACCT 202, CISB 205. (Fall)

ACCT 332 **Cost Accounting II** (3)
Continuation of ACCT 331. Prerequisite: ACCT 331. (Spring)

ACCT 392 **Accounting Information Systems** (3)
A study of the concepts and design of the Accounting Information System with emphasis on the internal control structures, requirements, and professional standards. Prerequisites: ACCT 322; CISB 205. (Spring)

ACCT 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).

ACCT 395 **Independent Study** (1-3)

ACCT 396 **Topics** (1-3)

ACCT 401 **Governmental Accounting** (3)
Accounting principles as they apply to governmental units. Prerequisite: ACCT 322. (Fall)

ACCT 402 **Advanced Accounting** (3)
The course provides coverage of consolidated financial statements, partnership accounting, bankruptcy, estates, trusts, and international operations. Prerequisite: ACCT 322. (Spring)

ACCT 411 **Auditing I** (3)
This course provides coverage of the scope and purposes of the work of a certified public accountant, including study of the theory of auditing, professional ethics, legal liability of the auditor, and internal control. Prerequisites: ACCT 322, STAT 200 or 214, and senior standing. (Fall)

ACCT 412 **Auditing II** (3)
Continuation of ACCT 411. This course provides coverage of the application of auditing theory to financial statements, including examination of the audit programs, procedures, and work papers used in each phase of an audit. Prerequisite: ACCT 411. (Spring)

ACCT 420 **Not-For-Profit Accounting** (3)
Accounting principles as they apply to non-profit organizations such as hospitals, colleges, and charitable organizations. Prerequisite: ACCT 322. (Alternate Spring)

ACCT 421 **Professional Preparation** (1)
Professional résumé preparation and job interviewing skills through mock interviews performed by community professionals utilizing the media studio to videotape and critique the interview and résumé. Prerequisite: junior standing. (Spring)

ACCT 422 **CPA Review and Professional Preparation** **(2)**
Concentrated review of accounting subjects in preparation for the CPA exam. Utilizing self-study techniques. Prerequisite: ACCT 322, 331, 401. (Spring)

ACCT 423 **Controllership** **(3)**
Problems related to the job of corporate controller. Covers accounting controls, cash flow projections, budgets, inventory, control, accounts receivable control, and accounting systems. Prerequisites: ACCT 202, FINA 339. (Alternate Spring)

ACCT 441 **Individual Income Tax** **(5)**
Individual Income Tax designed for BS in accounting degree candidates. Covers the Federal Income Tax Law in-depth as it relates to individual taxpayers. Introduction to various tax reference resources that deal with the subject. Limited enrollment. Prerequisite: ACCT 322, senior standing. (Fall)

ACCT 442 **Advanced Tax and Tax Research** **(5)**
Federal Income Tax Law for corporations, partnerships, estates, trusts, and gifts. In-depth experience with tax research resources, research methodologies and related projects. The student will be required to participate in the Volunteer Income Tax Assistance (VITA) program in order to acquire practical experience in communication with taxpayers and preparation of tax returns. Prerequisite: ACCT 441. (Spring)

ACCT 493 **Cooperative Education** **(3-12)**
See description of ACCT 393.

ACCT 495 **Independent Study** **(1-3)**

ACCT 496 **Topics** **(1-3)**

ACCT 500 **Managerial Accounting** **(3)**
Provides students with an understanding of management information systems which are used in the decision-making process. The class is designed with a "hands-on" approach. It will encourage student participation and interaction through the use of computer projects, case studies, and classroom discussion. Topics covered include basic cost accounting concepts and terminology, product costing and pricing, planning and controlling a business operation through budgets and variance analysis, and managerial decision-making using such techniques as cost-volume-profit analysis and variable costing. (Fall)

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 296 **Topics** **(1-3)**

ADJU 301 **Justice 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 310 **The Police Process** **(3)**
Basic features of policing in the United States. Police work, police organizations, police officers, and the critical problems facing policing today are examined in social and political context. Prerequisite: ADJU 201. (Spring)

ADJU 320 **Corrections** **(3)**
The role of corrections in the criminal justice system: history, guiding philosophies and theories, treatment approaches, custody issues, and supervision of offenders on probation and parole. Prerequisite: ADJU 201, junior standing and/or consent of instructor. (Spring)

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 495 **Independent Study** (1-3)

ADJU 496 **Topics** (1-3)

ADJU 499 **Internship** (3)
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 180 clock hours of service. Prerequisites: senior status in the Administration of Justice or Criminology concentration and consent of instructor. (Fall/Spring)

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 296 **Topics** (1-3)

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 **Ethnographic Methods** (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 320 **The U.S. as a Foreign Culture** (3)
Study of the U.S. from an outsider's perspective, understanding and intellectually building upon foreign views of the U.S. Students will learn how to objectify and analyze U.S. culture in its many forms. Prerequisites: ANTH 201. (On demand)

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 150. (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 ascribed roles 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. (Alternate Fall)

ANTH 380 **Language and Culture** (3)
Social, psychological, and epistemological aspects of language. Critical assessment of the use of language in writing about anthropology. Prerequisites: ANTH 201. (Alternate Fall)

ANTH 390 **Ethnic Groups** (3)
Exploration of ethnicity as a global and historical phenomenon. Drawing on a variety of examples from around the world, the course will be concerned with the question of why humans have invested, and continue to invest, their origins with political and personal significance. Prerequisite: ANTH 201. (Alternate Spring)

ANTH 395 **Independent Study** (1-3)

ANTH 396 **Topics** (1-3)

ANTH 405 **Globalization and Cultural Change** (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. (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. (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. Two hours of lecture and two hours of studio per week. (Fall/Spring)

ARTE 102 **Three Dimensional Design** (3)
The principles of form and function in three-dimensional design with emphasis on color theory and use. Two hours of lecture and two 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. This course is intended for non-art majors. Art majors should take ARTE 118 instead. (Fall/Spring)

ARTE 118 **Survey of Art History, Ancient-Modern** (3)
Introduction to the major periods in the history of art, from prehistoric to contemporary. Within each period, the course will examine the development of primary artistic media, such as painting, sculpture, and architecture, as well as various minor media. Designed for students with some background in art history, or an interest in majoring or minoring in art. (Fall/Spring)

ARTE 121 **Basic Photography for Teachers** (1)
Principles and techniques of photography, including the functions of camera parts and accessories. Two hours lecture per week; seven and one-half weeks. (Alternate Spring, 1st module)

ARTE 122 **Basic Darkroom Techniques** (1)
Techniques and skills for darkroom procedures as related to black and white film processing and print making, including enlarging. Prerequisite: ARTE 121 and consent of instructor. (Alternate Spring, 2nd module)

ARTE 151 **Basic Drawing** (3)
Freehand drawing of figural and environmental subjects through perceptual exercises and common drawing media. Six hours of studio. (Fall/Spring)

ARTE 190 **Mixed Media** (3)
Use of a variety of two-dimensional media, such as ink, pastels, dye, watercolor (both transparent and opaque), acrylic, and tempera, in the creative process. Prerequisite: ARTE 151. (Spring)

ARTE 193 **Airbrush** (2)
Prerequisite: ARTE 151 or consent of instructor. Four hours studio.

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. (On demand)

ARTE 220 **Jewelrymaking for Teachers** (1)
Introduction to teaching jewelry design and fabrication in K-12 school settings. Prerequisites: ARTE 102 or consent of instructor. (Alternate Fall)

ART STUDIO COURSES
These courses introduce traditional materials of the visual arts through studio experiences with lectures on theory and history of the media. One hour of lecture and four hours of studio per week.

ARTE 221 **Metalsmithing** (3)
Prerequisite: ARTE 102 or consent of instructor.

ARTE 231 **Fibers** (3)
Prerequisite: ARTE 101 or consent of instructor. (Alternate Fall)

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. (Alternate Fall)

ARTE 282 **Sculpture – Foundry** (3)
Prerequisite: ARTE 102 or consent of instructor. (Fall/Spring)

ARTE 283 **Sculpture – Carving and Construction** (3)
Prerequisite: ARTE 102 or consent of instructor. (Spring)

ARTE 284 **Ceramic Sculpture** (3)
Prerequisite: ARTE 102 or consent of instructor. (Alternate Fall)

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 230 **Fiber Art Techniques for Teachers** (2)
Introduction to teaching fiber art techniques and fabrication in K-12 school settings. Prerequisites: ARTE 101 or consent of instructor. (Alternate Spring)

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. 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, on demand)

ARTE 296 **Topics** **(1-3)**

ARTE 300 **Exhibitions and Management** **(3)**
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 302 **Native Arts of North America** **(3)**
Exploration and examination of the art of tribal peoples of North America, with special attention to the peoples' view of art and beauty as integral to life. Students will investigate the blending of oral history and art, as well as hands-on artistic techniques. Prerequisites: ARTE 211 or ANTH 201 or HIST 131 or HIST 132, or consent of instructor. (Spring)

ARTE 311 **Ancient and Medieval Art** **(3)**
Comprehensive survey of the development of art from the prehistoric and ancient periods through the emergence of the classical art of Greece and Rome, culminating in an examination of the art of the Middle Ages. Prerequisites: ARTE 118 or consent of instructor. (Alternate Fall)

ARTE 312 **Renaissance and Baroque Art** **(3)**
Comprehensive survey of the development of art from the emergence of the Renaissance through the Baroque and Rococo styles. Prerequisites: ARTE 118 or consent of instructor. (Spring)

ARTE 315 **Nineteenth-Century Art** **(3)**
Comprehensive survey of the major art movements of the nineteenth century: Neoclassicism, Romanticism, Academic Art, the invention of photography, Realism, Impressionism, Post-Impressionism, Symbolism, and Art Nouveau. Prerequisites: ARTE 118 or consent of instructor. (Fall)

ARTE 316 **Twentieth-Century Art** **(3)**
Comprehensive survey of the major art movements of the twentieth century, from Cubism and Fauvism to recent developments in contemporary art. Prerequisite: ARTE 118 or consent of instructor. (Spring)

INTERMEDIATE 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, 118, and at least three hours of the same Processes and Media at the 200 level.

ARTE 321 **Metalsmithing** **(3)**
Prerequisites: ARTE 151, 221.

ARTE 342 **Intermediate Ceramics** **(3)**
Prerequisites: ARTE 242. (Fall/Spring)

ARTE 351 **Drawing** **(3)**
Prerequisites: ARTE 101, 251

ARTE 371 **Printmaking** **(3)**
Prerequisites: ARTE 271. (Fall)

ARTE 372 **Printmaking** **(3)**
Prerequisites: ARTE 272. (Spring)

ARTE 381 **Sculpture – Modeling and Moldmaking** **(3)**
Prerequisites: ARTE 281. (Alternate Fall)

ARTE 382 **Sculpture – Foundry** **(3)**
Prerequisites: ARTE 282. (Fall/Spring)

ARTE 383 **Sculpture – Carving and Construction** **(3)**
Prerequisites: ARTE 283. (Spring)

ARTE 384 **Ceramic Sculpture** **(3)**
Prerequisites: ARTE 102, 241. (Alternate Fall)

ARTE 391, 392 **Painting** (3,3)
Prerequisites: ARTE 291. (Fall/Spring)

ARTE 395 **Independent Study** (1-3)

ARTE 396 **Topics** (1-3)

ARTE 410 **Elementary Art Education Methods** (2)
Theory, methods and materials for teaching art to children, K-6. Prerequisites: EDUC 211 and 343; EDUC 341 (Elementary/Liberal Arts Majors) or EDUC 342 (K-12 majors). (Alternate Fall)

ARTE 410L **Field/Studio Experience – Elementary Art Education Methods** (1)
Required field and studio experience on the elementary level for K-12 art education majors. Prerequisites: EDUC 211, 342, 343; enrollment in the K-12 Art Education program; junior or senior status. (Alternate Fall)

ARTE 412 **Secondary Art Education Methods** (4)
Theory, methods, and materials for teaching art in middle schools and senior high schools. Prerequisites: EDUC 211, 342, 343; enrollment in the K-12 Art Education program; junior or senior status. (Spring)

ADVANCED STUDIOS
Specialized studio courses intended for senior-level students, culminating in a faculty examination of each student's portfolio and an exhibition of the student's work. One hour of lecture and four hours of studio per week. Prerequisite: at least three hours in the same medium at the Intermediate Studios (300) level.

ARTE 421 **Metalsmithing** (3)
Prerequisite: ARTE 321.

ARTE 441 **Glaze Calculation** (3)
Prerequisite: Consent of instructor. (On demand)

ARTE 442 **Kiln Construction** (3)
Prerequisites: Consent of instructor. (Alternate Spring)

ARTE 443 **Pottery Production** (3)
Prerequisites: ARTE 242 and 342. (Fall/Spring)

ARTE 451, 452 **Drawing** (3)
Prerequisites: ARTE 351. (Fall)

ARTE 471 **Printmaking** (3)
Prerequisites: ARTE 371. (Fall)

ARTE 472 **Printmaking** (3)
Prerequisites: ARTE 372. (Spring)

ARTE 481 **Sculpture – Modeling and Moldmaking** (3)
Prerequisites: ARTE 381. (Alternate Fall)

ARTE 482 **Sculpture – Foundry** (3)
Prerequisites: ARTE 382. (Fall/Spring)

ARTE 483 **Sculpture – Carving and Construction** (3)
Prerequisites: ARTE 383. (Fall/Spring)

ARTE 484 **Ceramic Sculpture** (3)
ARTE 384 (Alternate Fall)

ARTE 491, 492 **Painting** (3,3)
Prerequisites: ARTE 315 or 316, and 391, and 392. (Fall/Spring)

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 **General Human Biology** (3)
BIOL 101L **General Human Biology Laboratory** (1)
Scientific method, ecology, pollution, drugs, reproduction, cancer, heart disease, nutrition, and selected body structure and function relationships. Labs will include required field trips. Can be taken for graduation or general education credit by biology majors who have completed no more than 10 hours in BIOL. Three lectures and one two-hour laboratory per week (Fall/Spring)

BIOL 102 **General Organismal Biology** (3)
BIOL 102L **General Organismal Biology Laboratory** (1)
Selected body structure and function relationships, genetic engineering, animal phylum relationships, evolution, plant growth and development. Labs will include dissections and some required field trips. Can be taken for graduation or general education credit by biology majors who have completed no more than 10 hours in BIOL. Three lectures and one two-hour laboratory per week. (Spring)

BIOL 105 **Attributes of Living Systems** (4)
BIOL 105L **Attributes of Living Systems Laboratory** (1)
Cell structure and function, cell energetics and biochemistry genetics, ecology and evolution. Four lectures and one two-hour laboratory per week. High school chemistry recommended (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)
Learning skills necessary for biologists working in the field, including wilderness survival, wilderness medicine, camping/climbing skills, edible/poisonous plants, urban survival skills, and epidemiological/radiation/chemical threats. Three one-hour lectures per week. (Spring)

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/Spring)

BIOL 145 **Human Anatomy and Physiology II** (3)
BIOL 145L **Human Anatomy and Physiology II Laboratory** (1)
Continuation of Human Anatomy and Physiology which covers additional body systems and disease processes. For students with an interest in pre-med, nursing, human health and biology. Three one-hour lectures and one two-hour laboratory per week. Prerequisites: BIOL 141/141L. (Spring)

BIOL 154 **Technobiology** (2)
BIOL 154L **Technobiology Laboratory** (2)
Exploration of the electrical, chemical and biological languages of life. Students will learn to program life-like events, build robots, and approach the study of life from the point of view of synthesis instead of analysis. This course may be used for honors credit if extra criteria are met as dictated by instructor. (Alternate Fall)

BIOL 196 **Topics** (1-3)
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 205 **Health, Nutrition, and Safety** (3)
Study of the interrelationships of physical care to ensure a positive growth environment for children. Focus areas shall include: promotion and protection of child health through studies of regulations and community resources; health education activities appropriate for early childhood educators; nutrition standards, preparation, and sanitation. (Fall)

BIOL 211 **Ecosystem Biology** (4)
BIOL 211L **Ecosystem Biology Laboratory** (1)
Ecological studies utilizing the concepts of population biology: energetics, dynamics, distribution, and sociology. Overnight 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. (Alternate Summer)

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/Spring)

BIOL 250 **Introduction to Medical Microbiology** (3)
BIOL 250L **Introduction to Medical Microbiology Lab** (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 296 **Topics** (1-3)

BIOL 301 **Principles of Genetics** (3)
BIOL 301L **Principles of Genetics Laboratory** (1)
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 302 recommended. (Fall)

BIOL 302 **Cellular Biology** (3)
BIOL 302L **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. (Fall)

BIOL 310 **Developmental Biology** (3)
BIOL 310L **Developmental Biology Laboratory** (2)
Embryonic growth and development of plants and animals. Also errors in normal development, cancer, aging, and related topics. Three lectures and two two-hour laboratories per week. (Alternate Spring).

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 Fall)

BIOL 331 **Insect Biology** (3)
BIOL 331L **Insect Biology Laboratory** (2)
Insect taxonomy, evolution, ecology, and physiology. Insect collection required. Three lectures and two two-hour laboratories per week. Prerequisites: BIOL 106. (Fall)

BIOL 332 **Introduction to Geographic Information Systems** (2)
BIOL 332L **Introduction to Geographic Information Systems Lab** (1)
Basic knowledge of the fundamentals of GIS with regard to theoretical, technical, and application issues. Prerequisites: ENGR 131, GEOL 111/111L or GEOL 113/113L (recommended). (Fall/Spring)

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. (Spring)

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. Prerequisites: BIOL 302 and BIOL 302L, or BIOL 301 and BIOL 301L. (Spring)

BIOL 350 **Microbiology** (3)
BIOL 350L **Microbiology Laboratory** (1)
Growth, morphology, metabolism, genetics and ecology of microorganisms. Includes aspects of industrial microbiology, clinical microbiology, and genetic engineering. Three lectures and one three-hour laboratory per week. Prerequisites: BIOL 105, and CHEM 121/121L or CHEM 131/131L. (Spring)

BIOL 387 **Structured Research** (1-3)
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. May be repeated for up to 6 credit hours. Prerequisites: sophomore or junior standing, or consent of instructor. (Fall/Spring)

BIOL 388 **Teaching Science in the Secondary School** (3)
BIOL 388L **Teaching Science in the Secondary School Laboratory** (1)
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 405 **Advanced Ecological Methods** (3)
BIOL 405L **Advanced Ecological Methods Laboratory** (2)
Examination of quantitative methods in population, community, and ecosystems ecology. Extensive writing, computer work and field trips are required. Three lectures and two two-hour laboratories per week. Prerequisites: BIOL 105, 106, 107; STAT 311 is recommended. (Alternate Spring)

BIOL 406 **Plant-Animal Interactions** (3)
Ecological, evolutionary, and applied approaches to the studies of herbivory, ant-plant interactions, pollination, and seed dispersal. Prerequisites: BIOL 105, 106, 107; BIOL 331 is recommended. (Spring)

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 Laboratory** (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 Fall)

BIOL 421 **Plant Physiology** (3)
BIOL 421L **Plant Physiology Laboratory** (2)
Plant-water relationships, plant mineral nutrition, photosynthesis, plant growth and development at the molecular and cellular level to account for plant growth at the organismal level. Three lectures and two two-hour laboratories per week. Prerequisites: BIOL 107, CHEM 121 and also recommended CHEM 122. (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 426 **Introduction to Electron Microscopy** (2)
BIOL 426L **Introduction to Electron Microscopy Laboratory** (2)
History, theory and techniques of Electron Microscopy science. Some detailed knowledge of biology, histology, chemistry and physics is required to thoroughly and competently investigate selected specimens. Special attention will be paid to the operation of the microscope at Mesa State College. Prerequisites: restricted to juniors and seniors with instructor approval. (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 projec 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. (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 and one year of chemistry, and junior or senior standing. (Fall)

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. Two lectures and two two-hour laboratories per week. 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 **Advanced Research** (1-3)
Provides students with an individualized research experience on a topic approved and directed by a specific faculty member. A detailed report in the form of a scientific journal article must be provided to the instructor. May be repeated for up to 6 credit hours. Prerequisites: BIOL 482 or consent of instructor; BIOL 387 is highly recommended. (Fall/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 Business and 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 105 **Freshman Business Seminar** (2)
Introduction to the culture of business for prospective majors. Operational strategies and teamwork are developed via computer simulation. Students will gain exposure to a wide variety of historical and current leaders through readings and discussions. Cannot be taken for credit by students who have completed more than six credit hours of business 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: ENGL 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. (On demand)

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. (On demand)

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/Spring)

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. (Fall)

BUGB 493 **Cooperative Education** **(3-12)**
See description of BUGB 393.

BUGB 495 **Independent Study** **(1-3)**

BUGB 496 **Topics** **(1-3)**

BUGB 500 **Advanced Business Law and Ethics** **(3)**
Emphasizes the regulations, statutes and cases that impact business on a daily basis. Topics covered include contract law, negotiations, labor law, the Uniform Commercial Code, and the law of business organizations to include limited liability companies. (Spring)

BUGB 510 **Global Business** **(3)**
Explores international management concepts and procedures and their importance to modern managers. Operating in multinational, multi-cultural managerial environment, the modern manager must understand business and management from a global perspective. Emphasis is placed on comparing and contrasting management practices in different nation-states and how this might affect decisions concerning risk, investment, human resources, finances, operations, manufacturing and production in a multi-national business. (On Demand)

BUGB 520 **Seminar in Current Business Topics** **(3)**
Develops topics of current interest in the business world. Areas included are effective communication strategies, ethics, and the global dimension of business. (On Demand)

BUGB 530 **Research Design** **(3)**
Examines the design of research projects. Topics will include selection of the problem, secondary data, historical research, descriptive research, experimental research, the tools of research, and interpretation of data. (On Demand)

BUGB 590 **Thesis** **(6)**
A comprehensive research project of original design. (On Demand)

BUGB 595 **Cooperative Education** **(3)**
The cooperative education course provides the student with the opportunity to apply classroom theory to on-the-job experiences related to classroom instruction. During the cooperative education course, the students work off-campus at professional business positions. The student will be required to write his/her own course objectives with the approval of the cooperative education graduate advisor. Prerequisites: ACCT 500, BUGB 500, FINA 500, MANG 500, MANG 501, MANG 510, MARK 500. (Fall/Spring)

COMPUTER DRAFTING TECHNOLOGY

School of Applied 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. Two one-hour lectures and one two-hour laboratory per week. 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. One one-hour lecture and two one and one-half laboratories per week. Prerequisites: CADT 101 and MAMT 105 or consent of instructor. (On demand)

CADT 107 **Computer Aided Drafting** (1)
CADT 107L **Computer Aided Drafting Laboratory** (2)
Advanced work in computer aided drafting principles including 2-D, 3-D, shading, etc. One one-hour lecture and two one and one-half hour laboratories per week. Prerequisites: CADT 106, 106L or consent of instructor. (On demand)

CADT 108 **Basic CAD – Micro Station** (1)
CADT 108L **Basic CAD – Micro Station Laboratory** (2)
Offers the student basic principles of computer aided drafting through the development of practical drawing problems using micro station software on the computer. One one-hour lecture and two one and one-half laboratories per week. Prerequisites: CADT 101, MAMT 105 or consent of instructor. (On demand)

CADT 109 **CAD – Micro Station Laboratory** (1)
CADT 109L **CAD – Micro Station Laboratory** (2)
Advanced work in computer aided drafting principles including 2-D, 3-D shading, etc, with the use of micro station software. One one-hour lecture and two one and one-half hour laboratories per week. Prerequisite: CADT 108/108L. (On demand)

CADT 110 **CAD Application** (2)
CADT 110L **CAD Application Laboratory** (2)
This 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 advisor. Two one-hour lectures and two one and one-half hour laboratories per week. Prerequisites: CADT 107, 107L or CADT 109, 109L. (On demand)

CADT 120 **CAD – Mechanical/Electrical** (1)
CADT 120L **CAD – Mechanical/Electrical Laboratory** (2)
This course will focus on the link between electronics and electro/mechanical components. Students will be introduced to the interpretation of electrical, hydraulic and pneumatic diagrams using proper symbols and JIC standards. Also covered will be materials, layout, symbols, voltage, and standards through practical application drawings. One one-hour lecture and two one and one-half hour laboratories per week. Prerequisites: CADT 107, 107L or CADT 109, 109L, and ELCT 110, 110L. (Fall)

CADT 121 **CAD-Electronic Design/Layout** (1)
Fundamentals of CAD design for electronic projects. Emphasis on the creation of electronic schematics and necessary artwork to fabricate a printed circuit board. Prerequisites: Student must be in his/her 4th semester and/or have instructor approval. (Fall)

CADT 130 **CAD – Civil** (1)
CADT 130L **CAD – Civil Laboratory** (2)
Civil drafting will explore the aspects of current day mapping and topography, instruments, conventions and practices, contours, traverses, profiles, surveying, and photogrammetry through CAD drawings. Students will be introduced to GIS, graphical interface systems. One one-hour lecture and two one and one-half hour laboratories per week. Prerequisites: CADT 107, 107L and/or CADT 109/109L. (Spring)

CADT 140 **CAD – Architectural Theory** (2)
Architectural theory will introduce the student to three major areas of architecture: basic structures and their design, building codes and career opportunities. (Fall)

CADT 141 **Structural Materials** (3)
This course will identify the properties and applications of the materials of industry. Codes, standards and testing will be emphasized in the fields of architecture. There will be an introduction to mechanical, electrical, plumbing and systems requirement. (Fall)

CADT 142 **CAD – Residential Architecture** (1)
CADT 142L **CAD – Residential Architecture Laboratory** (2)
Residential Architectural CAD will provide the student with a realistic residential project that will begin with schematic design and take him/her through to construction documents. Construction documents will include: site plan, floor plan, exterior elevations, foundation plan, floor framing plan, roof framing plan, building section, and a variety of construction details. One one-hour lecture and two one and one-half hour laboratories per week. Prerequisites: CADT 107, 107L and or CADT 109, 109L and CADT 140. (Fall)

CADT 143 **CAD – Commercial Architecture** (1)
CADT 143L **CAD – Commercial Architecture** (2)
Commercial Architectural CAD will emphasize the creation of commercial project plans that will begin with schematic design and continue through to construction documents. Construction documents will include site plan, foundation floor slab plan, roof framing plan, building section and a variety of construction details. One one-hour lecture and two one and one-half hour laboratories per week. Prerequisites: CADT 107, 107L and/or CADT 109, 109L and CADT 140. (Spring)

CADT 195 **Independent Study** (1-3)

CADT 196 **Topics** (1-3)

CADT 296 **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. (Fall/Spring)

CHEM 121 **Principles of Chemistry** (4)
CHEM 121L **Principles of Chemistry Laboratory** (1)
Introduction to fundamental principles of chemistry. Designed for students planning a 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, electro chemistry, 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 196 **Topics** (1-3)

CHEM 211 **Quantitative Analysis** (3)
CHEM 211L **Quantitative Analysis Laboratory** (1)
Classical methods of analysis, treatment of experimental data, and the underlying logic of quantitative methods. Topics include gravimetric, volumetric, and potentiometric methods. Three lectures and one three-hour laboratory per week. Prerequisite: CHEM 132. (Fall)

CHEM 296 **Topics** (1-3)

CHEM 300 **Environmental Chemistry** (4)

Aquatic and atmospheric chemistry. Basic chemical, physical and biological properties of organic pollutants. Topics include smog formation, stratospheric ozone depletion, greenhouse gases, acid mine waste formation, biogeochemistry, and bioaccumulation of halogenated organics. Prerequisites: CHEM 122 or 132. (Alternate Spring)

CHEM 311, 312 **Organic Chemistry** (4,4)
CHEM 311L, 312L **Organic Chemistry Laboratory** (1,1)

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 315 **Biochemistry** (3)
CHEM 315L **Biochemistry Laboratory** (1)

Classical biochemistry concerned with the control of metabolism, the production of energy, the relationship of structure to function, carbohydrates, lipids, proteins, and nucleic acids. Three lectures and one three-hour laboratory per week. Prerequisite: CHEM 312/312L. (Fall)

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 341 **Advanced Laboratory I** (2)
CHEM 342 **Advanced Laboratory II** (2)

Experiments from analytical, inorganic, organic, physical, and biological chemistry designed to show the application of theory to chemical problems. In addition to a list of possible core experiments, each student chooses other experiments according to individual interests. Two three-hour laboratories per week. Prerequisites: CHEM 211/211L; 312/312L; and 321. (Spring)

CHEM 395 **Independent Study** (1-3)

CHEM 396 **Topics** (1-3)

CHEM 397 **Structured Research** (1-3)

Chemical research under the direct guidance of a faculty member. Designed for sophomore through senior level students. Prerequisite: Permission of instructor. (On demand)

CHEM 411 **Main Group Elements** (3)

A study of the periodic trends in non-transition elements. Topics include atomic and molecular structure, periodicity, acid-base relationships, and the descriptive chemistry of non-transition elements. Prerequisite: CHEM 322. (Alternate Fall)

CHEM 412 **Transition Elements** (3)

A study of the periodic trends in transition elements. Topics include coordination compounds, symmetry and group theory, spectroscopy, and the descriptive chemistry of the transition elements. Prerequisite: CHEM 411. (Alternate Fall)

CHEM 421 **Advanced Organic Chemistry I** (3)

Selected topics in organic chemistry are discussed in detail. Prerequisites: CHEM 312, 322. (Fall)

CHEM 422 **Advanced Organic Chemistry II** (3)

Similar in content to CHEM 421, but without overlap in topics. CHEM 421 is not a prerequisite for 422. Prerequisites: CHEM 312, 322. (Spring)

CHEM 431 **Instrumental Analysis** (3)
CHEM 431L **Instrumental Analysis Laboratory** (1)

Modern instrumental methods of analysis. Topics include signals and noise, atomic spectroscopy, molecular spectroscopy, electroanalytical chemistry and chromatograophic separation methods. Three lectures and one 3-hour laboratory per week. Prerequisite: CHEM 211/211L. (Spring on demand)

CHEM 482 **Senior Research I** (2)
CHEM 483 **Senior Research II** (2)
A formal research project undertaken with the guidance of a faculty member. The results will be presented as a formal scientific paper in a format suitable for publication. (Fall/Spring)

CHEM 494 **Seminar** (1)
Student, faculty, and other speakers present a variety of topics in chemistry and related fields. Prerequisites: Chemistry major with senior standing or consent of instructor. (Fall/Spring)

CHEM 495 **Independent Study** (1-3)

CHEM 496 **Topics** (3)

COMPUTER INFORMATION SYSTEMS

School of Business and Professional Studies

In order to take any of the following computer science courses, each listed prerequisite (or an equivalent course) must be completed with a grade of "C" or better. The instructor may waive the prerequisite.

CISB 101 **Business Information Technology** (3)
Basic concepts of computers, with focus on terminology, hardware, software, and the implications of computer technology to society. Business use of computers including discussion of computer security, privacy of information, future implications, purchasing computers and software, and business application. Introduction to current business software. (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 131 **COBOL Programming** (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 201 **Fundamentals of Information Systems** (3)
Introduction to systems theory and informational technology. Course will focus on computing and on system growth, re-engineering, and organizational roles. (Fall/Spring)

CISB 205 **Advanced Business Software** (3)
Students become proficient through a combination of lecture, demonstration, and projects in the advanced use of electronic spreadsheets, word processing, and data base management software. (Fall/Spring)

CISB 295 **Independent Study** (1-3)

CISB 321 **Assembler Language** (3)
See CSCI 321 for course description.

CISB 392 **Information Systems Theory and Practice** (3)
Exploration and application of Information Systems theory. Course examines how IS theory relates to an organization's success, management roles, users, and IS professionals. Prerequisites: CISB 205 or permission of instructor. (Fall/Spring)

CISB 395 **Independent Study** (1-3)

CISB 396 **Topics** (1-3)

CISB 400 **Data Communications and Network Management** (3)
Current technology in data communications and networks used in a business organization, including management of data communications and networks; hardware, media, and software; LANs; distributed data processing, telecommunications, current issues and future trends. Prerequisite: CISB 392 or consent of instructor. (Spring)

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: CISB 392 and at least two programming courses or consent of instructor. (Spring)

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 205, 442, ACCT 202. (Fall)

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: CISB 442 or consent of instructor. (Spring)

CISB 495 **Independent Study** (1-3)

CISB 496 **Topics** (1-3)

CISB 500 **Management Information Systems** (3)
Reviews the development of an overall framework for analyzing the use of information by organizations along with examples of different types of information systems. The conceptual foundations of information systems and the development, operation, management, uses, parties, control, structure, and impact of these systems will be addressed. The analysis and design of information systems is stressed through case study and projects, emphasizing the role of computing in information systems and design of computer-based systems, expert systems, decision support systems and executive information systems. (On Demand)

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 106 **Web Page Design** (3)
Various aspects of Web page design such as HTML, Web servers, Web graphics/sound/video, and programs that automate the design of Web sites and scripts. Students will progressively develop their own sites throughout the term using software tools and concepts presented in the class. One class day per week will be scheduled in a computer laboratory.
Prerequisites: Familiarity with Windows (some programming experience recommended) (On demand)

CSCI 110 **Beginning Programming:** (3)
Introduction to computer programming. Includes syntax and semantics for sequential, selection, and repetition structures, program design and modularization simple and structured data types, and file I/O. Designed for majors outside the scientific disciplines. "Subtitle" indicates language of implementation. Prerequisites: MATH 113 or consent of instructor. (Fall/Spring)

CSCI 110L **Beginning Programming Laboratory** (1)
An optional laboratory course to be taken as a co-requisite to CSCI 110. This lab is intended for those students currently enrolled in CSCI 110 who have little or no previous programming/computer experience. The student taking this course will complete several computer assignments designed to increase the student's knowledge of programming, debugging, and program design. "Subtitle" indicates language of implementation. Prerequisites: MATH 113 or consent of instructor. Corequisite: CSCI 110. (Fall/Spring/Summer)

CSCI 111 **Computer Science I** (4)
Introduction to problem solving techniques with emphasis on modularity, abstraction, analysis, and correctness of algorithm design. Using C/C++ 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** **(4)**

Continuation of CSCI 111 with emphasis on algorithm design and analysis, procedural abstraction, data abstraction, and quality programming style. Topics covered include distinction between dynamic and static variables; various implementations of elementary stacks, queues, trees and lists; comparison of recursive and iterative algorithms, program correctness; and hierarchical design principles. Programming exercises will focus on modularity of design and data abstraction. Prerequisites: CSCI 111. (Fall/Spring)

CSCI 120 **Technical Software** **(3)**

Microcomputer software used primarily for engineering. Introduction to symbolic mathematics language, word processing, spread sheet, database management, and graphics. Prerequisite: MATH 113. (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 180 **C as a Second Language** **(4)**

An introduction to the C programming language for students who are already experienced with another programming language. Basic syntax and semantics of C data types, control structures, file I/O, and library routines. Prerequisites: CSCI 111 or CSCI 131/131L or consent of the instructor. (Spring)

CSCI 196 **Topics** **(1-3)**

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)

CSCI 296 **Topics** **(1-3)**

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 333 **UNIX Operating Systems** **(3)**

Introduction to systems programming with UNIX. Topics covered include elementary and advanced user commands, file handling, processes control, library routines, device drivers, sheer programming, and UNIX utilities. Shell programming is a major part of the course. Prerequisites: CSCI 112 or knowledge of C++/C. (Spring)

CSCI 337 **Advanced Applications and User Interface Design** **(3)**

Advanced program language constructs such as information hiding, operator and function overloading, and exception handling. Emphasis will be on applying these concepts to representation of graphical images and effective user interfaces in a windows environment. Prerequisite: CSCI 112. (Fall/Spring)

CSCI 350 **Software Engineering** (3)
Covers philosophy of software engineering, software project planning, requirement analysis, software system design and strategies, software design tools, program and system testing, system maintenance, and economics. Prerequisite: CSCI 111, 112, 250. (Spring)

CSCI 375 **Object Oriented Programming** (3)
Advanced programming techniques using the object-oriented paradigm, with emphasis on abstractness of design, encapsulation, inheritance, and polymorphism. Additional topics include design tools and methodologies for determining classes, responsibilities, collaborations, and hierarchies. Prerequisites: CSCI 250, 337. (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 241, 330. (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 250. (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. Some knowledge of C is required. Prerequisite: CSCI 250, 321. (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. (On demand)

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)

CULINARY ARTS

School of Applied Technology

CUAR 121 **Introduction to Food Production** (1)
Fundamental principles of commercial kitchen operations. Prerequisite: CUAR 155 (may be used as corequisite with permission of instructor). (Spring On Demand)

CUAR 122 **Introduction to Hot Foods** (1)
Fundamental principles of stocks, soups, sauces, gravies, and products in the kitchen. Prerequisites: CUAR 121, CUAR 155 (may be used as corequisites with permission of instructor). (Spring On Demand)

CUAR 123 **Introduction to Garde Manger** (1)
Fundamental principles of cold foods and non-alcoholic beverage preparation. Prerequisites: CUAR 121, CUAR 155 (may be used as corequisites with permission of instructor). (Spring On Demand)

CUAR 124 **Food Production Applications** (1)
Basic cooking principles and practices in the production of stocks, soups, sauces and gravies, and vegetables, starches, fruits, salads, and dressing. Prerequisites: CUAR 121, CUAR 155 (may be used as corequisites with permission of instructor). (Spring On Demand)

CUAR 131 **Vegetables Starches, Pastas, Breakfast and Short Order Cookery** (1)
Preparation of vegetables, starches, breakfast and grilled items. Prerequisites. CUAR 124, CUAR 155 (may be used as corequisites with permission of instructor). (Spring On Demand)

CUAR 132 **Center of the Plate: Meat** (1)
Preparation of a variety of meat dishes. Prerequisites: CUAR 124, CUAR 155 (may be used as corequisites with permission of instructor). (Spring On Demand)

CUAR 133 **Center of the Plate: Poultry, Fish** (1)
Preparation of a variety of seafood and poultry dishes. Prerequisites: CUAR 124, CUAR 155 (may be used as corequisites with permission of instructor). (Spring On Demand)

CUAR 134 **Food Production Applications II** (1)
Practical application of food production techniques related to courses CUAR 121, CUAR 122, CUAR 123, CUAR 134, CUAR 131, CUAR 132, and CUAR 133. Prerequisite: CUAR 124. Corequisites: CUAR 131, 132, and 133, or permission of instructor. (Fall/Spring)

CUAR 136 **Beverage Management** (2)
Principles and techniques of beverage management as they apply to: alcoholic/non-alcoholic beverages, wines, champagne, storage, purchasing, and legal concerns in the food service industry. (Fall/Spring)

CUAR 138 **Dining Room Management** (3)
"Front of the house" operations common to the food service industry. Prerequisite: CUAR 155 (may be used as a corequisite with permission of instructor). (Spring On Demand)

CUAR 141 **Basic Baking Principles and Ingredients** (1)
Fundamentals of baking terminology, principles of baking, and the characteristics and functions of the main ingredients used in bakery production. Prerequisite: CUAR 155 (may be used as a corequisite with permission of instructor). (Spring On Demand)

CUAR 142 **Basic Yeast-Raised Products and Quick Breads** (1)
Application of basic yeast-raised baking principles. Prerequisites: CUAR 141, CUAR 155 (may be used as corequisites with permission of instructor). (Spring On Demand)

CUAR 143 **Cakes, Pies and Pastries, Cookies** (1)
Application of basic cake, pie, pastry, and cookie production. Prerequisites: CUAR 141, CUAR 155 (may be used as corequisites with the permission of instructor). (Spring On Demand)

CUAR 144 **Baking Applications** (1)
Application of basic baking principles and production. Prerequisites: CUAR 141, CUAR 155 (may be used as corequisites with permission of instructor). (Spring On Demand)

CUAR 155 **Applied Food Service Sanitation** (2)
Study of proper food handling techniques and sanitary regulations in the food service industry. (Spring On Demand)

CUAR 156 **Nutrition for the Food Service Worker** (3)
Fundamentals of nutrition as they apply to the food service industry. (Spring On Demand)

CUAR 157 **Menu Planning** (3)
Fundamentals of planning menus. (Spring On Demand)

CUAR 161 **Cost Controls** (3)
Fundamentals of cost control as it applies to the food service industry. (Spring)

CUAR 162 **Cost, Purchasing, Pricing** (4)
A continuation of CUAR 161 where students will learn the fundamentals of cost control as it applies to the food service industry. Prerequisites: CUAR 157, CUAR 161 (may be used as a corequisite with permission of instructor). (Fall)

CUAR 165 **Computer Applications in the Food Service Industry** (3)
Use of computer skills to perform word processor, spreadsheet, data base functions, and Internet as it relates to the food service industry. (Spring On Demand)

CUAR 255 **Food Service Supervision** (3)
Development and application of managerial skills as applied to the food service industry. (Spring On Demand)

CUAR 256 **Food Service Marketing** (3)
Development and application of marketing concepts as applied to the food service industry. (Spring On Demand)

CUAR 299 **Internship** (2,4,6,8)
Industry supervised hands on work experience in the day to-day operation, duties, and responsibilities of the food service worker. Consent of instructor is required. (Spring On Demand)

DANCE

School of Humanities and Social Sciences

Academic

DANC 115 **Dance Appreciation** (3)
Exploration of the roots and trends of the art of dance from the primitive to the contemporary. Introduction of esthetic guidelines for looking at dance as it relates to America and the world. (Spring)

DANC 170 **Theory and Practice Modern Dance** (1)
Theory and practice of modern dance. Prerequisites: HPWE 170 or consent of instructor. (Fall/Spring)

DANC 175 **Theory and Practice Jazz Dance** (1)
Fundamentals of jazz dance including theory and technique. Prerequisite: HPWE 175 or consent of instructor. (Fall/Spring)

DANC 176 **Theory and Practice Ballet** (1)
Theory and practice of ballet. Prerequisite: HPWE 176 or consent of instructor. (Fall)

DANC 178 **Theory and Practice Tap Dance** (1)
Fundamentals of the theory and practice of tap dance. Prerequisite: HPWE 178. (Fall/Spring)

DANC 196 **Topics** (1-3)

DANC 253 **Beginning Improvisation and Composition in Dance** (3)
Theory and practice in basic principles of dance composition. (Alternate spring)

DANC 270 **Theory and Practice Modern Dance** (1)
Intermediate work in theory and practice of modern dance. Prerequisite: DANC 170 or consent of instructor. (Fall)

DANC 271 **Principles of Modern Dance** **(2)**
Exploration of the elementary principles of modern dance through the technical and academic process. Prerequisite: DANC 170 or consent of instructor. (On Demand)

DANC 275 **Theory and Practice of Jazz Dance** **(1)**
Intermediate theory and practice of jazz dance. Prerequisites: DANC 175 or consent of instructor. (Fall/Spring)

DANC 276 **Theory and Practice Ballet** **(1)**
Intermediate work in theory and practice of ballet. Prerequisite: DANC 176 or consent of instructor. (Fall)

DANC 277 **Principles of Ballet** **(2)**
Elementary principles of ballet through the technical and academic process. Prerequisite: DANC 176 or consent of instructor. (On Demand)

DANC 278 **Theory and Practice Tap Dance** **(1)**
Intermediate theory and practice of tap dance. Prerequisite: DANC 178 or consent of instructor. (Fall)

DANC 296 **Topics** **(1-3)**

DANC 326 **Methods of Teaching Ballet and Modern Dance** **(3)**
Theory and application of methods of teaching ballet and modern dance. Prerequisite: DANC 270, 276, or consent of instructor. (Alternate spring)

Performing

All DANP classes may be repeated once for credit.

DANP 157 **Repertory Dance** **(1)**
Student participation in the production of a dance supervised by faculty or guest artist. Students must audition. Corequisite: one technique class. (Fall/Spring)

DANP 257 **Repertory Dance** **(1)**
Student participation in the production of a dance supervised by faculty or guest artist. Students must audition. Corequisite: one technique class. (Fall/Spring)

DANP 297 **Choreography Practicum I** **(1)**
Student practice in choreography and producing an original dancework. May be repeated once for credit. (Fall/Spring)

DANP 357 **Repertory Dance** **(1)**
Student participation in the production of a dance work supervised by faculty or guest artist. Prerequisites: by audition, DANP 257, or consent of instructor. Corequisite: one technique class. (Fall/Spring)

DANP 370 **Modern Dance Technique** **(1)**
Intermediate to advanced modern dance technique. Prerequisite: DANC 270 or consent of instructor. (Fall, on demand)

DANP 375 **Jazz Dance Technique** **(1)**
Intermediate to advanced jazz dance technique. Prerequisites: DANC 275 or consent of instructor. (Fall, on demand)

DANP 376 **Ballet Technique** **(1)**
Intermediate to advanced ballet technique. Prerequisites: DANC 276 or consent of instructor. (Fall, on demand)

DANP 378 **Tap Dance Technique** **(1)**
Intermediate to advanced tap dance technique. Prerequisites: DANC 278 or consent of instructor. (Spring, on demand)

DANP 397 **Choreography Practicum II** **(1)**
Student practice in choreography and producing an original dance work. May be repeated once for credit. Prerequisite: DANP 297 or consent of instructor. (Fall, on demand)

DANP 457 **Repertory Dance** **(1)**
Student participation in the production of a dance work supervised by faculty or guest artist. Prerequisite: by audition, DANP 357, or consent of instructor. Corequisite: one technique class. (Fall/Spring)

DANP 470 **Modern Dance Technique** **(1)**
Intermediate/advanced modern dance technique. Prerequisite: DANP 370 or consent of instructor. (Spring, on demand)

DANP 475 **Jazz Dance Technique** (1)
Intermediate to advanced jazz dance technique. Prerequisite: DANP 375 or consent of instructor. (Spring, on demand)

DANP 497 **Choreography Practicum III** (1)
Student practice in choreography and producing an original dance work. May be repeated once for credit. Prerequisite: DANP 397 or consent of instructor. (Spring, on demand)

ECONOMICS

School of Business and Professional Studies

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 GDP, 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 also studied. Prerequisites: 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. Prerequisites: 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, regulation, 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. Prerequisites: 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)**

ECON 530 **Managerial Economics** **(3)**
The focus of this course is the application of economic theory and its tools to everyday business activities. Topics to be covered include the analytical tools of economics, macro and micro economic theory, and factors that influence demand. (On Demand)

EDUCATION, EARLY CHILDHOOD

School of Humanities and Social Sciences

EDEC 100 **Parent Education and Preschool** **(1)**
Parenting skills in a preschool situation. Enrollment of both parent and child is required. (Fall/Spring)

EDEC 102 **Introduction to Early Childhood Professions Lab Experiences** **(3)**
Hands-on field experience for the student, who will demonstrate knowledge of child growth and development, guidance techniques, planning and implementation of curriculum, assessment techniques, and application of laws and standards. Prerequisite: EDEC 220. (Fall on demand)

EDEC 148 **Guidance Strategies for Children** **(3)**
Techniques to enhance guidance strategies through positive social skills, violence prevention, and anger management. The importance of family and community resources will also be addressed. (Fall on demand)

EDEC 196 **Topics** **(1-3)**

EDEC 216 **Early Childhood Education Administration: Human Relations** **(3)**
The roles and relationships among children, families, early childhood professionals and community resources. Consideration will be given to family structures, communication skills, roles of support organizations, team building, evaluation tools and advocacy. Prerequisites: EDEC 220; EDEC 264 and 240 may be taken concurrently. (Spring)

EDEC 220 **Introduction to Early Care and Education** **(3)**
An overview of history, philosophy, current and legal issues, licensing and health regulations, facilities, and programming for young children. Provides prospective teachers opportunity to assess roles played in dealing with children of diverse ethnic, cultural, and economic backgrounds. Field experience includes observation and participation in school settings three hours/week. (On demand)

EDEC 230 **Curriculum & Development: Infant/Toddler** **(2)**
Curriculum for the age group birth - 2 years. Content emphasis is on maintaining healthful, safe, environmental activities to stimulate language, social emotional, cognitive, and physical development. (On demand)

EDEC 238 **Early Childhood Development 0-8 Years** **(3)**
Theories, current research and developmental ages and stages of children, conception to 8 years. (Fall)

EDEC 240 **Curriculum & Development: Early Childhood** **(3)**
Methods of creating and implementing curriculum based on their understanding of developmentally appropriate practice for children, birth to age 8. Application of the teaching/learning process, and of managing the learning environment, will draw from research and practical application. Prerequisites: EDEC 220, and EDEC 238 or PSYC 233 (may be taken concurrently). (Spring on demand)

EDEC 250 **Exceptionalities in Early Education** **(2)**
Exploration of disabilities, assessment activities, and learning environments for children with diverse needs in the early years (birth-age 8). Prerequisites: EDEC 220, 230, 240, and EDEC 238 or PSYC 233. (Spring).

EDEC 262 **Parenting Issues in Early Education** **(1)**
Overview of the important role of the parents in their young (birth to age 8) child's life. Future teachers will develop skills necessary to develop partnerships with parents/caregivers and to support them in the care and guidance of their young children. (Spring)

EDEC 264 **Administration in Early Education** **(3)**
Overview of management concepts applicable in a variety of early education settings. Course content focuses on management of programs and personnel, program and staff development, fiscal administration, and evaluation. Prerequisites: EDEC 220, 230, 240. (Spring)

EDEC 290 **Early Literacy for the Young Child** (2)
In depth view of early literacy development in a changing, diverse society intended for the prospective early childhood teacher. Includes research about the language and literacy of young children. Explores how learners develop the ability to communicate and interact from birth to age 8. Prerequisites: EDEC 220. (On demand)

EDEC 297 **Practicum** (1-2)
Supervised experience working with children and families in early care and education settings. Accepted by the State Department of Child Care Services for licensing purposes. Scheduling is flexible. Prerequisite: consent of instructor. (Fall/Spring/Summer)

EDEC 299 **Student Teaching in Early Education** (5)
Full time supervised teaching experience which allows the student teacher the opportunity to apply developmentally appropriate, standards-based practice, theories, and philosophies acquired in coursework. Provides incremental responsibility for teaching, supervision, and management of young children birth to 6 years. A seminar is an integral part of the experience requirement. Prerequisites: EDEC 220, 230, 240. (Fall/Spring)

EDUCATION - TEACHER LICENSURE

School of Humanities and Social Sciences

EDUC 211 **Introduction to Teaching** (2)
Study teaching profession's organization and services. Students observe and work with partnership schools and examine their own experiences, talents, disposition, and skills that contribute to a teaching career. Includes a minimum of 20 hours of field experience. Prerequisites: ENGL 111, ENGL 112, SPCH 102, and PSYC 233, all with a B or higher, declaration of a major in one of the approved courses of study at Mesa State College leading to licensure. (Fall/Spring)

EDUC 340 **Pedagogical and Assessment Knowledge for Teachers: Early Childhood, Birth – 8 Years** (3)
Exploration of age/grade level teaching strategies, motivation principles, informal and formal assessments, planning strategies, and classroom management techniques. Includes a minimum of 20 hours of field experience. Prerequisites: Admission to the Teacher Education Program or permission of the instructor, EDUC 211. May be taken concurrently with EDUC 341 and EDUC 343. (Fall/Spring)

EDUC 341 **Pedagogical and Assessment Knowledge for Teachers: EL 6-12 Years** (3)
Exploration of age/grade level teaching strategies, motivation principles, informal and formal assessments, planning strategies, and classroom management techniques. Includes a minimum of 20 hours of field experience. (Fall/Spring/Summer)

EDUC 342 **Pedagogical and Assessment Knowledge for Teachers: Secondary & K-12** (3)
Exploration of age/grade level teaching strategies, motivation principles, informal and formal assessments, planning strategies, and classroom management techniques. Includes a minimum of 20 hours of field experience. Prerequisites: Admission to the Teacher Education Program and EDUC 211; may be taken concurrently with EDUC 343. (Fall/Spring/Summer)

EDUC 343 **Teaching to Diversity** (3)
Study of differences in student development and approaches to learning. Addresses ethnic, linguistic, gender, economic, intellectual, and community diversity. Includes a minimum of 25 hours of field experience. Prerequisites: Admission to the Teacher Education Program and EDUC 211; May be taken concurrently with EDUC 340, 341 and/or 342. (Fall/Spring/Summer)

EDUC 370 **Teaching and Learning: Middle Schools** (4)
Comprehensive course work in middle school's standard based curriculum and classroom management. Taught on-site in a local middle school. Provides the opportunity to associate theoretical approaches in instruction through reflective teaching, cooperative learning, case studies, modeling and/or microteaching. Students will be placed with a mentor teacher for a minimum 30 hour field experience. Prerequisite: Formal acceptance in TEP. (Fall/Spring)

EDUC 395 **Independent Study** (1-3)

EDUC 396 **Topics** (1-3)

EDUC 440 **Methods of Teaching Language and Literacy: EC** **(4)**
Survey of current research in early/emergent language and literacy, including language development and acquisition, family and community roles, teaching and learning strategies, literature in the curriculum, and ongoing assessment in instruction. Includes a minimum of 50 hours of field experience. Prerequisites: Admission to the Teacher Education Program and EDUC 211; may be taken concurrently with EDUC 451, 452 and/or 453. (Spring/Summer)

EDUC 441 **Methods of Teaching Language and Literacy: Elementary** **(4)**
Exploration of student literacy development in reading, writing, and speaking. Study and application of instructional strategies for various literary genres as well as multicultural and electronic texts. Includes a minimum of 50 hours of field experience. Prerequisites: Admission to the Teacher Education Program and EDUC 211, EDUC 340 and/or 341 and 343; permission of the instructor. (Fall/Spring/Summer)

EDUC 442 **Methods of Teaching Language and Literacy: Secondary & K-12 Art** **(5)**
Exploration of student literacy development in reading, writing, and speaking. Study and application of instructional strategies for various literary genres as well as multicultural and electronic texts. Includes a minimum of 60 hours of field experience. Prerequisites: Admission to the Teacher Education Program and EDUC 211, EDUC 342, EDUC 343; permission of the instructor. (Fall/Spring/Summer)

EDUC 451 **Methods of Teaching Mathematics: Early Childhood/Elementary** **(4)**
Prepares students to teach mathematics to elementary age students. Focus on major concepts, procedures, and reasoning processes that define number systems and number sense, geometry, measurement, statistics and probability, and algebra. Theoretical and practical approaches support learning about standards, content, delivery, and assessment. Includes a minimum of 50 hours of field experience. Prerequisites: Admission to the Teacher Education Program, EDUC 211, EDUC 340 and/or 341, 343, MATH 105 and Math 205. (Fall/Spring)

EDUC 452 **Methods of Teaching Science: Early Childhood/Elementary** **(3)**
Study and application of content standards in science for early childhood and elementary age students. Develops teaching proficiency in science standards, including health education, pre kindergarten through elementary. Includes a minimum of 35 hours of field experience. Prerequisites: Admission to the Teacher Education Program, EDUC 211, EDUC 340 and/or 341, EDUC 343; and EDUC 440 and/or 441 if not being taken concurrently. (Fall/Spring)

EDUC 453 **Methods of Teaching Social Sciences: Early Childhood/Elementary** **(3)**
Study and application of content standards in civics, geography, history, and economics for early childhood and elementary age students. Develops teaching proficiency in social studies standards, pre-kindergarten through elementary. Includes a minimum of 35 hours of field experience. Prerequisites: Admission to the Teacher Education Program, EDUC 211, EDUC 340 and/or 341, EDUC 343; and EDUC 440 and/or EDUC 441 if not being taken concurrently. (Fall/Spring)

EDUC 491 **PDS I: Introduction to Teaching/Core Curriculum** **(10)**
Interdisciplinary study of the knowledge and skills required of beginning teachers. Comprehensive coursework in pedagogy, assessment, standards-based instruction, classroom management, lesson planning, diversity and technology across the curriculum are integrated into this course. Prerequisites: Formal acceptance into the PDS Program and placement with a mentor teacher. (Summer)

EDUC 492 **PDS II: Core Curriculum/Methods of Teaching** **(12)**
Continuation of PDS I, concentrating on application of pedagogy and course content. Students focus on strategies and methodologies in the particular discipline they will be licensed to teach. Participants spend the seven hour academic day in seminars or in their field placements in the public schools. Prerequisites: Formal acceptance into the PDS program and placement with a mentor teacher; EDUC 491. (Fall)

EDUC 493 **PDS III: Teaching Internship and Colloquium** **(12)**
Continuation of PDS I and II. A full-time supervised teaching experience designed to allow the intern the opportunity to apply standards-based curriculum and the pedagogy and methodologies acquired in the previous two courses, EDUC 491 and EDUC 492. Colloquiums, seminar, and monthly meetings with the mentor and intern cohort group are required. Prerequisites: Formal acceptance into the PDS program and placement with a mentor teacher; EDUC 491, 492. (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 advisor. Prerequisites: consent of Director of Teacher Education. (Fall/Spring)

EDUC 499A **Teaching Internship and Colloquium: K-2** (6)
Available for students who are pursing ECE/ELED licensure and standards-based education: an eight-week experience. Colloquiums are included and required. Prerequisites: Formal admission to the Teacher Education Program; EDUC 211, 340 and/or 341, 343, 440 and/or 441, 451, 452, 453; all other coursework for bachelor's degree completed; 2.75 cumulative GPA as well as 2.75 GPA in major and 2.75 in EDUC classes. (Fall/Spring)

EDUC 499B **Teaching Internship and Colloquium: 3-6** (6)
Available for students who are pursuing ECE/ELED licensure and standards-based education: an eight-week experience. Colloquiums are included and required. Prerequisites: Formal admission to the Teacher Education Program; EDUC 211, 340 and/or 341, 343, 440 and/or 441, 451, 452, 453; all other course work for bachelor's degree completed; 2.75 cumulative GPA as well as 2.75 GPA in major and 2.75 GPA in EDUC classes. (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 standards-based curriculum, and the theories and philosophies acquired in the professional education coursework. Five colloquiums are included during this 15-week experience. Prerequisites: Formal admission to the Teacher Education Program; EDUC 211, 341, 343, 440, 441, 451, 452, 453; all other course work for bachelor's degree completed; 2.75 cumulative GPA as well as 2.75 GPA in major and 2.75 GPA in EDUC classes. (Fall/Spring)

EDUC 499D **Teaching Internship and Colloquium: Elementary for K-12** (6)
A supervised teaching experience available for students who are pursuing K-12 licensure and standards-based education: an eight-week experience. Five colloquiums are included in the eight-week experience. Prerequisites: Formal admission to the Teacher Education Program; EDUC 211, 342, 343, 442 (Art majors only); appropriate content area methods course/s; all other coursework for bachelor's degree completed; 2.75 cumulative GPA as well as 2.75 GPA in major and 2.75 GPA in EDUC classes. (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 standards-based education and the theories and philosophies acquired in the professional education coursework. Five colloquiums are included during this 15 week experience. Prerequisites. Formal admission to the Teacher Education Program; EDUC 211, 342, 343, 440, 442 (Art Majors only); appropriate content area methods course/s, all other course work for bachelor's degree completed; 2.75 cumulative GPA as well as 2.75 GPA in major and 2.75 GPA in EDUC classes. (Fall/Spring)

EDUC 499H **Teaching Internship and Colloquium: Secondary for K-12** (6)
A supervised teaching experience available for students who are pursuing K-12 licensure and standards-based education: an eight-week experience. Prerequisites: Formal admission to the Teacher Education Program; EDUC 211, 342, 343, 442 (Art Majors only); appropriate content area methods course/s; all other course work for bachelor's degree completed; 2.75 cumulative GPA as well as 2.75 GPA in major and 2.75 GPA in EDUC classes. (Fall/Spring)

EDUC 499I **Teaching Internship and Colloquium: Birth-Age 6** (6)
A full-time supervised teaching experience designed to provide the intern the opportunity to apply developmentally appropriate practice, standards-based education, theories, and philosophies acquired in the professional education coursework. Provides incremental responsibility for teaching, supervision, and management of young children, birth to age 6. A colloquium is an integral part of the experience requirement. Prerequisites: Completion of all PLACE Assessments, coursework and requirements in the professional education, general and academic sequences; and the approval of the Director of Teacher Education. (Fall/Spring)

ELECTRIC LINEWORKER

School of Applied Technology

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. Prerequisite: 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/her status as a Mesa State College student. Provides excellent on-the-job training benefits. Students usually selected for this course by formal interview. Prerequisite: consent of instructor. Eighteen hours per week, two semesters (Summer and Fall) after completion of regular program.

ELECTRONICS TECHNOLOGY

School of Applied Technology

NOTE: Enrollment, with instructor approval, may occur at any time (open entry) for certain courses. Please check with the instructor.

ELCT 105 **Basic Computer Repair and Maintenance** **(2)**
Troubleshooting, repair, upgrade and maintenance of personal computers common to the work environment. (Fall/Spring)

ELCT 110 **Basic Electronics** **(3)**
ELCT 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. Three one-hour lectures and one two-hour laboratory per week. (Fall)

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. Three one hour lectures and one one-and-one-half hour laboratory per week. (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. Three one hour lectures and one one-and-one-half hour laboratory per week. (Summer/Fall/Spring)

ELCT 132 **Introduction to Information Technology Hardware and Software** (3)
ELCT 132L **Introduction to Information Technology Hardware and Software Laboratory** (1)
Basic hardware and software study of stand-alone or local/wide-area computers. Hands on experience using 5x or above architecture. (Fall)

ELCT 150 **C Programming for Technology** (3)
Introductory course in programming using the C language specifically directed toward the technology student solving technical problems. No mathematics beyond elementary algebra and right angle trigonometry are required. Prerequisites: ELCT 117& ELCT 118. (Fall/Spring)

ELCT 152 **UNIX Operating System** (3)
Covers the software that the majority of UNIX users work with on a daily basis. Prerequisites: ELCT 132. (Fall/Spring)

ELCT 164 **Electronic Circuits I** (3)
ELCT 164L **Electronic Circuits I Laboratory** (1)
Analysis of solid state diodes and bipolar transistor amplifier circuits. Prerequisites: ELCT 118 or consent of instructor. Three one hour lectures and one two-hour laboratory per week. (Summer/Fall/Spring)

ELCT 165 **Applied Digital Circuits** (2)
ELCT 165L **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 164, 164L. Two one-hour lectures and two two-hour laboratories per week. (Summer/Fall/Spring)

ELCT 230 **Electronic Circuits II** (3)
ELCT 230L **Electronic Circuits II Laboratory** (1)
Differential and operational amplifier circuitry, feedback configurations, opamps errors, compensations, and applications. Prerequisite: consent of instructor. Three one-hour lectures and one two hour laboratory per week. (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 230 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. Three one-hour lectures and one two-hour laboratory per week. Prerequisite: consent of instructor. (Summer/Fall/Spring)

ELCT 257 **Laser Technology** (2)
ELCT 257L **Laser Technology Laboratory** (1)
Covers laser design, types and components, the effects and potential hazards of laser light and the effects of infrared radiation. Two hour lectures and one two-hour laboratory per week. Prerequisites: ELCT 118, 164, 230 or consent of instructor. (Summer/Fall/Spring)

ELCT 258 **Fiber Optics** (2)
Covers fiber types and the active devices used to generate and detect fiber optic transmission light. Prerequisites: ELCT 118, 164, and 165 or consent of instructor. (Summer/Fall/Spring)

ELCT 260 **Information Technology, Hardware and Software** (3)
ELCT 260L **Information Technology, Hardware and Software Laboratory** (2)
Use of an internal systems approach to building and maintaining stand-alone or local/wide area computers utilized in networking. Hands on experience using 5x or above architecture. Electronics Technology Majors Only: Corequisite ELCT 260L, prerequisite ELCT 132/132L. (Fall)

ELCT 262 **Personal Computer Networking** (2)
ELCT 262L **Personal Computer Networking Laboratory** (2)
How to specify, install and maintain local area networks. Covers the basics and protocols of data communications and communication architectures. Two one-hour lectures and two two-hour laboratories per week. Prerequisites: ELCT 132/132L, ELCT 165/165L, and ELCT 260/260L. (Fall/Spring)

ELCT 265 **Advanced Information Technology Hardware and Software** (2)
ELCT 265L **Advanced Information Technology Hardware and Software Laboratory** (2)
An internal systems approach to building and maintaining computers that can be used as stand-alone or on a local/wide area network. An advanced study of networking and software projects. The computers are 5x and above architecture. Electronics Technology Majors Only: Corequisite 265L, prerequisites ELCT 260, 260L. (Spring)

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. Three one-hour lectures and one and one-half laboratory per week. Prerequisite: consent of instructor. (Summer/Fall/Spring)

ELCT 267 **Microprocessors II** (3)
ELCT 267L **Microprocessors II Laboratory** (1)
Using the microprocessor to do real world tasks of interfacing memory for program storage and I/O devices for systems communication. Three one-hour lectures and one two-hour laboratory per week. Prerequisites: ELCT 266/266L. (Fall/Spring)

ELCT 279 **Electronic Troubleshooting** (3)
ELCT 279L **Electronic Troubleshooting Laboratory** (1)
Analyze correct circuit operation and probable symptoms of component failures. Preparation for CET exam. Three one-hour lectures and one two-hour laboratory per week. Prerequisites: ELCT 117, 118, 164, 165, and 230. (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. Two one-hour lectures and two one and one-half laboratories per week. Prerequisites: CADT 121; student must be in the 4th semester of the Electronics Technology Program. (Summer/Fall/Spring)

ELCT 293 **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.)

ELCT 295 **Independent Study** (1,2)

ELCT 296 **Topics** (1,2)

ENGINEERING

School of Natural Sciences and Mathematics

TI-82 or TI-85 (preferred) or equivalent calculator is recommended or required for engineering classes. Cost is approximately $70.00-125.00.

ENGR 105 **Basic Engineering Drawing** (3)
Fundamentals of computer-aided drafting and design. This is a foundation course for engineering-oriented students. Current engineering practice is emphasized, and computers are introduced as a tool for modern engineering design and drawing. (Fall/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: MATH 130 and ENGR 105 or equivalents. (Spring)

ENGR 131 **Introduction to Cartography** (3)
Introduction to maps as tools for communication and analysis of locationally related information, including an introduction to concepts in Geographic Information Systems (GIS) and Global Positioning Systems (GPS). (Fall)

ENGR 251 **Circuit Analysis I** (3)
ENGR 251L **Circuit Analysis I Laboratory** (1)
Circuit analysis and modern electronics practice. Fundamental principles are applied to linear, time-invariant, lumped-parameter circuits. Electromechanical, thermal, and optical sensors are used with operational amplifiers in a variety of signal processing and wave-shaping applications. Four lectures and one two-hour laboratory per week. Prerequisites: PHYS 132, 132L. Corequisite: MATH 253. (Fall)

ENGR 252 **Circuit Analysis II** (3)
ENGR 252L **Circuit Analysis II Laboratory** (1)
A continuation of ENGR 251. The time-domain analysis of RL, RC, and RLC networks is first examined, with particular attention given to their natural and step responses. Mutual inductance and transformers are studied. Finally, the Laplace transform is used in circuit analysis, along with frequency domain techniques for networks. Three lectures and one two-hour laboratory per week. Prerequisite: ENGR 251, 251L. (Fall)

ENGR 255 **Thermodynamics** (3)
The laws of thermodynamics applied to bulk matter. Examples are drawn from engineering, chemistry, biology, and physics. The role of the Second Law is emphasized, and applications range from engine performance to chemical reactions and phase changes. Free energy concepts are introduced and used throughout the course. Prerequisites: PHYS 131, 131L, MATH 152. (Fall)

ENGR 261 **Statics and Dynamics I** (3)
ENGR 262 **Statics and Dynamics II** (3)
A two-semester introduction to statics and dynamics for scientists and engineers. Newtonian mechanics is first used to study the static equilibrium of solids. The vector principles of statics are used to study forces, couples, and force systems. These principles are applied to the structural analysis of trusses, cables, joints, and frames. Frictional forces are examined. Centers of gravity, centroids, radii of gyration, and moments of inertia are utilized. The principle of virtual work is introduced. The kinematics and kinetics of particles, systems, and rigid bodies are investigated, along with the concept of impulse and the principles of momentum and energy conservation. Applications to rigid-body motion are emphasized. Vibrations of solid bodies are studied, along with resonance phenomena. Finally, the propagation of waves in simple mechanical systems is investigated. Prerequisites: PHYS 131, 131L for ENGR 261; ENGR 261 for ENGR 262. Corequisites: MATH 253 for ENGR 261. (Fall/Spring)

ENGLISH

School of Humanities and Social Sciences

ENGL 090 **Basic Writing** (3)
Basic writing skills for students who need more background for formal college writing or whose ACT score is lower than that required for admission to English 111. (Fall/Spring)

ENGL 111 **English Composition** (3)
Effective communication through writing. Prerequisite: Students who do not meet placement criteria will be assigned to ENGL 090 and must pass that class with a "C" or higher to enroll in ENGL 111. (Fall/Spring)

ENGL 112 **English Composition** (3)
Critical writing about literature; research. Prerequisite: ENGL 111 with a grade of "C" or higher to fulfill English Competency requirement under General Education. (Fall/Spring)

ENGL 129 **Honors English** (3)
Examination of readings and creation of persuasive essays, research papers, and critical analyses. This course fulfills the composition requirements (ENGL 111 and ENGL 112) for baccalaureate students whose ACT or SAT scores are high and whose writing skills are strong. Permission to enroll is required. Students must pass ENGL 129 with a grade of "C" or higher to fulfill English competency requirement under General Education. (Fall/Spring)

ENGL 131 **Western World Literature I** (3)
Works from the Classical, Medieval, and Renaissance periods. (Fall/Spring)

ENGL 132 **Western World Literature II** (3)
Works from the late Renaissance, Neoclassic, Romantic, and Modern periods. (Fall/Spring)

ENGL 150 **Introduction to Literature** **(3)**
Study of major genres of literature. (Fall/Spring)

ENGL 196 **Topics** **(1-3)**

ENGL 222 **Mythology** **(3)**
Basic myths of the Greeks and Romans, the cultures that produced them and/or the Northern and Medieval myths of Europe, their backgrounds in classical culture and native folklore. (Fall/Spring)

ENGL 231 **Non-Western World Literature I** **(3)**
Literature from cultures outside the Western tradition, from antiquity to approximately 1800. Texts, chosen by instructor, may include works from China, Japan, India, the Middle East, etc. (Fall/Spring)

ENGL 232 **Non-Western World Literature II** **(3)**
Nineteenth and twentieth century literature from Eastern, Indian, African, Asian and Latin American traditions. (Fall/Spring)

ENGL 240 **Children's Literature** **(3)**
Survey of literature for children from birth to age 12, focusing on ways of reading texts. Prerequisites: ENGL 111, 112. (Fall/Spring)

ENGL 245 **Imaginative Writing** **(3)**
Introduction to the theory and practice of imaginative writing for young people. Prerequisite: ENGL 111. (Fall/Spring)

ENGL 250 **Introduction to Creative Writing** **(3)**
An introduction to the theory and practice of producing original works of poetry, fiction, and non-fiction prose. Prerequisite: ENGL 111 (Fall/Spring)

ENGL 254 **Survey of English Literature I** **(3)**
English literature from its beginnings through the Enlightenment. (Fall)

ENGL 255 **Survey of English Literature II** **(3)**
English literature from the Romantics to the present day. (Spring)

ENGL 261 **Survey of American Literature I** **(3)**
American literature from the beginnings to the late 19th Century. (Fall)

ENGL 262 **Survey of American Literature II** **(3)**
American literature from the late 19th Century to the present. (Spring)

ENGL 296 **Topics** **(1-3)**

ENGL 301 **Classical Greek and Latin Literature** **(3)**
Readings in English of Greek and Roman authors and major classical genres. Prerequisites: 100 or 200 level literature course. (Alternate Spring)

ENGL 311 **English Medieval Literature** **(3)**
Major works of Old and Middle English literature. Prerequisites: ENGL 254 or consent of instructor. (Alternate Fall)

ENGL 313 **English Renaissance Literature** **(3)**
Major works of the 16th and 17th Centuries, including the Metaphysical and Caroline poets and John Milton. Prerequisite: ENGL 254 or consent of instructor. (Alternate Spring)

ENGL 314 **American Literature to 1830** **(3)**
An in-depth study of various significant texts of the period, as well as other relevant texts. Texts and authors are chosen by the instructor to provide a thorough study of selected important historical, philosophical and literary aspects of the period. Prerequisites: ENGL 261 or consent of instructor. (Alternate Fall)

ENGL 315 **American Literature 1830-1870** **(3)**
An in-depth study of various significant texts of the period, as well as other relevant texts. Texts and authors are chosen by the instructor to provide a thorough study of selected important historical, philosophical and literary aspects of the period. Prerequisites: ENGL 261 or consent of instructor. (Alternate Spring)

ENGL 316 **American Literature 1870-1900** (3)
An in-depth study of various significant texts of the period, as well as other relevant texts. Texts and authors are chosen by the instructor to provide a thorough study of selected important historical, philosophical and literary aspects of the period. Prerequisites: ENGL 262 or consent of instructor. (Alternate Fall)

ENGL 330 **Women in World Thought and Literature** (3)
Readings in world literature by and about women; interdisciplinary study of feminist theories and women's contributions to world thought. (Alternate Fall)

ENGL 335 **The Bible as Literature** (3)
The Old Testament as a literary masterpiece. (Fall)

ENGL 343 **Language and Literacy** (3)
Introduction to language and literacy issues affecting English/Language Arts education and instruction. Prerequisite: ENGL 111. (Fall/Spring)

ENGL 355 **Shakespeare** (3)
Early and mature plays, including genres of comedy, history, tragedy, and romance, emphasizing close textual reading in conjunction with cultural and intellectual contexts. (Fall/Spring)

ENGL 365 **Literature for Children and Young Adults** (3)
Advanced study of major works for youth and adolescents throughout history, with an emphasis on contemporary authors. (Fall/Spring)

ENGL 370 **Major Author:** (3)
In-depth study of one or two important writers, with attention to the writer's distinctive style and subject matter, the range of the writer's career, and the influence of the writer's work. (Fall/Spring)

ENGL 380 **Creative Writing: Non-Fiction** (3)
Theory and practice of producing original works or non-fiction. Prerequisite: ENGL 250. (Spring)

ENGL 381 **Creative Writing: Fiction** (3)
Theory and practice of producing original works of fiction. Prerequisites: ENGL 250 or consent of instructor. (Fall)

ENGL 382 **Creative Writing: Character and Narrative** (3)
Theory and practice of creating original characters and narratives. Prerequisites: ENGL 250 or consent of instructor. (Spring)

ENGL 383 **Creative Writing: Poetry** (3)
Theory and practice of producing original works of poetry. Prerequisites: ENGL 250 or consent of instructor. (Spring)

ENGL 384 **Expository and Persuasive Writing** (3)
Writing with emphasis on style, structure, organization, and audience. (Alternate Fall)

ENGL 385 **Technical Writing** (3)
Writing for the technical world including computer writing. Prerequisites: ENGL 112. (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 390 **Introduction to Film Studies** (3)
Introduction to film narrative, cinematography, and theory. Prerequisites: ENGL 112 and 9 hours of Humanities credit. (Spring)

ENGL 395 **Independent Study** (1-3)

ENGL 396 **Topics** (1-3)

ENGL 397 **Practicum** (6)
Experience in a Basic Writing classroom helping the instructor with all phases of writing instruction. Prerequisite: permission of department chair. (Fall/Spring)

ENGL 398 **Practicum in Editing and Publishing** (1-3)
Experience in editing and publishing one of Mesa State's journals. Credit hours contracted through advising instructor. Prerequisite: Consent of instructor. (Fall/Spring/Summer)

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 and theory of literary criticism. (Spring)

ENGL 423 **Short Story** (3)
History and development of short stories. (Spring)

ENGL 435 **American Literature 1900-1945** (3)
An in-depth study of various significant texts of the period, as well as other relevant texts. Texts and authors are chosen by the instructor to provide a thorough study of selected important historical, philosophical and literary aspects of the period. Prerequisites: ENGL 262 or consent of instructor. (Alternate Spring)

ENGL 436 **American Literature 1945-Present** (3)
An in-depth study of various significant texts of the period, as well as other relevant texts. Texts and authors are chosen by the instructor to provide a thorough study of selected important historical, philosophical and literary aspects of the period. Prerequisites. ENGL 262 or consent of instructor. (Alternate Fall)

ENGL 438 **Ethnic Experiences in U.S. Literature** (3)
Survey of literary works written throughout United States history by African-American, Hispanic-American, Native American and Asian American authors, as well as by authors from other under represented cultural communities. Prerequisite: 100 or 200 level literature class. (Alternate Fall)

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. Prerequisite: Junior or senior status or consent of instructor. (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 Secondary English** (4)
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. Includes 75 hours of field experience. 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 writers. Prerequisite: ENGL 254 or consent of instructor. (Alternate Fall)

ENGL 471 **British Romanticism** (3)
Representative works of writers attempting to discover a higher reality than that offered by materialism or rationalism. Prerequisite: ENGL 255 or consent of instructor. (Alternate Spring)

ENGL 475 **Victorian Literature** (3)
Representative works of post-Romantic British literature. Prerequisite: ENGL 255 or consent of instructor. (Alternate Fall)

ENGL 478 **20th Century British Literature** (3)
Major works from 20th Century British writers. Prerequisites: ENGL 255 or consent of instructor. (Alternate Spring)

ENGL 491 **Composition Theory and Practice** (3)
Theory and practice of composing as it applies to teaching English in the junior and senior high schools; historical context, contemporary theory, and current pedagogy in the field of composition studies. Prerequisites: senior standing in teacher certification program or consent of instructor. (Spring)

ENGL 492 **Seminar in Writing** (3)
Capstone course with topics related to writing. Application of and emphasis on creating a portfolio, editorial work, professional résumé, publishing, and public forum. (Fall/Spring)

ENGL 494 **Seminar in Literature** (3)
Analysis of an important literary work or works, requiring students to interpret, criticize, and present research. Prerequisite: Senior standing or consent of instructor. (Fall/Spring)

ENGL 495 **Independent Study** (1-3)

ENGL 496 **Topics** (1-3)

ENVIRONMENTAL SCIENCE AND TECHNOLOGY

School of Natural Sciences and Mathematics

ENVS 101 **Introduction to Environmental Science** (3)
Impact of pollution on the earth's 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. (Fall/Spring)

ENVS 110 **Environmental Science and Technology I** (3)
Introduction to the source, characteristics, and concerns surrounding hazardous and radioactive materials in environmental systems, with an emphasis on developing environmental literacy. A two-day field trip on the second weekend of classes is required. Prerequisites: one year of high school chemistry and high school algebra or equivalent. (Fall/Spring)

ENVS 196 **Topics** (1-3)

ENVS 210 **Environmental Science and Technology II** (3)
Introduction to basic problems in environmental science. Topics include earth systems, human population dynamics, energy use and supplies, resource management, sustainable development, environmental economics, and environmental policy, both U.S. and international. Prerequisite: ENVS 110. (Spring)

ENVS 211 **Hazardous/Radioactive Waste Management** (4)
Technical and regulatory aspects of generation, storage, transport, treatment, and disposal of radioactive and hazardous wastes. Prerequisites: ENVS 110 and CHEM 121 or consent of instructor. (Alternate Spring)

ENVS 212 **Environmental Health and Safety** (2)
ENVS 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. Two lectures and one two-hour laboratory per week. Prerequisites: ENVS 110; sophomore standing (AAS degree); senior standing (BS degree) or consent of instructor. (Alternate Spring)

ENVS 213 **Site Characterization** (4)
ENVS 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. Three 70-minute lectures and one three-hour laboratory per week. Prerequisites: ENVS 110, STAT 200. (Alternate Fall)

ENVS 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: ENVS 212L. (On demand)

ENVS 216 **Risk Assessment and 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: ENVS 211. (On demand)

ENVS 220 **Environmental Field Instrumentation** (2)
ENVS 220L **Environmental Field 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. Two lectures and one three-hour laboratory per week. Prerequisites: ENVS 110, CHEM 121, and STAT 200 or consent of instructor. (On demand)

ENVS 250 **Environmental Compliance** (3)
Identification of specific, detailed regulatory requirements for common industrial operations subject to environmental laws and regulations. Examination of administrative and technical barriers to achieving and maintaining compliance. Prerequisites: ENVS 110. (Alternate Fall)

ENVS 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: Sophomore standing (AAS) and one term prior to graduation. (Spring)

ENVS 296 **Topics** (1-2)

ENVS 301 **Environmental Project Management** (2)
Basic practices of effective project management, including proposal preparation, planning, scheduling, cost estimating, cost and progress tracking, and team building. Prerequisites: ENVS 211 or ENVS 213 or ENVS 250. (Alternate Fall)

ENVS 312 **Soil Properties and Characterization** (3)
ENVS 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. Three one-hour lectures and one three-hour laboratory per week. Prerequisites: CHEM 121, 122 or higher and one semester of biology or consent of instructor. (Fall)

ENVS 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 ENVS 312 or consent of instructor. (Alternate Spring)

ENVS 331 **Water Quality** (3)
ENVS 331L **Water Quality Laboratory** (1)
Examination of physical, chemical, and biological properties of aquatic systems and the effects of common pollutants. Three one-hour lectures and one three-hour laboratory per week. Two Saturday labs are required. Prerequisites: one semester of college biology, CHEM 121, 122 or higher, STAT 200, or consent of instructor. (Fall)

ENVS 332 **Introduction to Geographic Information Systems** (2)
ENVS 332L **Introduction to Geographic Information Systems Laboratory** (1)
Basic knowledge of the fundamentals of GIS with regard to theoretical, technical, and application issues. Prerequisites: ENGR 131, GEOL 111/111L or GEOL 113/113L (recommended). (Fall/Spring)

ENVS 340 **Air Quality and Pollution Control** (3)
Examination of the fundamental principles that govern air quality, its pollution, and its management. Students develop an air emissions inventory using mass balance and emission factors methodologies. Prerequisites: CHEM 121, 122 or higher, STAT 200, CSCI 120, MATH 113, or consent of instructor. (Fall)

ENVS 375 **Global Positioning Systems for GIS** (2)
ENVS 375L **Global Positioning Systems for GIS Laboratory** (1)
GPS techniques and applications as they relate to GIS data collection. Two one-hour lectures and one two-hour laboratory per week. Prerequisites: GEOL 332 and 332L, or BIOL 332 and 332L, or ENVS 332 and ENVS 332L. (Spring)

ENVS 395 **Independent Study** (1-3)

ENVS 396 **Topics** (1-3)

ENVS 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: ENVS 312, 312L, CSCI 120, MATH 119 or higher. (Alternate Spring)

ENVS 420 **Advanced Environmental Sampling and Analytical Methods** (3)
ENVS 420L **Advanced Environmental Sampling and Analytical Methods Laboratory** (1)
Survey of field sampling and analytical methods for study of environmental systems. Topics include sampling design, regulatory issues, quality assurance, quality control, data interpretation, and reporting. Three one-hour lectures and one three-hour laboratory per week. Prerequisites: CHEM 122 or 132, STAT 200 or consent of instructor. (Alternate Spring)

ENVS 430 **Laboratory Methods for Environmental Education** (3)
Study and application of methods used to understand environmental systems. Development of hands-on activities using simple materials and equipment which support interdisciplinary learning will be explored. Use of computer applications will also be examined. Lesson presentations and field trips will be required. Prerequisites: ENVS 110 and junior standing in the School of Natural Sciences and Mathematics, or permission of instructor. (Fall)

ENVS 431 **Water and Wastewater Treatment** (3)
Examination of water and wastewater treatment processes including physical, chemical, and biological treatment technologies. Emphasis on unit process design and modeling. Prerequisite: ENVS 331. (Alternate Spring)

ENVS 432 **Advanced Geographic Information Systems** (2)
ENVS 432L **Advanced Geographic Information Systems Laboratory** (1)
Emphasis on the set of analytical operations provided by this technology and the specific conditions, requirements, and processing considerations surrounding effective GIS modeling and decision making. Prerequisites: GEOL 332 and 332L, or BIOL 332 and 332L, or ENVS 332 and 332L, or GEOL 375 and 375L, or ENVS 375 and 375L. GEOL 321 and 321L recommended. (Fall)

ENVS 492 **Capstone in Environmental Science and Technology** (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: ENVS 301, senior standing or consent of instructor. (Spring)

ENVS 495 **Independent Study** (1-3)

ENVS 496 **Topics** (1-3)

ENVS 499 **Internship** (3-9)
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)

FINANCE

School of Business and 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. Prerequisite: ACCT 202, STAT 214. (Fall/Spring)

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)

FINA 500 **Financial Strategy** (3)
Introduction and development of analysis of the financial aspects of a corporation using both theory and application. Topic include capital markets, global economic factors that affect the corporation, capital asset pricing model, portfolio analysis and capital structure policy. (Fall)

FINE ARTS

School of Humanities and Social Science

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/Spring)

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 211 **Second-Year Spanish I** (3)
FLAS 212 **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 301 **Advanced Spanish Grammar** (3)
A thorough review and intensive practice of all the basics of Spanish grammar, including pronouns, verb tenses (both indicative and subjunctive), prepositions, and more. This course includes the writing of short compositions. Prerequisites: FLAS 212 or permission of instructor. (Fall)

FLAS 302 **Advanced Spanish Composition** (3)
Writing of well-structured and clearly-planned compositions of varying length. Provides the opportunity for students to do research in Spanish and prepares them for the writing of regular term papers in Spanish. Prerequisite: FLAS 301. (Spring)

FLAS 311 **History and Culture of Spain** (3)
History and culture of Spain from its early inhabitants through the twentieth century. Short written or oral reports in Spanish on a variety of topics are regularly assigned, with emphasis on improving speaking, reading, and writing skills. Prerequisites: FLAS 212 or permission of instructor. (Fall)

FLAS 312 **History and Culture of Latin America** (3)
History and culture of Latin American from its early inhabitants through the twentieth century. Short written or oral reports in Spanish on a variety of topics are regularly assigned, with emphasis on improving speaking, reading, and writing skills. Prerequisites: FLAS 212 or consent of instructor. (Spring)

FLAS 321 **Introduction to the Literature of Spain** (3)
Introduction to the literature of Spain from the Middle Ages through the twentieth century, including excerpts from major works in poetry, narrative, and theater and by such authors as Cervantes, Perez-Galdos, and Garcia-Lorca. Prerequisites: FLAS 212 or permission of instructor. (Fall)

FLAS 322 **Introduction to the Literature of Latin America** (3)
Introduction to the literature of Latin America from the colonial period through the twentieth century, including excerpts from major works in poetry, narrative, and theatre and by such authors as Sor Juana, Borges, Neruda, and Garcia-Marquez. Prerequisites: FLAS 111, 112, 211, 212. (Spring)

OTHER LANGUAGES

FLAV 290, 390 **Special Studies In Foreign Languages** (1-3)
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 each 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/Spring)

GEOL 104 **Oceanography** (3)
Non-mathematical introduction to the scientific study of the ocean. While the course focuses on the hydrosphere subsystem of the Earth System, the atmosphere, cryosphere, lithosphere and biosphere interrelationship with the hydrosphere are also examined. (Spring)

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 107 **Natural Hazards and Environmental Geology** (3)
Introduction to geologic aspects of our environment. Includes studies of natural hazards, global climate change, geologic resources and emphasizes human interactions with the environment. (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. Three 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. 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 111/111L or GEOL 113/113L or consent of instructor. (Spring)

GEOL 113 **Field-Based Introduction to Physical Geology** (3)
GEOL 113L **Field-Based Introduction to Physical Geology Laboratory** (1)
Introduction to minerals, rocks, Earth structures, mountain building processes, and other elements of physical geology for science and non-science majors. A majority of class time will be spent in the field (including one Saturday) observing and mapping geological features of Western Colorado. There will be some indoor lectures and laboratory work. This course is recommended for prospective K-12 teachers. (Fall/Spring)

GEOL 196 **Topics** (1-3)

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 250 **Environmental Geology** (3)
Geologic aspects of environmental problems involving natural processes and anthropogenic activities. Studies include landslides, earthquakes, flooding, coastal erosion, and land subsidence as well as environmental impacts of mineral resource extraction, soil erosion, fossil fuel consumption, and climate change. Prerequisites: GEOL 100 or 104 or 105 or 111 or 113. (Spring)

GEOL 296 **Topics** (1-3)

GEOL 301 **Structural Geology** (3)
GEOL 301L **Structural Geology Laboratory** (1)
Stress and strain in rock bodies. Description and occurrence of both brittle and ductile rock structures. 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. Four one-day field trips are taken. Prerequisites: GEOL 111/111L or 113/113L, and MATH 130. (Fall)

GEOL 321 **Introduction to Remote Sensing** (2)
GEOL 321L **Introduction to Remote Sensing Laboratory** (1)
Remote sensing systems and applications; characteristics of photographs, scanner and radar imagery interpretation. Two one-hour lectures and one two-hour laboratory per week. Prerequisites: GEOL 111/111L or GEOL 113/113L, and GEOL 202. (Spring)

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 111/111L or GEOL 113/113L or consent of instructor. (On demand)

GEOL 331 **Crystallography and Mineralogy** (3)
GEOL 331L **Crystallography and Mineralogy Lab** (1)
Morphology and classification of crystals; chemistry and genesis of minerals. Laboratory: identification of crystal systems and class, hand specimen identification of minerals, some X-ray diffraction work. Three lectures and one two-hour laboratory per week. Prerequisite: CHEM 131 or consent of instructor. (Fall)

GEOL 332 **Introduction to Geographic Information Systems** (2)
GEOL 332L **Introduction to Geographic Information Systems Laboratory** (1)
Basic knowledge of the fundamentals of GIS with regard to theoretical, technical, and application issues. Prerequisites: ENGR 131, and GEOL 111/111L or GEOL 113/113L (recommended). (Fall/Spring)

GEOL 333 **Geology of the Canyon Country** (1)
Three two-hour evening lectures with films and slides used to preview geology of the Colorado Plateau. A five-day field trip to the selected sites is conducted during spring break. Prerequisites: GEOL 100, 105 or 112. (Spring)

GEOL 340 **Igneous and Metamorphic Petrology** (3)
GEOL 340L **Igneous and Metamorphic Petrology Laboratory** (1)
Origin, composition and classification of igneous and metamorphic rocks. Laboratory: identification of igneous and metamorphic rocks in hand specimens. 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, CHEM 122/122L, and GEOL 111/111L or GEOL 113/113L. (On demand)

GEOL 359 **Survey of Energy-Related Natural Resources** (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: GEOL 111/111L or GEOL 113/113L; CHEM 131/131L, or consent of instructor. (Alternate Spring)

GEOL 361 **Survey of Mineral-Related Natural Resources** (3)

The genesis, description, and exploitation of metallic and non-metallic natural resources consumed by modern society, such as base-metals, precious metals and gems, aggregates and construction materials, fertilizers, and chemical-industrial commodities. Environmental, economic, and socio-political issues associated with utilization of these resources will also be addressed. At least one field trip to a local resource area will be arranged. Three lectures per week. Prerequisites: GEOL 111/111L or GEOL 113/113L, and CHEM 131, 131L, or consent of instructor. (Alternate Spring)

GEOL 375 **Global Positioning Systems for GIS** (2)
GEOL 375L **Global Positioning Systems for GIS Laboratory** (1)

GPS techniques and applications as they relate to GIS data collection. Prerequisites: GEOL 332 and 332L, or BIOL 332 and 332L, or ENGS 332 and 332L. (Fall/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 or 113, 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 or GEOL 113/113L, and GEOL 112/112L, and STAT 200 or consent of instructor. (Spring)

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 **Geophysics** (3)
GEOL 404L **Geophysics Laboratory** (1)

Exploration for mineral and petroleum and preliminary investigation of sites for engineering and environmental projects with emphasis on refraction and reflection seismic, gravity, magnetic, electrical, electromagnetic ground-penetrating radar and radioactive methods. Laboratory: interpretation of data, computer applications, and field trips. Four lectures and one two-hour laboratory per week. Prerequisites: GEOL 111/111L or GEOL 113/113L, and GEOL 112/112L, and PHYS 112, (calculus is recommended but not required) or consent of instructor. (Spring)

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)
GEOL 415L **Introduction to Ground Water Laboratory** (1)

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. Laboratory: Acquisition, analy-

sis, and interpretation of ground water data. Prerequisites: GEOL 111/111L or GEOL 113/113L, and MATH 151, and at least high school level biology, chemistry and physics. Three lectures and one two-hour laboratory per week. (Spring)

GEOL 432 **Advanced Geographic Information Systems** (2)
GEOL 432L **Advanced Geographic Information Systems Laboratory** (1)
Emphasis on the set of analytical operations provided by this technology and the specific conditions, requirements, and processing considerations surrounding effective GIS modeling and decision making. Prerequisites: GEOL 332 and 332L, or BIOL 332 and 332L, or ENVS 332 and 332L, or GEOL 375 and 375L, or ENVS 375 and 375L. GEOL 321 and 321L recommended. (Fall)

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 microscopic 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)

GEOL 497 **Structured Research** (1-3)
Geological research under the direct guidance of a faculty member. Designed for junior and senior level students. Prerequisite: permission of instructor. (Fall/Spring/Summer)

GRAPHIC ART

School of Humanities and Social Sciences

GRAR 215 **Fundamentals of Computer Graphics** (3)
Basic use and operation of graphics computer, exclusively Macintosh, with focus on terminology, hardware, peripheral devices, system management, and software (systems and applications). Including establishment of operation files, job information files, information capture and placement, and maintenance. Prerequisites: ARTE 101, 102, 151. (Fall)

GRAR 221 **Graphic Layout and Design** (3)
Principles of design and layout techniques, including thumbnail, rough, and comprehensive layouts; work planning and preparation of artwork with focus on computer and hand generated images. Prerequisites: ARTE 101, 102, 151; GRAR 215. (Spring)

GRAR 296 **Topics** (1-3)

GRAR 301 **Computer Illustration** (3)
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 primarily on Macintosh computers. Prerequisite: GRAR 215, 221. (Fall)

GRAR 305 **Graphic Design for Web Pages** (3)
Creation and development of well designed and functional web pages/sites to accommodate clients' promotional and business needs. Topics covered include software, creation of graphics, publishing, design theory for the web, typography and promotion. Prerequisites: GRAR 215, GRAR 221, or consent of instructor. (Spring on demand)

GRAR 320 **Letterforms and Typography** (3)
Study of letterforms and typography including terminology, type style identification and design, use of type within a design, composition, copyfitting, and basic principles of pattern and spatial design. Prerequisite: GRAR 221. (Fall)

GRAR 337 **Applied Illustration** (3)
Using both computer and hand generated images, the focus will be on creating images that will solve client communications problems, including story, advertising, and specialty illustrations. Prerequisite: GRAR 221, ARTE 251 or consent of instructor. Prerequisite: ARTE 251. (Spring)

GRAR 338 **Advertising Design I** (3)
Exploration of the various graphic communication applications common to the promotion of products and services, including brochures, posters, mailers, package design, and other items designed for print. Emphasis will be placed on design processes, prepress print production and the history of advertising. Prerequisite: GRAR 221, 301, 320. (Spring)

GRAR 339 **Advertising Design II** (3)
Advanced exploration of the various graphic communication applications common to the promotion of products and services, including brochures, posters, mailers, package design, and other items designed for print. Emphasis will be placed on design processes, prepress print production and the history of advertising. Prerequisites: GRAR 301, 320, 338. (Spring)

GRAR 395 **Independent Study** (1-3)

GRAR 396 **Topics** (1-3)

GRAR 437 **Applied Illustration II** (3)
Advanced study using both computer and hand generated images, the focus will be on creating images that will solve client communications problems, advertising, and specialty illustrations. Prerequisite: GRAR 337. (Spring)

GRAR 450 **Corporate Design** (3)
Exploration of visual communication and symbols designed specifically for corporate and organization identity. Examples include logos, logotypes, business stationery, forms, annual reports, advertising and signage. Emphasis will be placed on the process of design, prepress print production and the history of corporate design. Prerequisite: GRAR 338. (Fall)

GRAR 493 **Portfolio Construction** (3)
Assigned designed problems and development of items for assembly into a portfolio to be used as employment material. Prerequisite: GRAR 337, GRAR 338, GRAR 450. (Spring)

GRAR 495 **Independent Study** (1-3)

GRAR 496 **Topics** (1-3)

GRAR 499 **Internship** (3)
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 135 clock hours. Prerequisite: GRAR 450. (Fall/Spring/Summer)

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 137 **Latinos in the United States** (3)
Survey of historical issues affecting people of Latino heritage in the United States. (On demand)

HIST 225 **History of Colorado** (3)
History of the state from pre-historic to modern times. (Spring)

HIST 296 **Topics** (1-3)

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 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. (On demand)

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. (Spring)

HIST 342 **The Early American Republic** (3)
The social, cultural, intellectual and political developments in America from 1783-1850. Prerequisites: HIST 131, 132, or consent of instructor. (Alternate Spring)

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 350 **Renaissance and Reformation** (3)
Examines the political and social context of the Renaissance and Reformation. Prerequisites: HIST 101. (On demand)

HIST 355 **Ancient and Medieval Cities** (3)
The development (physical, social, political) of cities in the ancient and medieval periods and their role in early western civilization. Prerequisite: HIST 101. (Alternate Fall)

HIST 360 **Medieval Europe** (3)
Examines the political, social, and religious institutions of Medieval Europe (300-1475). Prerequisites: HIST 101, 102. (Alternate Spring)

HIST 370 **United States Women's History I** (3)
Historical survey of cultural, economic, and political contributions of American women from colonization to Reconstruction. Prerequisites: HIST 131, 132. (Alternate Fall)

HIST 371 **United States Women's History II** **(3)**
Historical survey of cultural, economic, and political contributions of American women from Reconstruction to the present. Prerequisites: HIST 131, 132. (Alternate 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 415 **Colonial America** **(3)**
Examines the development of colonial society in North America and the tensions that arose between Native American, European, and African people and cultures. Prerequisite: H131. (Alternate Spring)

HIST 416 **The American Revolution** **(3)**
An overview of and perspectives on the causes and outcomes of the American Revolution. Prerequisite: HIST 131. (Alternate Fall)

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 435 **Classical Archaeology** **(3)**
Examines the archaeological evidence for some of the ancient Mediterranean civilizations and how the historian uses archaeology to better understand the ancient world. Prerequisite: HIST 101. (Alternate Fall)

HIST 440 **Early and Medieval Christianity** **(3)**
Examines the historical development of Christianity through the middle ages, focusing on the social (marriage and family) and political (kingship) consequences of Christianity. Prerequisites: HIST 101. (Alternate Spring)

HIST 495 **Independent Study** **(1-3)**

HIST 496 **Topics** **(1-3)**

HIST 499 **History Internship** **(1-3)**
Experience with historical work in settings outside the college community, including museums, archives, and local, state, and federal agencies. Instructor permission required and internship must be arranged during the semester prior to the field experience. Prerequisites: Nine upper division hours in history and junior status. (Fall, Spring and Summer)

HUMAN PERFORMANCE AND WELLNESS

School of Business and 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 200 **History and Philosophy of Human Performance** (3)
Discusses the breadth, scope, and nature of the profession. Orientation to the history and philosophy of human performance and the factors that influence its evolution. Special consideration is given to the history of sport from antiquity to the present, particularly the Olympic Games. (Fall/Spring)

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 211 **Methods of Lifetime Activities (Fall)** (3)
Prerequisite: HPWA 200 or consent of instructor.

HPWA 212 **Methods of Individual Activities (Fall)** (3)
Prerequisite: HPWA 200 or consent of instructor.

HPWA 213 **Methods of Physical Fitness (Fall/Spring)** (2)
Prerequisite: HPWA 100.

HPWA 214 **Methods of Team Activities (Spring)** (3)
Prerequisite: HPWA 200 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 229 **Methods of Gymnastics, Stunts, and Tumbling (Fall)** (2)

HPWA 230 **Methods of Aerobics Training (Alternate Spring)** (1)

HPWA 233 **Methods of Weight Training (Fall/Spring)** (1)
Prerequisites: HPWE 129 or HPWE 128 or consent of instructor.

HPWA 234 **Prevention and Care of Athletic Injuries** (3)
Procedures and techniques involved in preventing and treating common injuries associated with competitive athletics. (Fall/Spring)

HPWA 250 **Lifeguard Training** (2)
An American Red Cross course leading to certification of qualified students. (Spring)

HPWA 251 **Water Safety Instructors Course** (2)
An American Red Cross course leading to certification of qualified students. (Spring)

HPWA 256 **Creative Play/Literacy** (3)
Acquaints students with instructional content, including proper content, progression, and literary integration that is appropriate for elementary physical education. (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. Prerequisite: HPWA 100. (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 272 **Orthopedic Assessment and Evaluation** (3)
Presentations relative to physical and interpretive skills required for musculoskeletal injury evaluation and management. Prerequisites: HPWA 234, BIOL 141, BIOL 141L, or consent of instructor. (Spring)

HPWA 297 **Practicum** (1,2)
Supervised assistantship with physical educators or recreation practitioners. (Fall/Spring)

HPWA 300 **Teaching/Technology Laboratory** **(3)**
Covers the technology utilized in a K-12 physical education setting to support instruction and enhance student learning. Students will also observe and participate in K-12 physical education classes through a 60-hour laboratory-based program. Prerequisites: HPWA 200 and enrollment in the Teacher Education program. (Spring)

HPWA 301 **Tests and Measurements in Human Performance and Wellness** **(3)**
Modern testing and evaluation methods applied to the field of HPW, including the areas of biological, neuromuscular, cognitive, social and affective development. The selection of appropriate measuring devices and their interpretation is an integral part of the course. Prerequisite: HPWA 200. (Fall/Spring)

HPWA 303 **Physiology of Exercise** **(3)**
HPWA 303L **Physiology of Exercise Laboratory** **(1)**
The effects of various types of exercise upon human body structure and function. Three one-hour lectures and one two-hour laboratory per week. Prerequisites: HPWA 213 and BIOL 141,141L. (Fall/Spring)

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** **(3)**
A comprehensive study of the musculature of the human body. Analysis of joint movement and muscular involvement in various physical activities will be emphasized in this course. Prerequisites: BIOL 141,141L, HPWA 200. (Fall/Spring)

The following is a series of courses designed to acquaint students with fundamental techniques, movements, strategies, patterns, officiating, and ethics of selected competitive athletics. Prerequisites: comparable methods course for each or consent of instructor.

HPWA 310 **Sports Theory/Officiating – Football (Alternate fall)** **(2)**
HPWA 311 **Sports Theory/Officiating – Basketball (Alternate fall)** **(2)**
HPWA 313 **Sports Theory/Officiating – Baseball and Softball (Alternate spring)** **(2)**
HPWA 314 **Sports Theory/Officiating – Track and Field Events (Alternate spring)** **(2)**
HPWA 315 **Sports Theory/Officiating – 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/Spring)

HPWA 333 **Community Health** **(3)**
Introduction to the areas of epidemiology, disease prevention and control, environmental health, health care, injury prevention, and safety education. (Fall)

HPWA 350 **Motor Development** **(3)**
Study of life span motor development, age changes, maturity, gender, and individual differences. Prerequisite: HPWA 200. (Fall/Spring)

HPWA 360 **Motor Learning** **(3)**
Foundations of motor learning and the relation of motor performance to other aspects of behavior. Prerequisite: HPWA 200. (Fall/Spring)

HPWA 365 **Advanced First Aid** **(3)**
Advanced knowledge and skills required to meet the needs of most emergency situations. Includes monitoring vital signs, CPR for professional rescuer, childbirth, triage, and transport of victims. (Spring)

HPWA 368 **Clinical Experiences in Athletic Training I** **(2)**
Athletic training clinical experiences with concentration on injury care. Prerequisite: Acceptance into Athletic Training Education Program. (Fall)

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. Two one-hour lectures and one two-hour laboratory per week. Prerequisites: BIOL 141,141L, HPWA 309, and MATH 110 or higher. (Spring)

HPWA 378 **Clinical Experiences in Athletic Training II** (2)
Athletic training clinical experiences with concentration on injury prevention, equipment fitting, and construction of protective devices. Prerequisite: HPWA 368. (Spring)

HPWA 380 **Adapted Physical Education** (3)
Study of physical activity, its modification and adaptation for the individuals with disabilities. Prerequisites: HPWA 200 or consent of instructor. (Fall)

HPWA 395 **Independent Study** (1-3)

HPWA 396 **Topics** (1-3)

HPWA 401 **Organization/Administration/Legal Considerations in P.E. and Sports** (3)
Organizational structures, administrative techniques, and legal considerations in physical education and sports. (Fall/Spring)

HPWA 404 **Preparation for ACSM Health Fitness Instructor Certification** (3)
Emphasis in fitness testing, designing and executing an exercise program, leading exercise, organizing and assisting with operation of fitness facilities. In addition, consultation practices for lifestyle change through multiple intervention strategies will be covered. Prerequisites: HPWA 303, 303L. (Spring)

HPWA 405 **Sports Nutrition** (3)
In-depth study of macronutrient metabolism as it relates to sport. Practical consideration in the use or non-use of carbohydrate supplements, vitamins, and/or other ergogenic aids. Three one-hour lectures per week. Prerequisites: HPWA 303, HPWA 303L. (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 410 **Rehabilitative Exercises** (3)
Review of the theoretical and scientific basis for, and the practical use of, traditional and recently emerging rehabilitative techniques utilized in the rehabilitation of acute, post acute, and chronic musculoskeletal injuries. Prerequisite: HPWA 234. (Spring)

HPWA 411 **Worksite Health Promotion** (3)
Covers worksite health promotion: its description, planning, implementation, marketing, and evaluation. Prerequisite: HPWA 401. (Spring)

HPWA 415 **Physical Activity and Aging** (3)
The study of the dynamic relationship between physical activity and the aging process. Course focuses on the impact of physical activity on the physiological, psychological, and social well-being of older adults. Prerequisites: HPWA 303, 303L. (Spring)

HPWA 420 **Therapeutic Modalities** (3)
Review of the theoretical and scientific basis for, and the practical use of, contemporary therapeutic modalities and techniques utilized in the treatment of acute and chronic musculoskeletal injuries. Prerequisite: HPWA 234. (Fall)

HPWA 425 **Training Room Organization and Administration** (3)
Investigation of the organizational and administrative aspects involved in the supervision of an Athletic Training Staff. Prerequisite: HPWA 234. (Fall)

HPWA 430 **Medical Conditions and Pharmacology in Sports** (3)
An overview of the effects on physical activity resulting from the pre-existence of selected medical conditions and the use of pharmacological agents. Prerequisite: HPWA 234. (Spring)

HPWA 468 **Clinical Experiences in Athletic Training III** (2)
Athletic training clinical experiences with concentration on injury evaluation and rehabilitation. Prerequisites: HPWA 272 and 378. (Fall)

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. Prerequisite: HPWA 380. (Alternate Fall)

HPWA 478 **Clinical Experiences in Athletic Training IV** **(2)**
Athletic training clinical experiences with concentrations on administrative duties and education. Prerequisites: HPWA 378, HPWA 468. (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 303 and 303L. (Spring)

HPWA 487 **Structured Research** **(1-3)**
A formal research project undertaken with the guidance of a faculty member. The results will be presented as a formal presentation and/or paper. Prerequisites: HPWA 303, 303L. (On demand)

HPWA 494 **Senior Seminar** **(1)**
Opportunity for senior students to contribute and participate in discussion and research of current issues. (Fall/Spring)

HPWA 495 **Independent Study** **(1-3)**

HPWA 496 **Topics** **(1-3)**

HPWA 497 **Pre-Internship in Physical Education** **(2)**
Provides an opportunity for K-12 physical education majors to research and study teaching and standard-based education in a physical education setting. Sixty laboratory hours required. Prerequisite: HPWA 320. (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/DANC **Aerobic/Fitness Activity Courses** **(1 each)**

HPWE 101	**Beginning Swimming**	**HPWE 133**	**Downhill Skiing**
HPWE 102	**Intermediate Swimming**	**HPWE 134**	**Snowboarding**
HPWE 104	**Water Polo**	**HPWE 135**	**Telemark Skiing**
HPWE 105	**Water Aerobics**	**HPWE 136**	**Body Shaping**
HPWE 112	**Hiking**	**HPWE 138**	**Step Aerobics**
HPWE 121	**Beginning Tennis**	**HPWE 139**	**In-Line Skating**
HPWE 122	**Intermediate Tennis**	**HPWE 140**	**Snowshoeing**
HPWE 123	**Racquetball**	**HPWE 141**	**Mountain Biking**
HPWE 124	**Intermediate Racquetball**	**HPWE 145**	**Wrestling**
HPWE 125	**Handball**	**HPWE 147**	**Track and Field**
HPWE 126	**Fitness Walking**	**HPWE 150**	**Adaptive Aquatics**
HPWE 127	**Physical Conditioning**	**HPWE 151**	**Adaptive Physical Activity**
HPWE 128	**Intermediate Weight Training**	**HPWE 153**	**Adaptive Aquatics II**
HPWE 129	**Weight Training**	**HPWE 156**	**Soccer**
HPWE 130	**Fitness**	**HPWE 157**	**Adaptive Physical Activity II**
HPWE 131	**Low-Impact Aerobics**	**HPWE 158**	**Speedball**
HPWE 132	**High-Impact Aerobics**	**HPWE 160**	**Field Hockey**

HPWE 164	Beginning Basketball
HPWE 165	Intermediate Basketball
HPWE 166	Flag Football
HPWE 179	Dance Performance Group
HPWE 180	Varsity Football
HPWE 181	Varsity Basketball
HPWE 182	Varsity Baseball
HPWE 184	Varsity Tennis
HPWE 185	Varsity Volleyball
HPWE 186	Varsity Softball
HPWE 187	Varsity Soccer
HPWE 188	Varsity Golf
HPWE 189	Varsity Cross Country
DANC 174	Beginning Jazz Dance
DANC 177	Beginning Tap Dance

Prerequisites for all "Intermediate" or Part II classes: the corresponding beginning course or consent of instructor.

(1 each)

HPWE	Varsity Athletics
HPWE 180, 280, 380, 480	Varsity Football
HPWE 181, 281, 381, 481	Varsity Basketball
HPWE 182, 282, 382, 482	Varsity Baseball
HPWE 184, 284, 384, 484	Varsity Tennis
HPWE 185, 285, 385, 485	Varsity Volleyball
HPWE 186, 286, 386, 486	Varsity Softball
HPWE 187, 287, 387, 487	Varsity Soccer
HPWE 188, 288, 388, 488	Varsity Golf
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.

(1 each)

HPWE	Lifetime Activity Courses
HPWE 103	Diving
HPWE 106	Scuba I
HPWE 107	Scuba II
HPWE 108	Canoeing
HPWE 109	Kayaking
HPWE 110	River Rafting
HPWE 111	Rock Climbing
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 159	Aikido
HPWE 161	Two-Person Outdoor Volleyball
HPWE 162	Volleyball
HPWE 163	Intermediate Volleyball
HPWE 167	T'ai Chi
HPWE 168	Hatha Yoga & Relaxation I
HPWE 169	Hatha Yoga & Relaxation II
HPWE 172	Square Dance
HPWE 173	Folk Dance
HPWE 174	Social Dance
DANC 160	Beginning Ballet
DANC 169	Beginning Modern Dance

HUMANITIES

School of Humanities and Social Sciences

HUMA 196 **Topics** **(1-3)**

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 296 **Topics** **(1-3)**

HUMA 300 **History and Development of Books** **(3)**
History and development of the book from the development of the alphabet to the present in the context of changing technologies and various social, cultural, and economic influences. Prerequisites: Junior or senior status, or consent of instructor. (Spring)

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 advisor 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)

MACHINING AND MANUFACTURING TRADES

School of Applied Technology

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 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)

MAMT 101 **Introduction to Manufacturing** **(2)**
The course is designed to give the student a broad overview of the world of manufacturing. The course will include people, materials, machines, design, organization, waste, quality, and other subjects which effect society and production of a product. (Fall)

MAMT 102 **Machine Shop Theory** **(3)**
Concentrated unit dealing with speeds and feeds of machines, materials, tooling, tapping, boring, and manufacturing processes. (On demand)

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 as the bench grinder, drill press, band saw, and others. One hour lecture and three hours laboratory per week. (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. 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 operations. 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. (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 of 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 148 **CNC Applications** (3)
Introduction to Computer Numerical Control programming basics, CAM software and tooling used in today's manufacturing CNC Milling machines and CNC lathes. (Fall/Spring/Summer)

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** (1)
MAMT 151L **Numerical Control Machining I Laboratory** (2)
Computerized and numerical control machining operations, including control of functions, programming format, machine setup, and operation. Two hours lecture and three hours laboratory per week. Prerequisite: MAMT 148, or consent of instructor. (On demand)

MAMT 155 **Numerical Control Machining II** (1)
MAMT 155L **Numerical Control Machining II Laboratory** (2)
Further development of concepts introduced in MAMT 151 with emphasis on setup 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 demonstrations on various methods of heat treating, hardness testing, and cutting chip theory. One one-hour lecture and one one and one-half hour laboratory per week. (Fall, on demand)

MAMT 170 **Practical Applications** (3)
Students will gain a working knowledge in manufacturing through Coop, internship, work experience or required lab work in industrial study if outside work cannot be acquired. Prerequisite: Instructor permission. (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. (On demand)

MAMT 295 **Independent Study** (1-3)

MAMT 296 **Topics** (1-3)

MANAGEMENT

School of Business and 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 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/Spring)

MANG 302 **Entrepreneurship** (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, 300, 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 113 or higher, STAT 200 or STAT 214. (Fall/Spring)

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. (Fall/Spring)

MANG 372 **Employment Assessment** (3)

Legal and ethical issues in the pre-employment assessment and screening process. Topics include developing the job profile, developing the application form, developing the structured interview, interviewing techniques, and questioning techniques. Prerequisite: MANG 371. (Fall)

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. (On demand)

MANG 402 **Advanced Problems in Small Business Operations II** (6)

Continuation of MANG 401. Prerequisites: MANG 302 and/or consent of instructor. (On demand) (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 451 **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: senior standing or consent of instructor. (Fall/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: FINA 339, Senior standing. (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 accounting students. Prerequisites: all required core and emphasis concentration courses must be completed or concurrently enrolled and senior standing. (Fall/Spring)

MANG 495 **Independent Study** (1-3)

MANG 496 **Topics** (1-3)

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)

MANG 500 **Advanced Management Theory** (3)

Designed to advance the student's understanding of management theories and the application of these theories to the business world. Contemporary issues will be discussed. (Fall)

MANG 501 **Production and Operations Management** **(3)**
Competitive strategies and strategic impact of the transformation process in a global economy. Operations management issues including quality, inventory management, management of technology, manufacturing planning and control, just-in-time manufacturing and optimized production technology. Impact of business system on productivity and profits. (Spring)

MANG 510 **Organizational Theory and Behavior** **(3)**
Designed to encourage the application of diverse conceptual and theoretical perspectives to the analysis and control of behavior in organizations. Practice in diagnosing organizational problems is gained by combining the use of theories, texts, readings, cases and exercise. The course focuses on problems related to perception, motivation, leadership, cultural diversity, interpersonal and group conflict, stress, work family conflict, influence, decision-making, ethics, international management issues and change. (Spring)

MANG 520 **Human Resource Management** **(3)**
Provides an in-depth study of the effective use and adaptation to the human resources of an organization through the management of people-related activities. The focus is on the core responsibilities and activities of the HR manager. Also included is a detailed review of current statues and regulations affecting the HR field. (On Demand)

MANG 540 **Advanced Quantitative Methods** **(3)**
Analytical models to support decision making. Topics include linear optimization, sensitivity analysis, linear regression, decision making under uncertainty, decision making under risk, project management, transportation and assignment methods, and forecasting. (On Demand)

MANG 550 **Entrepreneurship** **(3)**
Takes the student through activities that an entrepreneur would encounter in the small business start-up process. Topics will center around marketing, managerial, legal, financial and informational needs of the new venture. The use of cases, real life projects and Internet resources will be used extensively during the course. (On Demand)

MANG 590 **Strategy and Policy** **(3)**
The capstone course in the MBA program. The purpose of this course is to develop an understanding of strategic management and the "how" and "why" of strategic decisions. Emphasis is also placed on how the manager goes about translating strategy into action and achieves integration in the organization. Integration involves the functional areas of management and how to balance the trade-offs from the perspective of strategic decision making at the top management level. (Spring)

MARKETING

School of Business and 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 325 **Consumer Behavior** **(3)**
This course provides students with an understanding of the processes that are involved when individuals or groups select, purchase, use or dispose of products and services to satisfy needs and desires. Prerequisite: MARK 231. (Fall)

MARK 332 **Promotion** **(3)**
Provides students with a broad understanding of the many ways in which goods, services, and ideas can be promoted to consumers and businesses through advertising, public relations, and publicity. Prerequisite: MARK 231. (Spring)

MARK 335 **Sales and Sales Management** **(3)**
Provides students with a broad understanding of the many ways in which goods, services and ideas can be promoted to consumers and businesses. Prerequisite: MARK 231. (Fall)

MARK 350 **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: STAT 214, MARK 231, MARK 325. (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. Prerequisites: MARK 231, 350. (Spring)

MARK 495 **Independent Study** (1-3)

MARK 496 **Topics** (1-3)

MARK 500 **Marketing Strategy** (3)
Examines the state-of-the-art in marketing strategy from both a practical and theoretical perspective. Focusing on integrating a broad range of marketing concepts, the emphasis is on setting realistic marketing objectives, understanding marketing research concepts, demographic market segmentation, and current marketing topics. (Fall)

MASS COMMUNICATIONS

School of Humanities and Social Sciences

MASS 110 **Mass Media in America** (3)
The role played by media in the everyday lives of citizens and media's social and economic impact on society. (Fall/Spring)

MASS 196 **Topics** (1-3)

MASS 201 **News Writing and Reporting** (3)
Fundamentals of news gathering and writing, interviewing, reporting and writing of newsworthy events and personalities, using computers and the internet. Stories are submitted for publication and broadcast. Prerequisite: MASS 110 or consent of instructor. (Fall/Spring)

MASS 260 **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. (Fall/Spring)

MASS 296 **Topics** (1-3)

MASS 301 **Broadcast Writing** (3)
Techniques and practice in writing broadcast scripts, including news, advertising and documentary. Corequisite: MASS 201 or consent of instructor. (Fall/Spring)

MASS 303 **Public Affairs** (3)
Practice in advanced reporting techniques, with students alternating from broadcasting style to print style on a variety of exercises. Examination of gathering and presenting information involving public information officers, public relations officials, and government agencies. Prerequisite: MASS 301 or consent of instructor. Corequisite: MASS 201 or consent of instructor. (On demand)

MASS 304 **Editorials and Commentaries** (3)
Practice in researching, interviewing, and writing editorials and commentaries for the media. Techniques will include writing persuasive articles on a variety of subjects by supporting beliefs with analysis and documentation, and then presenting them in both broadcast and print style. (Alternate years on demand)

MASS 305 **Magazine/Feature Writing** (3)
Practice in researching, interviewing, and writing feature articles for magazines and newspapers. Techniques will include freelancing and submitting non-fiction articles to publications, and using on-line computer services. Prerequisite: MASS 301 or consent of instructor. Corequisite: MASS 201 or consent of instructor. (Alternate Spring)

MASS 306 **Sports Reporting** (3)
Practice in researching, interviewing, writing and reporting on sports. Techniques will include both print and broadcast sports reporting, as well as examining sports information directors' responsibilities. Corequisite: MASS 201 or permission of instructor. (Alternate Fall)

MASS 320 **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. Students furnish 35mm single lens reflex camera and materials. Prerequisite: MASS 110 or permission of instructor. (Fall/Summer)

MASS 330 **Editing and Publication Design** (3)
News evaluation, copy editing, headline writing, publication design and similar duties of an editor using computers to produce pages for newspapers, magazines, public relations newsletters, brochures, etc. Corequisite: MASS 201 or consent of instructor. (Fall)

MASS 340 **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. Corequisite: MASS 110 or consent of instructor. (Spring, on demand)

MASS 350 **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. Corequisite: MASS 201 or consent of instructor. (Fall, on demand)

MASS 360 **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 260. Corequisite: MASS 201. (Fall/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 110, or consent of instructor. (Fall/Spring)

MASS 420 **Digital Photography** (3)
Experience with photojournalism by using digital still images through the use of cameras and computer hardware and software. Students will shoot their own photojournalism pictures to build a portfolio demonstrating a variety of skills, especially in the areas of digital darkroom techniques necessary for modern publications. Student will provide his/her own supplies, such as a 35mm SLR camera, color film, processing, disks, etc. Corequisite: MASS 320, or consent of instructor. (Alternate Spring)

MASS 430 **Desktop Publishing** (3)
Experience with advanced layout and design techniques on computers, including producing brochures, organization newsletters, magazines, and newspapers. Techniques will include using a variety of hardware and software, digital photography, graphics, and producing a web page as a public relations tool. Prerequisite: MASS 330 or consent of instructor. Corequisite: MASS 201, or consent of instructor. (Alternate Spring)

MASS 440 **Media Management and Promotions** (3)
Study of techniques for managing today's electronic and print media. Theory and practical application in advertising and sales, laws, rules and regulations, audience research, programming, and making a profit. Corequisites: MASS 110, MASS 201. (Alternate Spring)

MASS 450 **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 350 or consent of instructor. (Spring on demand)

MASS 460 **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 360. Corequisite: MASS 201. (Fall/Spring)

MASS 470 **Advanced Producing Techniques** (3)
Study of the techniques of the video and television producer with "hands-on" experience in producing industry videos as well as programs for public and commercial television. Prerequisite: MASS 460 or consent of instructor. (Spring, on demand)

MASS 480 **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, 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 description.

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: At least junior standing with at least half of major requirements completed; MASS 201, MASS 480. (Fall/Spring/Summer)

MATHEMATICS

School of Natural Sciences and Mathematics

Graphing calculator is recommended or required for several mathematics classes. See department for recommended models.

In order to take any of the following mathematics courses, each listed prerequisite (or an equivalent course) must be completed with a grade of "C" or better. The instructor may waive the prerequisite.

MATH 090 **Introductory Algebra** (4)
Introduction to algebra with a review of basic arithmetic. Includes decimals, fraction, percentage, ratio, proportion, signed numbers, algebraic expressions, factoring, exponents and radicals, linear equations, functions and graphs. (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: MATH 090 or equivalent, or appropriate mathematics placement test score. (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. Prerequisites: Appropriate mathematics placement test score and interview, and consent of instructor. (Fall/Spring)

MATH 110 **College Mathematics** (3)
Essential concepts of mathematics for students in social sciences, psychology, 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 or appropriate mathematics placement test score. (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 equivalent, or appropriate mathematics placement test score. (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 equivalent, or appropriate mathematics placement test score. (Fall/Spring)

MATH 121 **Calculus for Business** (3)
Current college algebra skills are required. Linear and quadratic functions, limits and continuity, differential calculus, exponential and logarithmic functions and their derivatives, integral calculus, and partial derivatives. Applications in business and economics are emphasized for each major topic. All students will be required to have a graphing calculator as approved by the Department. Mathematical software such as MAPLE will be used where applicable. Prerequisite: MATH 113 or equivalent, or appropriate mathematics placement test score. (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 principal, 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. (On Demand)

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 equivalent, or appropriate mathematics placement test score. (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 147 **Introduction to Computer Algebra Systems** (1)

Introduction to computer algebra using an appropriate computer algebra system (CAS) such as Maple, Mathematica, Derive, etc. Topics will include the syntax and simple programming of the CAS used. Assignments and projects will emphasize applications in Calculus. Prerequisite: MATH 119. Corequisite: MATH 151. (Fall on demand)

MATH 149 **Honors Mathematics** (3)

An accelerated first year course, covering various aspects of algebra, analytic geometry, trigonometry, calculus, groups and symmetry, and linear algebra. This course fulfills the general education mathematics requirement for baccalaureate students whose COMPASS, ACT, or SAT scores are high and whose mathematical skills are strong. Prerequisite: Permission to enroll is required. (Fall)

MATH 151 **Calculus I** (5)

Functions, limits of functions, derivatives, definite integral, antiderivatives, applications, trigonometric exponential and logarithmic functions. Prerequisite: MATH 119 or MATH 130, or appropriate mathematics placement test score. (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 196 **Topics** (1-3)

MATH 205 **Elements of Mathematics II** (3)

Decimal numbers, probability, statistics, geometry, and the metric system. A continuation of MATH 105 designed for the prospective elementary teacher. Prerequisite: MATH 105 or consent of instructor. (Fall/Spring)

MATH 225 **Computational Linear Algebra** (3)

A computational approach to matrices, determinates, systems of equations, vector spaces, linear transformations, eigenvectors and eigenvalues, as well as their applications. Computational methods will be used to explore and investigate the traditional subjects of linear algebra. Prerequisite: MATH 253. (Alternate Spring)

MATH 240 **Introduction to Advanced Mathematics** (3)

A transitional course between lower division mathematics courses and the more theoretical upper division courses. Standard topics include symbolic logic, set theory, axiomatics and abstract algebraic systems. The primary emphasis of this course is the analysis and construction of rigorous mathematical proofs. Prerequisites: MATH 152. (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 296 **Topics** (1-3)

MATH 301 **Mathematics for Elementary Teachers** (3)
A selection of mathematics topics addressing content and standards for elementary education. Strong emphasis on written and oral communication. Prerequisite: MATH 205 and formal acceptance into the Teacher Education Program, or consent of instructor. (Fall/Spring)

MATH 305 **Euclidean Geometry** (3)
Development of Euclidean Geometry including basic concepts of logic, axiomatic proofs, inductive reasoning, analytic Geometry , applications of technology, and van Hiele levels of learning. Intended for students seeking teacher licensure. Prerequisites: MATH 152 or consent of instructor. (Fall)

MATH 310 **Number Theory** (3)
Classical number theory including the fundamental theorem of arithmetic, congruences, and linear diophantine equations. Prerequisite: MATH 240. (On demand)

MATH 325 **Linear Algebra I** (3)
Matrices, solving systems of equations, determinants, vectors, vector spaces, linear transformations and eigenvalues. Prerequisite: MATH 240 or MATH 369 or consent of instructor. (Fall/ Spring)

MATH 340 **Ethnomathematics** (3)
Study of mathematics within cultures, especially small-scale indigenous cultures. Through the lens of culture, students can compare/contrast mathematics systems, their logical structures, and their modes of expression. Prerequisite: MATH 240 or MATH 301 or permission of instructor. (Alternate Fall)

MATH 347 **Methods of Teaching Secondary Mathematics** (4)
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. 75 hours of field work are required. Prerequisite: consent of instructor. (Spring)

MATH 360 **Methods of Applied Mathematics** (3)
Selection of techniques in applied mathematics of particular use to scientists and engineers. Topics include vector analysis, partial differential equations and transform techniques. Applications are stressed. Prerequisite: MATH 260. (Fall)

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 365 **Mathematical Modeling** (3)
A bridge between calculus and the application of mathematics. Investigation of meaningful and practical problems chosen from experiences, encompassing the disciplines of mathematical sciences, operations research, engineering, management sciences and life sciences. Prerequisites: MATH 325, STAT 200. (On demand)

MATH 369 **Discrete Structures I** (3)
Elementary logic, induction, recursion, recurrence relations, sets, combinatorics, relations, functions, graphs, trees, and elementary abstract structures. Prerequisites: MATH 151, CSCI 111. (Fall)

MATH 370 **Discrete Structures II** (3)
Applications of logic, Boolean algebra and computer logic, abstract structures, coding theory, finite-state machines, and computability. Prerequisites: MATH 369 or both MATH 240 and CSCI 111. (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 386 **Geometries** (4)
Classical Euclidean geometry, synthetic geometry, constructions, inversive geometry, finite geometry, geometric transformations, and other geometries. Prerequisite: MATH 240. (Fall/Spring)

MATH 394 **Mathematics Colloquium** (1
A weekly series of talks on a wide range of contemporary mathematics will be given by local faculty and others. Students must provide written commentary on these talks. Prerequisite: Permission to enroll is required. (Fall/Spring)

MATH 395 **Independent Study** (1-3,

MATH 396 **Topics** (1-3)

MATH 397 **Structured Research** (1-4)
Mathematical research under the direct guidance of a faculty member. Designed for junior and senior level students. May be repeated for up to 12 credit hours. Prerequisite: Permission of instructor. (Fall/Spring/Summer)

MATH 420 **Introduction to Topology** (3)
Important as preparation for graduate work in many areas of mathematics and theoretical physics. Introduction to general topology, topics normally covered include: metric spaces, connectedness, compactness, the separation axioms and the Tychonoff theorem. Intended for mathematically mature students. Prerequisite: MATH 325 or consent of instructor. (On demand)

MATH 425 **Computational Abstract Algebra** (3)
Introduction to abstract algebra, typically groups and rings, from a computational perspective. Computation will be used to help explore and verify the properties of some algebraic structures. Prerequisites: MATH 253, MATH 225 or 325. (Alternate Fall)

MATH 430 **Mathematical Logic** (3)
Introduction to the classical areas of mathematical logic (model theory, proof theory, the theory of computation, complexity theory and set theory), the relationships these sub-disciplines have with each other and their relationships to the foundations of mathematics, computational science, computer science and the philosophy of mathematics. Prerequisite: MATH 240 or 369. (Alternate Fall)

MATH 450 **Complex Variables** (3)
Algebra of complex numbers, analyticity, differentiation and integration of complex functions, Cauchy's integral formulae, and series. Prerequisite: MATH 240. (Fall)

MATH 452 **Advanced Calculus I** (3)
Sequences, Euclidean spaces, limits of functions, continuity, differentiation, and integration. Prerequisite: MATH 240, 253. (Alternate Fall)

MATH 453 **Advanced Calculus II** (3)
Uniform continuity, topology in metric spaces, normed linear spaces, the differential in R_n, 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 325. (Spring)

MATH 490 **Abstract Algebra I** (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 240. (Alternate Fall)

MATH 491 **Abstract Algebra II** (3)
Topics in algebraic structures on groups, rings, fields, and modules. Prerequisites: MATH 490. (Alternate Spring)

MATH 494 **Senior Seminar** (1)
Capstone course, with discussion of specialized topics and analysis of mathematical results, requiring students to interpret and present research. Subject matter will vary. Presentations and/or written research papers will be required. Prerequisite: Consent of instructor. (Fall/Spring)

MATH 495 **Independent Study** (1-3)

MATH 496 **Topics** (1-3)

MBA LEVELING

School of Business and Professional Studies

MBA 500 **Management Environment** (3)
Fundamental business concepts and principles. Course content includes: introduction to management thought, discussion of the nature of firms and relevant business environments, examination of the functional areas of management, inquiry into the nature of the legal system, and discussion of business ethics and the impact of business on society. Prerequisite: Graduate standing. (Spring)

MBA 505 **Marketing Environment** (3)
Understanding marketing in a changing world is the basis of this course. Product, place, price, and promotion; the marketing research process concentrating on theory, sampling, technique and questionnaire design; and consumer markets and consumer buyer behavior from a research perspective will be studies. Cases and current literature will be used extensively. Prerequisite: Graduate standing. (Fall)

MBA 510 **Accounting Environment** (3)
Provides the graduate student who has had little exposure to accounting with the equivalent of a one-year undergraduate accounting principles curriculum. Covers the basic accounting model; its application to problems of measuring, recording and reporting business transactions; and the use of accounting information in making economic decisions. Prerequisite: Graduate standing. (Summer)

MBA 515 **Finance/Economics Environment** (3)
Purpose of this course is to understand the basic concepts of macroeconomics and microeconomics as well as the basic concepts of finance. Topics include: ethics, international issues, GDP, inflation, unemployment, Federal Reserve, money and the money supply, marginal analysis, market structure and market failures, financial analysis, stocks, bonds, valuation, capital budgeting, cost of capital and financing strategies. Prerequisites: MBA 510, graduate standing. (Fall)

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 111 **Music Technology I** (1)
Introduction to computer applications in music. The course begins with a focus on basic computer operation and the installation of the various software programs that will be used in the course. The course will include an overview of the three basic music applications for computers: notation software, Computer Assisted Instruction (CAI) software, and sequencing software (including digital audio). Corequisite: MUSA 114. (Fall)

MUSA 112 **Music Technology II** (1)
Continuation of the three basic tracks of study introduced in Music Technology I: notation, sequencing and CAI software. Emphasis will be placed on the more advanced applications in these three areas. Other areas addressed include recording technology, digital sampling techniques, and transcription software. Prerequisite: MUSA 111. Corequisite: MUSA 115. (Spring)

MUSA 113 **Fundamentals of Theory** (3)
Required theory course for music minor and music theatre students. Harmonic principles of music, including scales, intervals, triads, and chords. Concurrent enrollment in MUSA 130 or prior knowledge of the keyboard required. (Fall)

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** (1-3)
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** (2)
Fundamentals of singing, interpretation, phonetics, language (diction for singers), and solo repertoire for beginning voice students. (Fall)

MUSA 214 **Theory III – Chromatic Concepts** (3)
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. Includes advanced development of ear training and sightsinging. Emphasis on harmonic and rhythmic dictation. Continuation of MUSA 115 and 117. Prerequisites: MUSA 115 and 117. (Fall)

MUSA 215 **Theory IV - Twentieth Century Form and Analysis** (3)
Study of various compositional approaches and techniques of the 20th Century, correlated with the study of musical form. Includes advanced development of ear training and sight singing. Emphasis on harmonic and rhythmic dictation. Continuation of MUSA 214. Prerequisite: MUSA 214. (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** (1-3)
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 231 **Class Piano IV** (2)
A continuation of the concepts introduced in MUSA 230. Reinforcement and new concepts of keyboard skills including minor scales and arpeggios, triad inversions, cadence progressions, harmonization, transposition, repertoire pieces to develop technical facility and knowledge of musical style. Prerequisites: MUSA 230 or consent of the instructor. (Spring)

MUSA 232 **String Instrument 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 Instrument 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 240 **History and Philosophy of Music Education** (2)
Examination of the history and philosophies of music education in the United States. Investigates music education practices in the schools and helps students discover and define their own personal philosophy which can serve as a foundation for their career in music education. Includes 15 hours of field experience. Prerequisites: MUSA 115, 117. (Fall)

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 250 **Beginning Conducting** (2)
Basic concepts and techniques necessary to conduct music. 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 214, 217. Corequisites: MUSA 215, 218. (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 **Jazz Improvisation I** (2)
Materials and techniques for improvisation, including chord and scale construction, modality, harmonic patterns, linear concepts, with emphasis on technique, style and idiomatic usage. Prerequisites: MUSA 115 or consent of instructor. Corequisites: MUSA 214 or consent of instructor. (Fall)

MUSA 269 **Jazz Improvisation II** (2)
Exploration of advanced theoretical material for the aspiring jazz improviser: chord substitution, symmetrical and synthetic scale constructions, advanced chord/scale relationships, and advanced harmonic motion. The course emphasizes performance and improvisation based on a set repertoire of tunes. Prerequisite: MUSA 268. (Spring)

MUSA 296 **Topics** (1-3)

MUSA 302 **Keyboard Literature I** (3)
Survey of keyboard literature from Elizabethan music through Mendelssohn. Prerequisites: MUSA 230 or consent of instructor, MUSL 230. (Alternate Fall)

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 304 **Keyboard Literature II** (3)
Survey of keyboard literature from Chopin to the present day. Prerequisites: MUSA 231, MUSL 230, or consent of instructor. (Spring)

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 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 or previous enrollment in private vocal studies. (Alternate Spring)

MUSA 319 **Choral Literature** (3
Historical, analytical, and interpretive study of choral literature spanning the Renaissance through the 20th Century. Important course for those planning to direct choirs. Prerequisite: previous or concurrent enrollment in a Mesa State choir or consent of the instructor. (Alternate Fall)

MUSA 326 **Music History and Literature I** (3
Literature and styles of the master composers of music through the Ancient, Medieval, Renaissance, and Baroque periods. Course work is designed for the music major, utilizing a lecture and listening laboratory format and one scholarly research paper of the student's choice. Prerequisite: MUSA 114. (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. Coursework is designed primarily for the music major, utilizing a lecture and listening laboratory format and one scholarly research paper of the student's choice. Prerequisite: MUSA 114. (Spring)

MUSA 328 **Workshop in Music** (1-3)
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. (Fall)

MUSA 340 **Teaching Elementary and General Music: Methods, Principles and Materials** (3)
For Music Education Majors: The course is designed for standards-based curriculum for elementary and general music classes. Weekly laboratory experiences focus on course content dealing with teaching competencies in elementary and general music. Also addresses how to teach literacy in the music classroom. Includes 15 hours of field experience. Prerequisites: MUSA 215, 218, 240, 250. Corequisite: MUSA 397. (Alternate Fall)

MUSA 350A **Advanced Conducting, Choral** (2)
MUSA 350B **Advanced Conducting, Instrumental** (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 250. (Fall)

MUSA 395 **Independent Study** (1-3)

MUSA 396 **Topics** (1-3)

MUSA 397 **Music Education Practicum: Elementary Music** (1)
Application of knowledge, skills and methodology learned in MUSA 340 – Teaching Elementary and General Music: Methods, Principles and Materials. Emphasis is placed on peer teaching and teaching in the elementary classrooms of the public schools. Includes 15 hours of field experience. Prerequisite: MUSA 250. Corequisites: MUSA 340 and MUSA 350A or MUSA 350B. (Fall)

MUSA 398A **Music Education Practicum: Beginning & Middle School Ensembles; Band** (1)
MUSA 398B **Music Education Practicum: Beginning & Middle School Ensembles; Choir** (1)
MUSA 398C **Music Education Practicum: Beginning & Middle School Ensembles: Orchestra** (1)
Beginning and intermediate application of knowledge, skills and methodology learned in the methods and techniques courses as well as conducting courses related to band, choir or orchestra. Emphasis is placed on peer teaching and teaching in the public school performance classrooms. Includes 15 hours of field experience. Prerequisites: MUSA 350A, 350B. Corequisite: MUSA 440. (Spring)

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 or previous or concurrent enrollment in private vocal studies. (Alternate Spring)

MUSA 411 **Piano Pedagogy** (3)
Introduction to the field of piano teaching and learning/teaching theories with application to piano teaching. Survey of methods and literature. Instructional techniques for group and individual lesson settings. Prerequisites: MUSA 231, MUSL 230 or consent of instructor. (Spring)

MUSA 428 **Workshop in Music** (1-3)
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** (2)
Training in concepts and materials necessary to teach standards-based vocal music in the public schools. Includes 15 hours field experience. Prerequisites: MUSA 137, MUSL 137, or MUSP 150, MUSA 350A or 350B. Corequisites: MUSA 398A, 398B or 398C. (Alternate Spring)

MUSA 441 **Teaching Instrumental Music K-12: Methods, Principles and Materials** (2)
Designed for standards-based music curriculum for teaching instrumental music in the public schools. Activity will be centered on developing teaching competencies, administration of the music program, and methods, materials, equipment and technology needed for the instrumental music program. Includes 15 hours field experience. Prerequisites: MUSA 350A or 350B. Corequisites: MUSA 497A, 497B or 497C. (Alternate Fall)

MUSA 442A **Teaching Special Ensembles: Choral** (2)
MUSA 442B **Teaching Special Ensembles: Instrumental** (2)
Practical knowledge and methodology in the teaching of (A) Show/Jazz Choirs and (B) Marching/Jazz bands. Students will learn the skills necessary to direct these ensembles. Includes 15 hours of field experience. Prerequisites: MUSA 215, 218, 240 and 250. Corequisites: MUSA 350A or 350B if not completed, MUSA 444A or MUSA 444B. (Fall)

MUSA 495 **Independent Study** (1-3)

MUSA 496 **Topics** (1-3)

MUSA 497A **Music Education Practicum: High School Ensembles: Band** (1)
MUSA 497B **Music Education Practicum: High School Ensembles: Choir** (1)
MUSA 497C **Music Education Practicum: High School Ensembles: Orchestra** (1)
Advanced application of knowledge, skills and methodology learned in the methods, techniques and conducting courses related to band, choir or orchestra. Emphasis is placed on peer teaching and teaching in the public school performance classrooms. Includes 15 hours of field experience. Prerequisites: MUSA 350A or 350B. Corequisite: MUSA 441. (Spring)

MUSA 498A **Music Education Practicum: Special Ensembles: Choral** (1)
MUSA 498B **Music Education Practicum: Special Ensembles: Instrumental** (1)
Application of knowledge, skills and methodology learned in MUSA 442A/B – Teaching Special Ensembles: (A) Choral or (B) Instrumental. Emphasis is placed on peer teaching and teaching in the public schools. Includes 15 hours of field experience. Prerequisite: MUSA 250. Corequisite: MUSA 350A or 350B if not completed. MUSA 442A or 442B. (Fall)

APPLIED MUSIC LESSONS

Applied music lessons for credit are available to music students and as a general education choice to students concurrently enrolled in an MUSP course. Students meet weekly with an individual instructor assigned by the Music Department. An instructional fee is required, as is accompanist remuneration. Lessons may be taken twice at each level. Music and Music Theatre majors are required to attend and perform at weekly recitals as a component of applied music lessons.
Applied music lessons are offered in the following:

MUSL 130, 230, 330, 430 **Piano (Fall/Spring)** (1-2)
MUSL 131, 231, 331, 431 **Guitar (Fall/Spring)** (1-2)
MUSL 132, 232, 332, 432 **Strings (Fall/Spring)** (1-2)
MUSL 133, 233, 333, 433 **Woodwind (Fall/Spring)** (1-2)
MUSL 134, 234, 334, 434 **Brass (Fall/Spring)** (1-2)

MUSL 135, 235, 335, 435	**Percussion (Fall/Spring)**	**(1-2)**
MUSL 136, 236, 336, 436	**Electronic Instruments (Fall/Spring)**	**(1-2)**
MUSL 137, 237, 337, 437	**Voice (Fall/Spring)**	**(1-2)**
MUSL 138, 238, 338, 438	**Composition (Fall/Spring)**	**(1-2)**
MUSL 350, 450	**Conducting (Fall/Spring)**	**(1-2)**

PERFORMING

Fine Arts General Education for Non-Music Majors: Any MUSP class at the 100 or 200 level may be taken by non-music majors to satisfy the fine arts credit toward general education requirements. Each ensemble may be taken twice at each level: three semesters (3 credit hours) are needed to satisfy the Fine Arts requirement.

Performance ensembles may be taken twice at each level for credit.

MUSP 140, 240, 340, 440 **Wind Symphony** **(1)**
A symphony comprised of serious wind and percussion students, including music majors and non-music majors, who perform a wide variety of standard and current literature. Audition with conductor required. (Fall/Spring)

MUSP 141, 241, 341, 441 **Symphony Orchestra** **(1)**
Ensemble designed to rehearse and perform symphonic literature as well as choral, opera and concerto repertoire. Audition required (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. Prerequisite: MUSP 145B, 245B, 345B, 445B require audition by the band director. (Fall/Spring)

MUSP 146, 246, 346, 446 **Community Performance Organizations** **(1)**
Opportunity for students and other musicians in the community to participate in various community musical groups, such as the Grand Junction Symphony. Audition with conductor is required. (Fall/Spring)

MUSP 148, 248, 348, 448 **Chamber Orchestra** **(1)**
Ensemble designed to rehearse and perform chamber orchestra works. This ensemble will involve strings as well as woodwind and brass instruments. Audition required (Fall/Spring)

MUSP 149, 249, 349, 449 **Young Artists Orchestra** **(1)**
Instrumental music students are provided the opportunity to perform baroque, classical, romantic and 20th century full orchestra repertoire. One rehearsal per week and at least one formal concert per semester featuring a talented soloist. Membership is by audition. (Spring)

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 **Male Choir** **(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. Members must perform a brief audition with 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** (1-2)
Preparation for senior level recital in the student's performance medium with recital approved by the music faculty and recital given during the semester in which the student is registered for this course. Scholarly program notes covering historical aspects, theoretical issues, and/or performance considerations of the recital repertoire are required for the official printed senior recital program. Music Education majors take this course for one credit; Performance majors take this course for two credits. (Fall/Spring)

MUSP 495 **Independent Study** (1-3)

MUSP 496 **Topics** (1-3)

NURSING

School of Business and Professional Studies

Students may be required to purchase additional supplies and uniforms. Approximate cost is between $300.00-500.00.

NURS 201 **Nursing Fundamentals** (3)
NURS 201L **Nursing Fundamentals Laboratory** (3)
Introduction to the theoretical foundations of nursing in the areas of communication, assessment and critical thinking. Economic issues influencing the professional nurse are examined and important interpersonal and psychomotor skills are developed. Three one-hour lectures and three three-hour laboratories per week. Prerequisite: acceptance into BSN program. Corequisites: NURS 202/202L, 203, 204. (Fall/Spring)

NURS 202 **Health Assessment/Promotion** (3)
NURS 202L **Health Assessment/Promotion Laboratory** (1)
Development of the knowledge necessary for completing an adult health assessment. History taking and physical assessment skills are utilized to develop appropriate interventions designed to assist clients with health promotion and lifestyle changes. Students explore principles of health promotion through the life span in a variety of settings. Three one-hour lectures and one three-hour laboratory per week. Prerequisites: acceptance into BSN program. Corequisites: NURS 201/201L, 203, 204. (Fall/Spring)

NURS 203 **Pharmacology I** (1)
Introduction to drug therapy with the study of specific classifications, terminology, theories and techniques of safe administration. Using the nursing process, the toxicity of major drug classifications is investigated, as well as principles of pharmacokinetics, pharmacodynamics, and pharmacotherapeutics. Prerequisites: acceptance into BSN program. Corequisites: NURS 201/201L, 202/202L, 204. (Fall/Spring)

NURS 204 **Nursing Theory/Foundations** (2)

Examination of the history of professional nursing as a scientific discipline. Critical thinking and reasoning are utilized to evaluate selected nursing theories. The language and process of nursing research are introduced as a framework for making sound clinical judgments. Professional networking and legal/ethical issues will be examined. Prerequisites: acceptance to BSN program. Corequisites: NURS 201/201L, 202/202L, 203. (Fall/Spring)

NURS 300 **Professional Transitions** (1)

Introduction to selected concepts related to care of the adult client, the childbearing and childbearing families. Designed to facilitate the transition of the diploma and associate degree graduate to the professional practice of nursing at the baccalaureate level. Credit for previous completed nursing courses (with grades of C or better) will be held in escrow until this course has been successfully completed. (Fall)

NURS 301 **Medical/Surgical Process** (3)
NURS 301L **Medical/Surgical Process Laboratory** (4)

Application of the nursing process in the care of individuals and their families experiencing deviations from their usual levels of wellness from onset to resolution. Pathophysiological problems of moderate intensity and relative stability are explored. The nursing process is used to support the coping mechanisms of individuals and their families to assist in the regaining and maintaining of optimal wellness. Three one-hour lectures and four three-hour laboratories per week. Prerequisites: NURS 201/201L, 202/202L, 203, 204. Corequisites: NURS 302, 303, 304. (Fall/Spring)

NURS 302 **Family Nursing Through the Lifespan** (3)

Theory of family-centered practice in nursing. Utilizing the nursing process, students gather and analyze data to formulate and evaluate interventions with families from diverse backgrounds. Selected learning experiences provide opportunities for the student to develop cognitive, psychomotor and affective competencies essential to the care of both healthy and high-risk families through the lifespan. Three one-hour lectures and one three-hour laboratory per week. Prerequisites: NURS 201/201L, 202/202L, 203, 204. Corequisites: NURS 301/301L, 303. (Fall/Spring)

NURS 303 **Professional Development** (1)

Introduction to basic knowledge and skills related to organizational structure, systems of patient care delivery and communication within the health care team. Principles of time management, teaching-learning theories, and the role of the professional in nursing are explored. Clinical experience will be incorporated into the medical-surgical clinical lab. Awareness of the patient care environment, as well as the organization of health care delivery, will be documented through journaling. Prerequisites: NURS 201/201L, 202/202L, 203, 204. Corequisites: NURS 301/301L, 302, 304. (Fall/Spring)

NURS 304 **Pharmacology II** (1)

Continuation of Pharmacology I covering the nursing process, principles of pharmacokinetics, pharmacodynamics, pharmacotherapeutics and toxicity of major drug classifications. Prerequisites: NURS 201/201L, 202/202L, 203, 204. Corequisites: NURS 301/301L, 302, 303. (Fall/Spring)

NURS 312 **Home Health Nursing** (2)

Examination and comparison of specific nursing interventions unique to the field of home health care. Students enhance their ability to use nursing process with clients experiencing an acute or chronic illness outside of the acute care setting. This course synthesizes the principles of community health nursing with the theory and practice of medical/surgical and mental health nursing. Theoretical content is applied in the clinical settings of concurrent courses. Prerequisites: NURS 301/301L, 302, 303, 304. Corequisites: NURS 313/313L, 314/314L, 315/315L. (Fall/Spring)

NURS 313 **Mental Health** (2)
NURS 313L **Mental Health Laboratory** (2)

Development of a knowledge base of mental health and illness, emphasizing the development of interpersonal skills in the use of the therapeutic relationship. Specific learning experiences provide opportunities for the student to develop proficiency in the practice of psychiatric mental health nursing with diverse populations. Two one-hour lectures and two three-hour laboratories per week. Prerequisites: NURS 301/301L, 302, 303, 304. Corequisites: NURS 312, 314/314L, 315/315L. (Fall/Spring)

NURS 314 **The Childbearing Family** (2)
NURS 314L **The Childbearing Family Laboratory** (2)

Study of the competencies needed to care for the diverse childbearing family through the trimesters of pregnancy. High risk and complications of pregnancy are addressed as well as critical issues of women's health care. Theoretical content is applied in acute care and community settings. Two one-hour lectures and two three hour laboratories per week. Prerequisites: NURS 301/301L, 302, 303, 304. Corequisites: NURS 312, 313/313L, 315/315L. (Fall/Spring)

NURS 315 **Pediatrics** (2)
NURS 315L **Pediatrics Laboratory** (1)
Emphasis on use of the nursing process in the care of children and adolescents experiencing alterations in wellness. The clinical component provides experience with clients in acute care and community settings. Two one-hour lectures and one three-hour laboratory per week. Prerequisites: NURS 301/301L, 302, 303, 304. Corequisites: NURS 312, 313/313L, 314/314L. (Fall/Spring)

NURS 395 **Independent Study** (1-3)

NURS 396 **Topics** (1-3)

NURS 403 **Public Health** (2)
NURS 403L **Public Health Laboratory** (2)
Theoretical basis for the practice of public health nursing. Students investigate the principles and practice of public health nursing including epidemiological investigation, environmental health issues, methods of community health assessment. And interventions with selected population groups. Application of course content is demonstrated in the concurrent clinical course. One one-hour lecture and two three-hour laboratories per week. Prerequisites. NURS 312, 313/313L, 314/314L, 315/315L. Corequisites: NURS 406/406L, 407L, 415. (Fall/Spring)

NURS 406 **Advanced Medical/Surgical** (3)
NURS 406L **Advanced Medical/Surgical Laboratory** (3)
Advanced medical-surgical concepts essential for nursing care of adults requiring intervention in relation to complex multi system illness or injury. The clinical practicum provides opportunity for application of nursing care in institutional and community settings. Three one-hour lectures and three three-hour laboratories per week. Prerequisites: NURS 312, 313/313L, 314/314L, 315/315L. Corequisites: NURS 403/403L, 407L, 415. (Fall/Spring)

NURS 407L **Research Clinical** (1)
Research with an emphasis on the assessment of the outcomes of health promotion and health care interventions. Research questions relevant to clinical practice are developed, with projects being completed the following semester. Prerequisites. NURS 312, NURS 313/313L, NURS 314/314L, NURS 315/315L. Corequisites: NURS 403/403L, NURS 406/406L, NURS 415. (Fall/Spring)

NURS 411 **Leadership** (2)
NURS 411L **Leadership Laboratory** (1)
Use of personal characteristics of the nurse in development of leadership and management strategies. Leadership and management theory are presented. The role of the professional nurse as change agent in shaping health care for the future is explored. Two one-hour lectures and one three hour laboratory per week. Prerequisites: NURS 403/403L, 406/406L, 407L, 415. Corequisites: NURS 412L, 414. (Fall/Spring)

NURS 412L **Senior Specialty** (4)
Development of specialty-focused knowledge and skills in a specified area of interest. Knowledge and skills from basic and upper-division general education and nursing disciplines are integrated when implementing increasingly complex roles to deliver quality nursing care to individuals and groups in a focused clinical area. Prerequisites: NURS 403/403L, 406/406L, 407L, 415.. Corequisites: NURS 411/411L, 414. (Fall/Spring)

NURS 414 **Senior Research Project** (2)
In-depth study and practical application of students' research knowledge base. Prerequisites: NURS 403/403L, 406/406L, 407L, 415. Corequisites: NURS 411/411L, 412L. (Fall/Spring)

NURS 415 **Business of Health Care** (2)
Appraisal of socio-economical factors as they challenge nursing's ability to provide the quality of caring that is needed by clients. Prerequisites: NURS 312, 313/313L, 314/314L, 315/315L. Corequisites: NURS 403/403L, 406/406L, 407L. (Fall/Spring)

NURS 495 **Independent Study** (1-3)

NURS 496 **Topics** (1-3)

OFFICE ADMINISTRATION

School of Applied Technology

OFAD 101 **Office Accounting** (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 o books. Not advised for four-year accounting majors. No credit allowed if credit already established in ACCT 201. (Fall/Spring)

OFAD 105 **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)

OFAD 147 **Medical Terminology** (2)
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 153 **Beginning Word Processing** (2)
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. Prerequisite: knowledge of keyboard. (Fall)

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** (2)
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 203 **Medical Records Management** (3)
Legal requirements for developing, storing, and maintaining medical records that support the patient privacy protections set forth by industry standards. Prerequisite: OFAD 202. (Fall/Spring)

OFAD 206 **Computerized Office Accounting** (3)
Basic accounting principles applied by using computer software. Prerequisite: OFAD 101. (Spring)

OFAD 221 **Transcription Machines** (3)
Fundamental skills, speed, and accuracy of business or medical transcription on electronic equipment. Prerequisite: consent of instructor. (Fall/Spring)

OFAD 244 **Legal Office 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: sophomore standing. (Fall)

OFAD 248 **Medical Coding** (3)
Basic coding concepts, practical applications, Medicare rules, and billing tips. Basic procedures used with the CPT, HCPCS, and ICD9 coding systems. Prerequisites: OFAD 147, OFAD 253, sophomore standing or consent of instructor. (Spring)

OFAD 249 **Medical Office Procedures** (3)
The knowledge and skills needed to work successfully in a medical office. Emphasis in communications, secretarial responsibilities, safety and security, different health insurances utilized, medical office management, and the various kinds of office equipment found in a medical office. Physician schedules will be a part of the course. Prerequisites: OFAD 147, 253, sophomore standing or consent of instructor. (Spring)

OFAD 253 **Intermediate Word 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. (Fall)

OFAD 266 **Advanced Word Processing** (3)
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. Prerequisite: OFAD 253. (Spring)

OFAD 270 **Integrated Office 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 293 **Cooperative Education** (3)
Practical uses of educational training through the joint supervision of a participating employer and a designated faculty member. Prerequisite: Sophomore status. (Spring)

OFAD 295 **Independent Study** (1,2)

OFAD 296 **Topics** (1-3)

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 296 **Topics** (1-3)

PHIL 320 **Philosophy of Religion** (3)
Exploration of fundamental issues regarding religion and examination of the principles of inquiry involved in dealing with such issues philosophically. Issues include the concept of God, arguments for the existence of God, the relationship between faith and reason, the validity of religious experience, pluralism in world religions, etc. Prerequisites: PHIL 110 or 275, or consent of instructor. (On demand)

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 philo-

sophical 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/Spring)

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. (Fall/Spring)

PHYS 105 **Physics by Inquiry** **(2)**

Laboratory-based introduction to physics and the physical sciences. Starting from their own observations, students develop basic physical concepts, use and interpret different forms of scientific representations, and construct explanatory models with predictive capabilities. Topics include properties of matter, heat and temperature, magnets, electric circuits, motion, and astronomy. Recommended for prospective K-12 teachers. (Fall)

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. PHYS 111, 111L is a prerequisite for PHYS 112, 112L. Four lectures and one two-hour laboratory per week. (Fall/Spring)

PHYS 131 **Fundamental Mechanics** **(4)**
PHYS 131L **Fundamental Mechanics Laboratory** **(1)**

First of a foundation series of three physics courses for scientists and engineers. The Newtonian dynamics of matter is presented, along with the laws of momentum and energy conservation. Specific force laws are used to analyze problems drawn from engineering, biology, astronomy, and physics. Galilean relativity is discussed, and cultural as well as philosophical and practical aspects of physics are studied. The language of calculus and vector spaces is used throughout the course. Corequisite: MATH 151. Four lectures and one two-hour laboratory per week. (Fall/Spring)

PHYS 132 **Electromagnetism and Optics** **(4)**
PHYS 132L **Electromagnetism and Optics Laboratory** **(1)**

The second foundation physics for scientists and engineers. The field 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. Maxwell's equations are presented and electromagnetic radiation discussed. The course concludes with an introduction to optics. Both geometric and the wave model for light are studied. The associated laboratory course will include experiments on fields, circuits, and optical systems. Prerequisites: PHYS 131, 131L. Corequisite: MATH 152. Four lectures and one two-hour laboratory per week. (Fall/Spring)

PHYS 196 **Topics** **(1-3)**

PHYS 201 **The Cosmic Perspective** (2)
PHYS 201L **The Cosmic Perspective** (1)

The second astronomy course for both scientists and non-scientists. Topics include space research, work with ground-based telescopes, basic results of astronomical observations, and modern astronomical theories. Labs include practice in operating a telescope, astronomical observations, and solutions of problems. Mathematics is involved on a level not higher than MATH 113. (Fall/Spring)

PHYS 231 **Modern Physics** (3)

The third foundation physics course for scientists and engineers. Relativity and quantum theory are the themes of this course. Relativistic kinematics and dynamics are studied. Quantum theory is introduced in the examination of blackbody radiation, the photoelectric effect, and the energy quantization of atoms. The Schrodinger wave equation is used to analyze simple quantum systems. The course concludes with applications drawn from such topics as atomic and molecular physics, solid-state physics, nuclear and high-energy physics, and astrophysics. Prerequisites: PHYS 132, 132L. Corequisite: MATH 253. (Fall/Spring)

PHYS 296 **Topics** (1-3)

PHYS 300 **New Directions in Science** (3)

A survey of recent developments in science. This course is open to qualified students in liberal arts as well as the sciences. Faculty from various disciplines will participate. Topics will be drawn from astronomy, biology, chemistry, geology, physics, engineering, and applied mathematics. Permission of instructor required. (Fall)

PHYS 311 **Electromagnetic Theory I** (3)

A mature study of electromagnetic fields. The course begins with a review of Maxwell's equations. Static fields are 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. Prerequisites: PHYS 132, PHYS 132L, MATH 260, Corequisite: MATH 360. (Fall)

PHYS 312 **Electromagnetic Theory II** (3)

A continuation of PHYS 311. Electromagnetic waves were studied. Wave propagation in conducting and nonconducting media is examined, along with dispersion phenomena. Waveguides are examined. Electromagnetic field radiation is studied, both for point charges and for arbitrary charge distributions. The course concludes with a reformulation of electromagnetism in the language of special relativity. Prerequisites: PHYS 311, 320. (Spring)

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 231. Corequisite: MATH 360. (Fall)

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. (Spring)

PHYS 331 **Advanced Laboratory I** (2)
PHYS 332 **Advanced Laboratory II** (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 computers for data acquisition and processing. The experiments to be performed are selected from electromagnetism, atomic, nuclear, and solid-state physics. Prerequisite: PHYS 231. (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. Prerequisite: PHYS 132, ENGR 262, MATH 360. (Fall)

PHYS 371 **Linear Systems Analysis** (3)

The analysis of lumped-parameter, time-invariant linear systems. After a review of the characterization of linear systems by differential equations, Fourier transforms are introduced for the description of signals. Laplace transforms are next employed for both the description of signals and for system transfer functions. Transient and steady-state behaviors are analyzed. Pole-zero analysis is introduced and system stability and feedback concepts studied. The course concludes with an introduction to state-variable techniques. Throughout the course, applications are drawn from both electrical and mechanical systems. Prerequisites: ENGR 251, 251L, and MATH 260. (Fall, alternate years)

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 132 ENGR 262, MATH 360. (Spring)

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. (Fall)

PHYS 471 **Computational Physics I** (3)

A foundation course in Computational Physics which requires skills of both theoretical and experimental physics. This is a modern field in which computers are used to solve physics problems whose complexity places them beyond analytic solution. Topics discussed include Fitting and Experimental Spectrum, Random Walk Simulation, Monte Carlo Applications to Radioactive Decay, Quantum Eigenvalues, Particle in a Box. Prerequisites: CSCI 112, PHYS 231. Corequisite: MATH 369 (Spring)

PHYS 472 **Computational Physics II** (3)

A continuation of PHYS 471. Computers are used to solve more complex problems in physics. Topics include anharmonic oscillations, nonlinear systems, matrix computing, k-space Schrodinger equation, quantum scattering in k-space, thermodynamic simulations, the Ising Model, electrostatic potentials. Prerequisites: PHYS 321, PHYS 471. (Alternate Fall)

PHYS 473 **Modern Optics** (3)

Modern principles and applications of optics. Models for light are reviewed and extended. Interferometry and coherence theory are studied. The Fourier transform description of images is introduced and optical systems analyzed. Diffraction theory is used in a number of applications. Anisotropic media and polarization phenomena are studied. Radiometry, light sources, and optical detectors are discussed. The course concludes with an introduction to quantum optics and a survey of optical processes in semiconductors. Prerequisite: PHYS 321. (Spring)

PHYS 475 **Elasticity** (3)

A study of the continuum model of solids, with an emphasis on applications. The stress tensor is introduced and used to write equations of motion. The conditions of state equilibrium are studied. Stress components are analyzed and principles axes and stresses computed. Deformations are analyzed using the strain tensor, and constitutive relations used to relate stress and strain. Linear elasticity is emphasized, both in isotropic and anisotropic materials. Structural deformations are computed for a variety of mechanical systems. The course concludes with an introduction to nonlinear materials and to finite element techniques. Prerequisites: ENGR 261 and MATH 360. (On demand)

PHYS 476 **Fluid Dynamics** (3)
A study of the continuum model for liquids and gases. The properties of fluids are discussed. The kinematics of the velocity flow field are introduced, and both Lagrangian and Eulerian pictures for flow are presented. The Navier-Stokes equations are derived and inviscid flow studied. The course concludes with a discussion of shock waves. Prerequisites: ENGR 255, and MATH 360. (On demand)

PHYS 482 **Senior Research** (1)
An individual research project, supervised by a faculty advisor. The project may be selected from experimental or theoretical topics. The research concludes with a formal report written in accordance with The American Institute of Physics Style Manual. This course is normally taken twice in the senior year. (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 236 **State and Local Government** (3)
Theories of state formation and constitutional development, city charters, county government, and intergovernmental relations with emphasis on Colorado. Prerequisites: POLS 101 or consent of instructor. (Spring)

POLS 261 **Comparative Politics** (3)
Introduction to conceptual models and approaches utilized in the comparative study of nations and their polities. Application of these theories to selected democratic, communist, and developing political systems. (Fall/Spring)

POLS 310 **Development of the American Constitution** (3)
A study of the historical development of the U. S. Constitution. Particular emphasis will be placed on the ideological and political origins of the constitution and constitutional change through formal amendments, judicial interpretation, and the political process. Prerequisite: POLS 101 or consent of instructor. (Alternate Spring)

POLS 324 **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. (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 328 **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. Prerequisites: POLS 101 or ADJU 201. (Spring)

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 or consent of instructor. (Fall)

POLS 352 **Religion and Politics** **(3)**
The interactions of religion and politics in the United States, several liberal democracies and within international relations. (Alternate Fall)

POLS 355 **Politics in the Information Age** **(3)**
Study of the impact of the "information" age on American politics and democracy. Prerequisites: POLS 101 or consent of instructor. (Alternate 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. Prerequisites: POLS 261 or HIST 102. (Fall)

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 261 or HIST 102. (Spring)

POLS 395 **Independent Study** **(1-3)**

POLS 396 **Topics** **(1-3)**

POLS 412 **Constitutional Law** **(3)**
An analysis of American constitutional theory as articulated by the U. S. Supreme Court. Specific topics include the nature of judicial review, the powers of the President and Congress, federalism, the regulation of commerce and the development of substantive due process. Prerequisite: POLS 101 or consent of instructor. (Spring)

POLS 413 **Civil Liberties** **(3)**
A study of the constitutional relationship between the individual and the state. Particular emphasis will be placed on First Amendment freedoms of speech, press, and religious belief, as well as theories of due process and equal protection. Prerequisite: POLS 101 or consent of instructor. (Alternate Fall)

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 for POLS 452/Spring for POLS 453)

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)

POLS 488 **Environmental Politics and Policy** **(3)**
An introduction to the political issues and problems associated with patterns of socio-economic growth and its environmental impact at both domestic and global levels of analysis. Prerequisites: POLS 101 or consent of instructor. (Fall)

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)

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)

PSYCHOLOGY

School of Humanities and Social Sciences

PSYC 150 **General Psychology** (3)
Examines the fundamental principles of psychology. (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 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 150. (Fall)

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 150, STAT 200; must meet "3. Special Requirements" specified for the Psychology B.A. program in this catalog. (Spring)

PSYC 312 **Experimental Psychology** (3)
PSYC 312L **Experimental Psychology Laboratory** (1)
Fundamentals of experimental methodology. Application of principles of laboratory research in areas of psychophysics, learning and memory, and biofeedback. Formal reports of projects required. Three lectures and one two-hour laboratory per week. Prerequisites: PSYC 150, STAT 200; must meet "3. Special Requirements" specified for the Psychology B.A. program in this catalog; consent of instructor. (Spring)

PSYC 314 **Psychology of Learning** (3)
PSYC 314L **Psychology of Learning Laboratory** (1)
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. Three lectures and one two-hour laboratory per week. Prerequisites: PSYC 150, STAT 200; must meet "3. Special Requirements" specified for the Psychology B.A. program in this catalog; 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 150. (Fall)

PSYC 325 **Environmental Psychology** (3)
Presentation and discussion of ways in which psychology can redefine and help solve some current environmental problems. Prerequisites: PSYC 150 or consent of instructor. (Fall)

PSYC 330 **Psychology of Adolescents and Young Adults** (3)
Study of principles of human development (biological, cognitive, and social/emotional) from puberty through young adulthood. Prerequisites: PSYC 150. (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. Prerequisites: Must meet "3. Special Requirements" specified for the Psychology B.A. program in this catalog. (On demand)

PSYC 335 **Psychology of Women** (3)
A brief account of the role of women in mythology and history will be followed by coverage of women's heritage in psychology. Then gender specific aspects of physical, psychological and social development will be covered. Current areas of interest will be included, e.g., communication, work-related issues, relationships. Prerequisites: PSYC 150. (Fall)

PSYC 340 **Abnormal Psychology** **(3)**
Concepts related to psychopathology and personality disorders including functional causation, general psychological theory, and behavior deviation patterns. (Fall/Spring)

PSYC 350 **Psychology of Adulthood** **(3)**
Study of principles of human development (biological, cognitive, and social/emotional) from the latter part of young adulthood through late adulthood. Prerequisite: PSYC 150. (Spring)

PSYC 360 **Sport Psychology** **(3)**
Introduction to the theories and research in Sport Psychology, including topics such as aggression and violence in sports, psychological characteristics of participants, sexual identity and motivation. Prerequisites: PSYC 150.

PSYC 370 **Cross-Cultural Psychology** **(3)**
Survey of theory and methods in cross cultural psychology. Prerequisite: PSYC 150. (Spring)

PSYC 380 **Comparative Psychology** **(3)**
Study of animal behavior. Topics will include communication, learning, memory, intelligence and social behavior in various animal populations. Prerequisite: PSYC 150. (Alternate Fall)

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: Must meet "3. Special Requirements" specified for the Psychology B.A. program in this catalog. (Fall)

PSYC 410 **Drugs and Human Behavior** **(3)**
Study of pharmacological effects and behavioral consequences of self-administered depressants, stimulants, and euphoriants, of marijuana, alcohol and tobacco, and of medicines. Prevention of drug-related problems is considered briefly. Prerequisite. PSYC 150. (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 150, STAT 200, or consent of instructor. (Fall/Spring)

PSYC 414 **Systems and Theories of Psychology** **(3)**
Systems and theories of modern psychology and the development of scientific psychology since 1879. Prerequisites: Must meet "3. Special Requirements" specified for the Psychology B.A. program in this catalog; and at least 12 semester hours upper division Psychology course work passed with at least a "C". (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: Must meet "3. Special Requirements" specified for the Psychology B.A. program in this catalog, or consent of instructor. (Spring)

PSYC 420 **Personality** **(3)**
Examination of personality psychology from the time of Freud through the present. Theories and various approaches to understanding the development and functioning of both the general and the unique in personality are emphasized. Prerequisite: PSYC 150, recommend PSYC 400; must meet "3. Special Requirements" specified for the Psychology B.A. program in this catalog. (Spring)

PSYC 422 **Sensation and Perception** **(3)**
Study of the human senses, especially vision and hearing, and of people's meaningful organization of sensory information. Prerequisites: PSYC 150; STAT 200; must meet "3. Special Requirements" specified for the Psychology B.A. program in this catalog. (Spring)

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 150; biology course recommended. (Spring)

PSYC 495 **Independent Study** (1-3)

PSYC 496 **Topics** (1-3)

PSYCHOLOGY – COUNSELING

School of Humanities and Social Sciences

PSYP 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 150 or consent of instructor. (Fall)

PSYP 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 150 or consent of instructor. (Fall)

PSYP 396 **Topics** (1-3)

PSYP 410 **Introduction to Marriage and Family Counseling** (3)
Key theories and approaches for diverse problem areas in Marriage and Family Counseling, including domestic violence and substance abuse. Explore career options and training for counselors. Prerequisite: PSYC 150 or SOCO 144. (Fall)

PSYP 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 150 or 340; or consent of instructor. (Spring)

PSYP 422 **Psychological Interviewing** (3)
Psychological interviewing techniques, methods, and interpretation will be examined using the DSM-IV. Interview types will include counseling, intake, assessment, and diagnosis. Prerequisites: PSYC 150, 340 and 400. (Spring)

PSYP 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 150, 320, 420. (Fall)

PSYP 496 **Topics** (1-3)

PSYP 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)

PSYP 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)

RADIOLOGIC TECHNOLOGY

School of Business and Professional Studies

RTEC 114 **Radiographic Clinical Experience I** (2)
Introduces the clinical education experience in both the laboratory and at the clinical education center. This course is divided into two eight-week sessions. The first portion will be spent in the Autotutorial Laboratory on campus and the second

portion will be spent at an assigned clinical education site. Corequisites: RTEC 121, 121L, 122, 122L, 120, 125. Prerequisites: BIOL 141, 141L, acceptance into the Radiologic Technology Program.

RTEC 120 **Introduction to Radiologic Technology and Patient Care** **(3)**

Introduction to radiologic technology with emphasis on the education program, the profession, and the health-care delivery system. Fundamentals of patient care including ethics, professional conduct, communication, radiation protection and patient management. Study of medical terminology is included. Corequisites: RTEC 114, 121, 121L, 122, 122L, and 125. Prerequisites: BIOL 141, 141L, acceptance into the Radiologic Technology program.

RTEC 121 **Radiographic Anatomy and Positioning I** **(2)**
RTEC 121L **Radiographic Anatomy and Positioning I Laboratory** **(1)**

Instruction in every phase of radiography 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. Corequisites: RTEC 114, 120, 122, 122L, and 125. Prerequisites: BIOL 141, 141L, acceptance into the Radiologic Technology program.

RTEC 122 **Principles of Radiographic Exposure** **(2)**
RTEC 122L **Principles of Radiographic Exposure Laboratory** **(1)**

Fundamental factors which govern and influence the radiographic image including equipment, accessory devices, exposure mathematics, and processing. Technical and prime exposure factors are discussed and applied in the energized laboratory. Corequisites: RTEC 114, 120, 121, 121L, and 125. Prerequisites: BIOL 141, 141L, acceptance into the Radiologic Technology program.

RTEC 124 **Radiographic Clinical Experience II** **(4)**

Continues clinical education and introduces additional concepts correlating skills with academic courses. Includes one hour a week of film critique provided by the clinical instructor. Corequisites: RTEC 131, 131L, 132,132L, 135. Prerequisite: RTEC 114 or consent of the instructor.

RTEC 125 **Radiologic Science** **(2)**

Basic physics, fundamentals of x-ray generating equipment, x-ray production and interaction, beam characteristics and units of radiation measurement. Corequisites: RTEC 114, 120,121, 121L, 122, and 122L. Prerequisites: BIOL 141, 141L, acceptance into the Radiologic Technology program.

RTEC 131 **Radiographic Anatomy and Positioning II** **(2)**
RTEC 131L **Radiographic Anatomy and Positioning II Laboratory** **(1)**

Continuation of RTEC 121 with instruction in every phase of radiography of the axial skeleton, digestive system, urinary system, cranium, spinal column and facial bones. Corequisites: RTEC 124, 132, 132L and 135. Prerequisites: RTEC 120, 121, 121L, 122, 122L, and 125.

RTEC 132 **Radiographic Equipment and Special Imaging** **(2)**
RTEC 132L **Radiographic Equipment and Special Imaging Lab** **(1)**

Continuation of RTEC 122 including equipment utilized to produce diagnostic images, recording media and techniques, quality assurance and computer applications in diagnostic radiology. Advanced imaging modalities of computed tomography, MRI, cardiovascular imaging technology, ultrasound and mammography are also presented. Applied practice of quality assurance, technique charts and mammographic demonstrations are performed in the laboratory. Corequisites: RTEC 124, 131, 131L, and 135. Prerequisites: RTEC 120, 121, 121L, 122, 122L, and 125.

RTEC 135 **Radiation Biology and Protection** **(2)**

Principles of radiation interaction in cells and the effect and factors affecting cell response to radiation, acute and chronic effects of radiation, dose equivalent limits, and regulatory involvement. Responsibility by the radiographer to patients, personnel, the public and self are also discussed. Corequisites: RTEC 124, 131, 131L, 132, 132L. Prerequisites: RTEC 120, 121,121L, 122, 122L, 125.

RTEC 214 **Radiographic Clinical Experience III** **(8)**

Continues clinical education and introduces additional concepts correlating skills with academic courses. Includes film critique provided by the clinical instructor. Prerequisite: completion of all 100 level radiologic technology courses or permission of the instructor.

RTEC 224 **Radiographic Clinical Experience IV** **(8)**

Continues clinical education and introduces additional concepts correlating skills with academic courses. Corequisites: RTEC 251, 255. Prerequisite: RTEC 214 or consent of the instructor.

RTEC 234 **Radiographic Clinical Experience V** (8)
Continues clinical education and introduces additional concepts correlating skills with academic courses. Corequisites: RTEC 261, 265. Prerequisites: RTEC 224, 251, 255 or consent of instructor.

RTEC 251 **Radiographic Pathology** (3)
Radiographic and advanced modality equipment, radiographic anatomy and pathology involved in specialized and highly technical procedures. Contrast media, pharmacology and venipuncture are also covered. Corequisites: RTEC 224, 255. Prerequisite: All RTEC 100 level courses.

RTEC 255 **Radiographic Assessment I** (1)
Radiographic film quality critique and patient care assessment. Utilizes previous knowledge of film quality factors and patient care techniques as well as an understanding of pathology demonstrated on radiographs. Corequisites: RTEC 224, 251. Prerequisite: all RTEC 100 level courses, RTEC 214 or consent of instructor.

RTEC 261 **Radiographic Review** (3)
Departmental administrations, radiologic records and job seeking skills are discussed. The major portion of this course is devoted to compiling a portfolio of radiographic fundamentals in all aspects of the program; and reviewing in preparation for the national registry examination. Corequisite: RTEC 234,265. Prerequisites: All RTEC 100 level courses and RTEC 224, 251 and 255.

RTEC 265 **Radiographic Assessment II** (1)
Continuation of RTEC 255. Radiographic film quality critique and patient care assessment. Corequisites: RTEC 234, 261. Prerequisites: RTEC 214, 224, 251, 255 or consent of instructor.

SOCIAL SCIENCE

School of Humanities and Social Sciences

SOCI 121 **Americorps Field Placement I** (3)
Exploration of the practice and theory of community service. Prerequisites: enrollment in a national Service Program, approval of AmeriCorps Directors. (Spring)

SOCI 122 **Americorps Field Placement II** (3)
In-depth analysis, strategic planning, implementation and evaluation of community projects. This class shall give the students an opportunity to examine real issues in the community and become a part of the problem-solving process. Prerequisite: SOCI 121. (Fall)

SOCI 136 **The African-American Experience** (3)
An introduction to the experience of African-Americans from the perspective of the Social Science disciplines. (Spring)

SOCI 296 **Topics** (1-3)

SOCI 310 **Methods of Social Research** (3)
Research methods and their application to the social sciences. Prerequisites: PSYC 150 or SOCO 260 and STAT 200. (Spring)

SOCI 340 **Methods of Teaching Social Studies: Secondary Schools** (4)
Examination and comparison of the social studies, exploring both new and traditional curricula, philosophies, and teaching methods. 75 hours of field work required. 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)**

SOCI 497 **Structured Research** **(3)**
Social or behavioral science research under the directed guidance of a faculty member. Designed for junior and senior level students. (On demand)

SOCIOLOGY

School of Humanities and Social Sciences

SOCO 144 **Marriage and Families** **(3)**
Marriage and families in social, historic, institutional, theoretical, and gendered contexts. Includes family formation, family problems, and alternative intimate relationships. (Fall/Spring)

SOCO 260 **General Sociology** **(3)**
An overview of sociological concepts, terminology, basic principles, and important theories; introduction to substantive areas of the field. (Fall)

SOCO 264 **Social Problems** **(3)**
Major contemporary social problems including crime, race relations, war, educational systems, unequal distribution of wealth, and political apathy. (Fall/Spring)

SOCO 296 **Topics** **(1-3)**

SOCO 300 **Political Sociology** **(3)**
The interactions and interrelationships between social and political forces. Topics covered include state and society, the social bases of power, ideology, and the media. Prerequisite: SOCO 260, or POLS 101 or consent of instructor. (Spring)

SOCO 301 **Introduction to Human Services** **(3)**
Exploration of human services agencies, programs, funding, philosophies, history, and career opportunities. Prerequisites: SOCO 260, 264 or consent of instructor. (Fall)

SOCO 305 **Environmental Sociology** **(3)**
An overview of the interrelations among the physical environment, population, and technology; the origin and basis of environmental social movement organizations, the social construction of environmental issues. Prerequisites: SOCO 260 or consent of the instructor. (Alternate Fall)

SOCO 310 **Sociology of Religion** **(3)**
Sociological aspects of religion, including the social function of religion, religions traditions in the global village, and the rise of new religious movements. Prerequisite: SOCO 260 or consent of instructor. (Fall)

SOCO 312 **Collective Behavior and Social Movements** **(3)**
Collective behaviors, such as demonstrations, strikes, riots, political movements and revolutions, in both a historical and contemporary context. Prerequisite: SOCO 260 or consent of instructor. (Spring)

SOCO 314 **Population** **(3)**
Basic concepts of population studies in international context. Demographic trends including fertility, mortality and migration, as well as the causes and consequences of those trends. Prerequisites: SOCO 260 or consent of instructor. (Spring)

SOCO 316 **Social Inequality** **(3)**
Causes and effects of inequality, especially social class, with consideration of race and gender. Prerequisites: SOCO 260, or SOCO 264 or consent of instructor. (Fall)

SOCO 320 **Life Course Sociology** **(3)**
Investigation of the social factors influencing human lives, emphasizing the connection between individual lives and social change. Prerequisites: SOCO 144 or SOCO 260 or consent of instructor. (Fall)

SOCO 330 **Crime and Delinquency** **(3)**
Crime, delinquency, and deviance in social and theoretical context. Prerequisite: SOCO 260 or SOCO 264 or consent of instructor. (Fall)

SOCO 340 **Sex and Gender** (3)
Perspectives on the social organization of sex and gender. Prerequisites: SOCO 144 or SOCO 260; or consent of instructor. (Spring)

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. Prerequisite: SOCO 260 or SOCO 264 or consent of instructor. (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 **Classical Social Theory** (3)
The development of social theory from the Enlightenment through early twentieth century, with emphasis on Marx, Weber, and Durkheim. Prerequisite: SOCO 260 or consent of instructor. (Fall)

SOCO 410 **Contemporary Social Theory** (3)
Twentieth century sociological theories and their historical links to classical thought. Prerequisite: SOCO 260 or consent of instructor. (Spring)

SOCO 495 **Independent Study** (1-3)

SOCO 496 **Topics** (1-3)

SOCO 499 **Internship** (4)

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, breath control, projection, and the phonetic alphabet. Recommended for theatre majors, teachers, pre-law, ministers and business majors. (Fall)

SPCH 196 **Topics** (1-3)

SPCH 203 **Persuasion** (3)
Open discussions on the ethics, process, and application of everyday use of persuasion; how it applies to our advertisements, politics, and friendships. A good class to prepare for debate. Prerequisite: SPCH 102. (Fall)

SPCH 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)

SPCH 296 **Topics** (1-3)

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. (Alternate Fall)

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 305 **Communication: Culture, Diversity and Gender** **(3)**
Research and practical application to facilitate constructive relationships with individuals from other countries, with individuals from sub-cultures within our culture, and with individuals of the opposite sex. Prerequisite: SPCH 101. (Alternate Fall)

SPCH 306 **Communication and Leadership** **(3)**
Study of communication styles of great leaders from every field of endeavor to determine the sources of their influence over the behaviors, thoughts, and feelings of their followers. Included will be study of the historical environments that gave rise to each leader's style. Prerequisite: SPCH 101. (Alternate Spring)

SPCH 308 **Argumentation & Debate** **(3)**
Research and development of various types of debate such as student congress, mock trial, value debate, etc., using national and international topics of current interest. Prerequisites: SPCH 102, 203 or consent of instructor. (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

Graphing calculator is recommended or required for several statistics classes. See department for recommended models.

In order to take any of the following statistics courses, each listed prerequisite (or an equivalent course) must be completed with a grade of "C" or better. The instructor may waive the prerequisite.

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 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 350 **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, or consent of instructor. (Spring)

STAT 395 **Independent Study** (1-3)

STAT 396 **Topics** (1-3)

STAT 412 **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 350 and familiarity with matrix algebra. (Fall)

STAT 425 **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 412. (Alternate Spring)

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)

SUPPLEMENTAL COURSES

SUPP 090 **College Preparatory Reading** (3)
Introduction to strategies necessary for college level content reading. Includes how to read textbooks more effectively, locate main ideas and supporting details, develop literal and critical comprehension, and improve vocabulary development. Emphasizes applying these strategies to content area courses. (Fall/Spring)

SUPP 101 **Introduction to Higher Education** (3)
Assistance and guidance for students in maximizing their potential for success in college by promoting their academic growth. Emphasizes test taking, reading techniques, note taking, and memory as well as the following: critical thinking, stress management, utilization of campus resources, goal setting, relationship of academic planning to career goals, career exploration and other topics. (Fall/Spring/Summer)

SUPP 201 **Theory and Practice of College Peer Tutoring** (3)
General and specific training for college level peer tutoring. Readings, discussion, experiential exercises expose students to contemporary learning theories, learning enhancement techniques, and effective applications to group and individual learning situations. Supervised tutoring practicum applies theories and concepts to actual tutoring sessions. Prerequisite: permission by instructor; 2.5 GPA; recommendation by instructor in subject area. (Fall/Spring)

TELECOMMUNICATIONS - COMMUNICATIONS TECHNOLOGY

School of Applied Technology

TCOM 150 **Data Communications** (4)
Information communications for business and information management students. Basic knowledge of data processing required. (Spring)

TCOM 160 **Cable Communications** (4)
Basic operations of a classical coaxial cable TV system (CATV). The relation of the head end engineering and the trunk and feeder amplifiers to propagate a signal of satisfactory measurable strength to the tap at the subscriber's home will be demonstrated. (Fall/Spring)

TCOM 170 **Voice Communications** (4)
Overview of communication systems that include both central office based and premise based platforms. The switching and service components of RBOC and inter-exchange providers will be examined and discussed. Characteristics, advantages, and disadvantages of the various systems will be compared and contrasted. Architecture and design of switching infrastructures and components will also be covered. (Fall)

TCOM 175 **Telecommunications Constructions and OSHA Safety** (3)
Safety awareness in the communications industry, including: personal, building, constructing, vehicular safety and OSHA regulations. (Fall/Spring)

TCOM 190 **Emerging Technologies** (2)
Application of new technologies in communications through increased use of the electromagnetic spectrum. (Fall/Spring)

TCOM 215 **Communication Transmission Systems** (3)
Overview of communication transmission systems. Including components, characteristics, advantages and disadvantages of the various systems.

TCOM 220 **Regulations and Standards** (3)
Overview of the regulations and standards that pertain to technicians in the communications industry. Regulated as well as unregulated business operations will be discussed. (Fall/Spring)

TCOM 240 **Telecommunications Engineering – Outside Plant** (3)
Covers the components of engineering the telephone outside plant, fundamentals of transmission, resistance design, and distribution cable design in serving a customer area. (Fall/Spring)

TCOM 245 **Engineering Economics** (6)
Economic principles in costing, estimating the cost of money, value, capital investment, profitability and inventory. (Fall/Spring)

TCOM 255 **Telecommunications Installation** (3)
Basic phone installation from pedestal to customer premise equipment (CPE) and the necessary troubleshooting and testing skills to maintain the phone system integrity. (Fall/Spring)

TCOM 265 **Telecommunications Cable Splicing & Repair** (3)
Print reading, manhole testing and safety, cable and fault locating, and splicing. (Fall/Spring)

TCOM 275 **Field Studies: Telecom Engineering Planning** (3)
Basic knowledge to articulate the tactical planning functions performed within capacity provisioning. The student will be able to access and apply the various tactical planning tools and data elements to supporting documentation. (Fall/Spring)

TCOM 299 **Internship** (3)
Related work experience in the communications industry that meets instructor's approval. (Fall/Spring)

THEATRE

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 or by attending seminars or workshops. Papers and discussions are used for evaluation. (On demand)

THEA 141 **Theatre Appreciation** (3)
Examination of basic presentation techniques of theatre, motion picture, television, and radio. (Fall/Spring)

THEA 142 **Make-Up** (3)
All types of make-up for the stage. Students examine straight and character make-up techniques and learn the use of crepe hair, prosthetics, and other material. (Fall)

THEA 143 **Costuming** (3)
Costume design, construction, and history of costume. (Spring)

THEA 145 **Introduction to Dramatic Literature** (3)
Dramatic literature from classical Greeks to 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.) (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. Prerequisites: THEA 151 or consent of the Instructor. (Spring)

THEA 196 **Topics** (1-3)

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 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 251 **Acting III: The Meisner Approach** (3)
An examination of the Meisner Approach, which is the "industry standard" technique that actors use to explore the modern Naturalistic/Realistic genre of plays and screenplays. Prerequisites: THEA 151, 152. (Fall)

THEA 260 **Costume Construction I** (3)
Introduction to sewing skills, commercial patterns, distressing garments, and creative problem solving. Prerequisite: THEA 143. (Alternate Spring)

THEA 270 **Music Theatre Performance Workshop** (2)
Exploration at the beginning level theories and elements of the audition, singing, dancing, and theatrical presentation 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 Workshop Laboratory** (1)
Practical application of dance, music, and theatre for the individual or the ensemble at the beginning level. One two-hour laboratory per week. Corequisite: THEA 270. Prerequisites: consent of instructor. (Fall)

THEA 296 **Topics** (1-3)

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 322 **Stage Management** (3)
Theory and principles of human resources management, theatre technical production, and actual stage management situations. Prerequisites: THEA 151, THEA 243, THEA 244, or consent of instructor. (Alternate Spring)

THEA 328, 329 **Theatre Forums** (1,1)
See THEA 128, 129. (On demand)

THEA 331 **Theatre History I: 400 B.C. to 1642** (3)
History of theatre as an institution and its relationship to the other arts and to the social and economic environment, from 400 B.C. to 1642 A.D. (Alternate Fall)

THEA 332 **History of Theatre II: From 1642 to the Present** (3)
Major world theatre events from 1642 to the present day. (Alternate 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. (Alternate Spring)

THEA 343 **Scene Design** (3)
Experience in the designing of scenery and props for various types of productions with emphasis on research, acquisition, drafting, perspective, and rendering techniques. Prerequisite: 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 352 **Acting V: 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 Performance Workshop** (2)
Exploration at an intermediate level theories and elements of music, theatre presentation and performance. 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 Workshop Laboratory** (1)
Practical application of dance, music, and theatre for the individual or the ensemble. One two-hour laboratory per week. Corequisite: THEA 370. Prerequisites: THEA 270 and 270L or consent of instructor. (Fall)

THEA 376 **World's Greatest Films** (3)
Aesthetics and elements that qualify film as an important art form as seen through the major contributors from three important culturally diverse areas of the world: Europe, Asia and America. (Spring)

THEA 380 **Playwriting I** (3)
Fundamentals of playwriting through a systematic, textual approach, the proper format of scriptwriting, and the writing of short scripts based on common thematic elements. Prerequisite: THEA 260. (Alternate Spring)

THEA 395 **Independent Study** (1-3)

THEA 396 **Topics** (1-3)

THEA 401 **Performing Arts Management** (3)
The business aspects of music and dance concerts, plays and other forms of the performing arts. Included are public relations and advertising, box office, and fiscal control and house management. Practical experience gained from working with area arts organizations. Prerequisites: junior or senior standing or consent of instructor. (Fall)

THEA 411 **American Drama** (3)
From the first American playwright to the plays of today. (Spring)

THEA 412 **Contemporary Drama** (3)
A study of realistic and absurd contemporary playwrights of the world. (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 **Senior Tech/Design Capstone** (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: senior standing or consent of instructor. (Fall/Spring)

THEA 447, 448 **Drama Performance** (1,1)
See THEA 147, 148. (Fall/Spring)

THEA 451 **Directing I** (3)
The fundamentals of directing applied to the direction of a scene or short play for public viewing. Prerequisites: THEA 151, 152 and at least one upper division acting course or consent of instructor. (Fall)

THEA 452 **Directing II: Acting/Directing Capstone** (3)
Advanced directing techniques and production of a one-act play for public viewing. Prerequisite: THEA 451 or consent of instructor. (Spring)

THEA 456 **Acting VI: Acting for the Camera** (3)
The transition from 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 Spring)

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 458 **Acting VIII: Elizabethan Acting Techniques** (3)
An in-depth exploration of acting approaches to the verse drama of Shakespeare. Prerequisites: THEA 151, 152. (Spring)

THEA 470 **Music Theatre Performance Workshop** (2)
Exploration on an advanced level the theories and elements of music theatre presentation and performance. 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 Workshop Laboratory** **(1)**
Practical application of dance, music and theatre for the individual or ensemble. One two-hour laboratory per week. Corequisite: THEA 470. Prerequisites: THEA 370 and 370L or consent of instructor. (Fall)

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)

*At least one course at each level must be taken in sequence.

TRAVEL, TOURISM & RECREATION MANAGEMENT

School of Business and 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, Tourism, and Commercial Recreation 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, Tourism, and Commercial Recreation 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, Tourism, and Commercial Recreation 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 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, Tourism, and Commercial Recreation Management students. Credit not available through competency or challenge. Prerequisite: TRAV 102, GPA of 2.00 or higher, or consent of instructor. (Summer)

TRAV 310 **Travel & Tourism Marketing Techniques** (3)
Interpretation of marketing problems, strategies, and techniques of industries engaged in serving the traveler. Study will include advanced methods of identifying potential markets, preferences and likely responses to promotional programs of private and public travel entities. Required of all TRAV majors. Prerequisites: TRAV 101, MARK 231 or consent of instructor. (Spring)

TRAV 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: TRAV 101, MANG 201. (Fall)

TRAV 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: TRAV 101, TRAV 102, MANG 201. (Spring)

TRAV 352 **Public Recreation 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: TRAV 101, TRAV 102, MANG 201. (Fall)

TRANSPORTATION SERVICES CLUSTER – AUTOMOTIVE

School of Applied Technology

TSTA 245 **Manual Drive Trains** (5)
Standard repair practices for drive train components to include: clutch, transmission, transaxle, drive axle, driveline, c-v and R & R procedures. Prerequisites: TSTC 100, 101, 140. (On demand)

TSTA 247 **Automatic Drive Train Service** (4)
Standard repair practices for automatic drive trains to include: diagnosis, testing, R & R, and servicing of transaxles/rear wheel drive transmissions. Prerequisites: TSTC 100, 101, 140. (On demand)

TSTA 265 **Engine Control Services** (2)
Repair and diagnosis of engine control systems with an emphasis on scan tool diagnosis and live hands on repair of systems. Prerequisites: TSTC 100, 101, 160. (On demand)

TSTA 267 **Body and Chassis Controls** (2)
Theory, repair, and diagnosis of body accessories including air bags, electronic monitors, power seats, windows and wipers. Prerequisites: TSTC 100, 101, 160. (On demand)

TSTA 275 **Alignment and Suspension Service** (3)
Repair of suspension systems to include: alignment (2 and 4 wheels), R & R component parts, and pre-alignment inspections. Prerequisites: TSTC 100, 101, 170. (On demand)

TSTA 287 **Engine Performance and Emissions** (2)
Diagnosis and repair of engine performance and emissions-related failures. Emphasis on strategy based diagnostics through the use of exhaust gas analysis. Prerequisites: TSTC 160, TSTC 180, TSTA 265. (Spring)

TRANSPORTATION SERVICES CLUSTER - CORE

School of Applied Technology

TSTC 100 **Introduction to Transportation Services** (1)
Introduction to procedures, tool usage, basic shop safety, and equipment. (On demand)

TSTC 101 **Vehicle Service and Inspection** (2)
Introduction to vehicle systems, maintenance, and inspection. Service of the vehicle stems with emphasis on inspection and observation. Prerequisite: TSTC 100. (On demand)

TSTC 110 **Engine Fundamentals** (1)
Introduction to Internal Combustion Engine theory, systems diagnosis, fundamentals and evaluation. Prerequisites: TSTC 100, 101. (On demand)

TSTC 130 **Electrical Fundamentals** (2)
Introduction to electrical theory, circuits, components, testing and use of test equipment. Prerequisites: TSTC 100, 101. (On demand)

TSTC 140 **Drive Train Fundamentals** (2)
Introduction to drive train components, diagnosis, light repair, and adjustment. Prerequisites: TSTC 100, 101. (On demand)

TSTC 160 **Electronic Control Systems** (2)
Study of electronic control systems applied to today's modern vehicles. Emphasis on sensors, actuators, and diagnostic techniques. Prerequisites: TSTC 100, 101. (On demand)

TSTC 170 **Chassis Fundamentals** (1)
Theory and operation of front and rear suspension systems, including steering front end geometry and component nomenclature. Prerequisites: TSTC 100, 101. (On demand)

TSTC 171 **Brake System Fundamentals** (1)
Theory, components, general repair practices and diagnosis of current brake systems. Prerequisites: TSTC 100, 101. (On demand)

TSTC 180 **Fuel System Fundamentals** (1)
Theory of gas and diesel injection, combustion process, delivery systems and general service techniques. Prerequisites: TSTC 100, 101. (On demand)

TSTC 190 **Climate Control Fundamentals** (1)
Theory of operation, nomenclature, identification, safety and environmental impact factors of air conditioning. Also covers heating and ventilation systems. Prerequisites: TSTC 100, 101. (On demand)

TRANSPORTATION SERVICES CLUSTER - DIESEL

School of Applied Technology

TSTD 177 **Air Systems Repair and Service** (2)
This course studies the air systems on the heavy duty truck, the brakes, transmission shift, seats, and rear axle shift will be covered, to include, service and repair of components and systems. Repair of foundation brakes will also be included. Corequisites: UTEC 150. (On demand)

TSTD 215 **Diesel Engine Reconditioning** (5)
Industry standard rebuild practices for diesel engines. R & R of engine, complete disassembly, assembly and running of engine is covered. Tune-up and fuel system adjustment are covered. Prerequisites: TSTC 100, 101, 110 and TSTG 115. (On demand)

TSTD 265 **Diesel Engine Controls** (1)
Repair and diagnosis of engine control systems with an emphasis on scan tool diagnosis and live hands-on repair of systems. Prerequisites: TSTC 100, 101, 160. (On demand)

TSTD 275 **Heavy Duty Suspension** (2)
Types of on-road suspensions, tires, repair of components, diagnosis, measurements, and adjustments to front and rear suspensions. Prerequisites: TSTC 100, 101, 170. (On demand)

TSTD 285 **Diesel Fuel Injection** (4)
Theory, diagnosis, and repair of diesel fuel injection systems. Emphasis on the adjustment and repair of injectors, filters, governors, blowers and turbos. Electronic systems, pump timing and pump replacement will also be covered. Prerequisites: TSTC 100, 101, 180. (On demand)

TRANSPORTATION SERVICES CLUSTER - GENERAL

School of Applied Technology

TSTG 115 **Gas Engine Reconditioning** (4)
Industry standard rebuild practices for gas engines. R & R of engine, complete disassembly, assembly and running of engine is covered. Prerequisites: TSTC 100, 101, 110. (On demand)

TSTG 135 **Electrical Component Repair** (2)
Electrical component repair to include: alternators, starters, wiring, and other electrical components. Prerequisites: TSTC 100, 101, 130. (On demand)

TSTG 140 **Job Shop** (4)
Designed to obtain a working knowledge of the industry job standards, through use of lab work projects performed in house, when internships or co-op cannot be found. Prerequisites: TSTC core courses and second year status.

TSTG 170 **Practical Application** (4)
Designed to gain a working knowledge of a particular field of study through co-op, internships, work experience or related lab work in industry. Prerequisites: TSTC core courses and second year status

TSTG 175 **Hydraulic Brake Service** (2)
Repair of brake systems to include: shoes, pads, cylinder reconditioning, machining rotors and drums, diagnosis, bleeding, R & R components, parking brakes and anti-lock systems. Prerequisites: TSTC 100, 101, 171. (On demand)

TSTG 195 **Climate Control Service** (2)
Repair, diagnosis, R & R of components, charging, recycling and testing of heating and air conditioning systems of over the road vehicles. Prerequisites: TSTC 100, 101, 130, 190. (On demand)

TSTG 240 **Advanced Job Shop** (4)
Application of workplace skills in a controlled shop environment, through the use of real-life lab work projects, performed in house, when internships or co-op opportunities are not available. Prerequisite: TSTG 140. (Fall/Spring on demand)

TSTG 270 **Advanced Practical Applications** (4)
Designed to increase student competency through the use of internships or co-op training and real-life shop experiences in their chosen area specialty. Prerequisite: TSTG 170. (Fall/Spring on demand)

TSTG 296 **Topics** (1-2)

UTEC

School of Applied Technology

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 trigonometric functions. (Hand held calculator required). (On demand)

UTEC 110 **Applied Physics** (3)
Instruction and application of physics in relation to technical education. One hour lecture and laboratory objectives. (Fall/Spring)

UTEC 120 **Industrial Safety Practices** (3)
Overview of current OSHA and EPA general industry regulations with an emphasis on hazardous materials, right-to-know, record keeping, and worker role in safety.

UTEC 150 **Fluid Power** (3)
Principles of hydraulics and pneumatic system including the construction, application, repair, maintenance and troubleshooting of components and systems. (Fall/Spring)

UTEC 220 **Industry Employment Practices** **(3)**
Employment skills encompassing leadership, goal setting, personal traits, conflict resolution, quality, time management, life-long learning, written and oral communication, and customer relations. (Spring)

UTEC 251 **Personal & Professional Leadership Development** **(2)**
Personal and professional leadership skills used to aid in the transition from worker to a supervisory position.(Fall/Spring)

WELDING

School of Applied Technology

WELD 110 **SMAW I** **(1)**
WELD 110L **SMAW I Laboratory** **(5)**
Safe use of equipment in shop practice; covers shielded metal arc welding mild steel in all positions. One hour lecture, plus laboratory objectives. (On demand)

WELD 115 **Welding and Structural Theory** **(4)**
Classroom instruction in the core 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. (On demand)

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. (On demand)

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** **(5)**
Pipe welding in all positions utilizing mild steel and other alloys as necessary. One hour lecture plus laboratory objectives. Prerequisite: WELD 110 or consent of instructor. (On demand)

WELD 133 **Fabrication Layout** **(3)**
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 140 **Job Shop** **(3)**
Development of written process sheets and prints, estimation of manufacturing time, completion of project to specifications including performance of final inspection. Utilization of all manufacturing processes required. Prerequisites: consent of instructor. Practical Applications may be substituted with consent of instructor. (On demand)

WELD 151 **Industrial Welding** **(1)**
WELD 151L **Industrial Welding Laboratory** **(2)**
Introductory level mild steel shielded metal arc welding and oxy/fuel processes. Includes safety, equipment use, SMAW, GMAW, oxyacetylene welding in the flat, horizontal and vertical positions. Some brazing, soldering, air arc, plasma arc, slice torch, build up and surfacing are included. Five hours per week. (On demand)

WELD 170 **Practical Applications** **(3)**
Opportunity to apply skills and knowledge gained in earlier courses. The student will work on manufacturing projects related to their career field of interest and advice of faculty. Job Shop may be substituted with approval of instructor. (On demand)

WELD 211 **GMAW** **(1)**
WELD 211L **GMAW Laboratory** **(4)**
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.

WELD 221 **FCAW** (1)
WELD 221L **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. (On demand)

WELD 230 **GTAW** (1)
WELD 230L **GTAW Laboratory** (2)
Safe use of Gas Tungsten Arc Welding (GTAW) equipment and associated shop practices, related to the GTAW of mild and stainless steels in flat and horizontal positions. One hour lecture and four hours laboratory per week. (On demand)

WELD 235 **Advanced GTAW** (3)
Safe use of Gas Tungsten Arc Welding (GTAW) equipment and associated shop practices, related to the GTAW of Alloy metals in all positions. Prerequisite: WELD 230. (Spring)

WELD 240 **Pipe Welding** (1)
WELD 240L **Pipe Welding Laboratory** (7)
Continuation of WELD 120 emphasizing pipe welding. One hour lecture, eleven hours laboratory per week. Prerequisite: WELD 120 or consent of instructor. (On demand)

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. (On demand)

WELD 295 **Independent Study** (1,2)

WELD 296 **Topics** (1,2)

WELD 299 **Internship** (1-14)

ADMINISTRATION

MESA STATE COLLEGE ADMINISTRATIVE OFFICERS

RICHARD E. BACA (1972), Dean of Students; B.S., University of Colorado; M.A., Ed.D., University of Northern Colorado.

JOHN FITZGIBBON (1998), Vice President for Financial and Administrative Services; B.A., University of Illinois at Springfield; M.S., Murray State University.

MICHAEL GALLAGHER (1996), President; B.B.A., Southwest Texas State University; M.B.A., Ph.D., Texas A&M University.

SAMUEL B. GINGERICH (1997), Vice President for Academic Affairs; B.A., Goshen College; M.S., Cornell University; Ph.D., Montana State University.

VALERIE HORTON (1997), Director of the Library; B.A., University of Utah; M.L.S, University of Hawaii.

DUANE HRNCIR (1999), Dean of the School of Natural Sciences and Mathematics and Professor of Environmental Restoration and Waste Management; B.S., University of Alabama; M.S., University of Massachusetts; Ph.D., Texas A&M University.

PAUL A. JONES (1994), Dean of Enrollment Management; B.S., M.S.S., Utah State University; Ph.D., University of Colorado- Fort Collins.

JANINE RIDER (1991), Dean, School of Humanities and Social Sciences; Professor of English; B.A., Miami University; M.A., University of Michigan; Ph.D., Indiana University of Pennsylvania.

JOHN ROGERS (2001), Dean of the School of Business and Professional Studies, Director of Graduate Programs, Professor of Marketing; B.S., Point Park College; M.B.A., The Pennsylvania State University; Ph.D., Virginia Polytechnic Institute and State University.

CLARENCE ROSS (1998), Director of Intercollegiate Athletics; Assistant Football Coach; B.S., M.A., University of Northern Colorado.

PAUL ROWAN (1997), Associate Vice President for Information Technology; B.S., Biola University; M.S., Ball State University.

KERRY YOUNGBLOOD (1992), Executive Director of the School of Applied Technology; B.S., Oklahoma State University; M.Ed., Colorado State University.

MESA STATE COLLEGE ADMINISTRATIVE PERSONNEL

RICK ADELMAN (2001), Acting Director of Alumni Relations; B.B.A., Mesa State College.

NANCY ALEX (2000), Faculty and Director, Eagle/Vail PDS Program; B.S., University of Wyoming, Laramie; M.A., Adams State College.

ROBERT E. ANTHONY (1984), Director of Intramural Sports; B.S., M.S., Southern Illinois University.

PAUL ARNHOLD (1997), Facilities Manager Auxiliary Services.

LAWRENCE BAINES (2002), Associate Vice President for Academic Affairs and Director of the Center for the Preparation of Teachers, Professor of Teacher Education; B.A., University of Texas at Austin, M.S., University of North Texas, Ph.D., University of Texas at Austin.

ANGIE BERTRAND (2000), Acting Assistant Project Director, Americorps.

BARBARA BORST (1981), Librarian, Head of Research Services and Interlibrary Loan; B.A., Sterling College; M.L.S., Library Science, Indiana University.

BETTY S. BRANDT (1996), Professional Staff Assistant to the Vice President for Academic Affairs; A.A., Mesa State College.

DIANE BRITTINGHAM (1998), Assistant Director of Housing and Residence Life; B.S., Old Dominion University; M.S., University of Central Arkansas.

JAMES BROCK (1998), Professional Engineer, Architect, Campus Planner; B.S., M.S., University of Illinois.

ELIZABETH BRODAK (1988), Head, Library Reference; B.A., Carthage College; M.L.S., University of Hawaii.

JEREMY BROWN (1998), Associate Director of Telecommunications; B.S., Mesa State College.

SISSILY BROWN (2001), Acting Data Information Specialist; B.B.A., Mesa State College.

JAMES BUCHAN (1996), Head Coach Women's Soccer; B.S., St. Francis Xavier University; M.A., Pacific Lutheran University.

TYRE BUSH (2002), Director of Admission; B.A., M.S. Ed., Elmira College.

LARRY CACKLER (1993), Controller; B.S., Mesa State College.

ANNETTE CALLAWAY (1999), Assistant Registrar - Registration; B.S., Colorado State University - Fort Collins; M.Ed., Colorado State University.

RICHARD CARDENAS (1998), Acting Coordinator of Employer Relations; B.A., Metro State College; M.A., Adams State College.

BEVERLY CRADDOCK (2001), Director of Marketing and Publications; B.A., Colorado State University.

RUSTY L. CRICK (1979), Head Volleyball Coach; B.S., M.A., Western State College.

MISTY CURTIN-SELLDEN (1995), Associate Director of Admission; B.A., Mesa State College.

MARIUS DEGABRIELE (1990), Assistant Director of Admission and Records; B.S., Northern Michigan University; M.A., Lesley College.

KATHRYN DERRY (1997), Transfer and Articulation Coordinator; A.A., Arapahoe Community College; B.A., M.A., University of Colorado at Denver.

LINDA DODSON (2000), Professional Staff Assistant to the Vice President for Finance and Administrative Services; A.A.S., Mesa State College.

LINDA DU (1995), Associate Director of Banner Systems; B.A., Beijing College of Economics; M.B.A., State University of New York - Buffalo.

JEANNE DURR (2000), Director of Human Resources; B.A. Portland State University; J.D., Northwestern School of Law of Lewis and Clark College.

JILL ECKARDT (1996), Director of Housing and College Center; B.S.E., University of Wisconsin; M.S., Western Illinois University.

PATRICIA ELLIOTT (1995), Sports Information Director; B.S., University of Nevada.

CHAHNUH FONTES (2001), Admissions Counselor – Denver; B.A., Mesa State College.

TERENE FOUTZ (2000), Acting Assistant Volleyball Coach; A.A.S., B.B.A., Mesa State College.

CARLA GOBLE (2000), Assistant Coordinator of Testing.

PATRICK HAMPTON (2002), Registrar; B.S., Miami University, Oxford, Ohio; M.B.A., Ohio State University, Columbus.

RANDY HAMPTON (2001), Director of Media Relations; B.A., Mesa State College.

CHRIS HANKS (1993), Head Baseball Coach; B.S., Mesa State College.

THOMAS HARRIS (1991), Assistant Reference Librarian; B.S., M.L.I.S., University of Wisconsin.

JIM HEAPS (1991), Head Men's Basketball Coach; B.S., Mesa State College; M.S., Southern Illinois University.

KATHRYN HERZOG (1998), Director of Institutional Advancement; B.S., Ohio University.

DEBORAH HOEFER (1995), Assistant Director of the College Center; B.S., B.A., University of Denver.

ERIN HOLMES (2000), Director of Institutional Research; B.A., Wilmington College of Ohio; M.B.A., University of South Dakota.

JOSHUA HOUDEK (1999), Outdoor Program Coordinator; B.S., University of Iowa; M.A., University of Minnesota.

TINA HULIHEE-PELTIER (2000), Financial Aid Counselor; B.B.A., Mesa State College.

KATHY HURSHMAN (1999), Accounts Payable/Payroll Manager; A.A.S., Mesa State College.

VALERY ISHAM (2001), Music Publicity Director; B.B.A., Mesa State College.

DANIEL JACOBSON (1999), Assistant Controller; B.S., Arizona State University.

SYLVIA M. JONES (1994), Director of Financial Aid; B.S., Utah State University; M.B.A., Western State College.

FRANK JOY (1999), Assistant Director of Facilities Services; B.S., Rochester Institute of Technology.

ROBERT KALLINA (1995), Director, Student Recreation Center; B.S., University of Texas; M.A., Washington State University.

MARK R. KASSELHUT (1994), Head of Media Services; B.S., M.A., Central Missouri State University.

BENJAMIN R. KEEFER (1991), Director of Mesa State College Montrose Campus; A.A.S., Northeastern Junior College; B.S., M.Ed., Ph.D., Colorado State University.

JANICE KEESLER (1999), Admission Counselor; A.A.S., B.B.A., Mesa State College.

DANIEL KIRBY (1999), Program Coordinator, Culinary Arts.

STEVE KIRKHAM (1992), 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.

JOYCE LAMBERT (1996), Professional Staff Assistant to the President.

CINDY LUEB (2000), Director of Sponsored Programs; B.B.A., M.B.A., Stephen F. Austin State University.

CURT MARTIN (1995), Associate Director, Financial Aid; B.A., University of Nebraska.

RYAN MILLER (2001), Associate Athletic Director, Acting Assistant Baseball Coach/NCAA Compliance Coordinator; A.A., Colby Community College; B.A., Mesa State College; M.A., Colorado Christian University

KATE MONTEITH (1995), Publicity/Box Office Manager.

JAMI MOORE (1999), Admission Counselor; B.A., Mesa State College.

SUSAN M. MOORE (1982), Bookstore Manager; B.A., Chestnut Hill College.

KRISTIN MORT (1995), Head Softball Coach; B.A., Mesa State College.

GERALD N. NOLAN (1984), Associate Director, Academic Computer Services; B.A., Northern Illinois University; M.A., University of Oregon.

LEAH OKE (2001), General Reference Librarian; B.A. East Carolina University; M.L.S., University of South Carolina.

ERIC OLSEN (2001), Coordinator of Placement Technology and Marketing; B.A., Mesa State College.

DALE OWENS (1999), Acting Assistant Football Coach; B.A., Mesa State College; M.A., University of Northern Colorado.

MARK PAQUETTE (1999), Athletic Administrative Associate; B.S., Mesa State College.

JOE RAMUNNO (1997), Head Football Coach; B.A., University of Wyoming.

KATHALEEN RECKER (1999), Financial Aid/Admission Counselor; B.S., Canisius College; M.P.A., University of Colorado.

DARIN ROBIDOUX (2001), Acting Assistant Football Coach; B.B.A., Mesa State College; M.A., University of Northern Colorado.

ANDREW J. RODRIGUEZ (1989), Director of Purchasing; B.S., University of Northern Colorado.

PAUL ROLLAND (1998), Assistant Reference Librarian; B.A., M. Ed., University of Florida; M.L.S., Florida State University.

ROYIA RUFFIN (1999), Coordinator of Academic Advising; A.A., University of Maryland; B.A., Mesa State College; M.A., Adams State College.

GAIL RUST (2000), Coordinator of Programming, Montrose; B.A., Adams State College; M.Ed., Colorado State University.

ROBERT RYAN (1992), Athletic Trainer; B.A., Colorado University; M.A., University of Northern Colorado.

ROSS SCHUPBACH (1999), Admission Counselor; B.A., Doane College.

PATRICK SCHUTZ (1992), Director of Academic Services; B.S., Eastern Michigan University; M.S., University of Utah.

ANDREW SHANTZ (2000), Acting Assistant Basketball Coach; B.A., Mesa State College.

ELEANOR SMITH (1995), Educational Access Services Assistant; B.A., San Diego State University; M.A., California State University - Fullerton.

DEBORAH SNIDER (2000), Coordinator of Placement/Admission; B.A., Western Michigan University; M.A., University of Colorado at Boulder.

RONALD STANDING (1997), Technical Director, Theatre; B.A., Mesa State College.

TERRI SULLIVAN (1996), Student Financial Counselor; B.B.A., Mesa State College.

WHITNEY SUTTON (1997), Assistant to the Vice President for Financial and Administrative Services; B.S., Mesa State College.

HOLLY TEAL (1997), Assistant Registrar - Graduation; B.S., Mesa State College.

RICHARD THOMAS (1996), Associate Director of Housing; B.S., M.S., Colorado State University.

TERRI THYE (1993), Coordinator of Testing Services & Assessment; A.A., Mesa State College.

KATHLEEN R. TOWER (1972), Special Collections/Government Documents Librarian; Associate Professor of Library Science; B.M.E., M.A., University of Denver; Ph.D., Texas Woman's University.

MARY VAIL (2001), Graduate Programs Coordinator; B.A., Metropolitan State College.

PATRICIA VERSTRAETE (1999), Director of Americorps; B.A., University of Pittsburgh; M.A., Western State College; Ed.D., Nova University.

ERIN WAGNER (2001), Acting Admissions Counselor; B.B.A., Mesa State College.

TERESA WILKERSON (1990), Associate Director of Student Information Services; B.S., Mesa State College.

JAN WILLIAMS (1980), Director of Budget and College Services; B.S., Colorado State University.

DEBRA WINSTON (2001), Coordinator of Mesa State College Professional Development School at Colorado Mountain College and Lecturer of Teacher Education; B.A., Colorado Women's College; M.A., Villanova University; Ph.D., Temple University.

LYNN WOELLHOF (1998), Director of Instruction and Facilities, UTEC; B.A., University of Northern Colorado; M.E., University of Phoenix.

KENNILYN WRIGHT (1998), Admission Counselor, UTEC; A.A., Eastern Arizona College; B.A., Mesa State College.

SANDRA WYMORE (1986), Coordinator, Educational Access Services; B.A., University of Denver.

* Deans and Director of Academic Schools

School of Applied Technology, Kerry Youngblood, Director

School of Business and Professional Studies, John Rogers, Dean

School of Humanities and Social Sciences, Janine Rider, Dean

School of Natural Sciences and Mathematics, Duane Brneir, Dean

+ Department Chairs
Accounting and Information Technology, David Rogers
Biological Sciences, Steven Werman
Business Administration, Morgan Bridge
Computer Science, Mathematics, and Statistics, Cathy Barkley
Fine and Performing Arts, Suzie Garner, David Cox, Calvin Hofer
Human Performance and Wellness, Jill Cordova
Languages, Literature and Communications, Esther Broughton
Nursing and Radiologic Sciences, Sandy Forrest
Physical and Environmental Sciences, Prasanta Misra
Social and Behavioral Sciences, John Redifer
* See individual listings under Administrative Officers.
+ See individual listings under Faculty.

MESA STATE COLLEGE FACULTY

(Figures in parentheses indicate year of tenure track appointment to Mesa State College professional staff. Prior temporary or part-time service is not indicated.)

THOMAS ACKER (1999), Associate Professor of Spanish; B.S., Kutztown University; M.A., Ph.D., Temple University.

JANE ARLEDGE (1997), Associate Professor of Mathematics; B.S., University of Texas; M.A., Ph.D., University of Colorado.

SHERRI AROSTEGUY (2000), Assistant Professor of Education; B.S., Mesa State College; M.Ed., Colorado State University; Ph.D., Utah State University - Logan.

ANDRES ASLAN (1999), Associate Professor of Geology; B.S., Brown University; M.S., Ph.D., University of Colorado.

MONTE ATKINSON (1985), 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), Professor of Biology, B.A., M.S., California State University - Northridge; Ph.D., Utah State University.

JULIE BARAK (1997), Associate Professor of English; B.A., M.A., Creighton University; Ph.D., University of Nebraska.

CATHY BARKLEY (1995), Professor of Mathematics; Chairperson, Department of Computer Science, Mathematics, and Statistics; B.S., Southern Nazarene University; M.S., Purdue University; Ph.D., Denver University.

MICHAEL BARON (1993), Associate Professor of Music; B.A., Beloit College; M.A., University of Wisconsin; D.M.A., Ohio State University.

BRUCE A. BAUERLE (1972), Professor of Biology; B.A., University of Kansas; M.S., University of Missouri; D.A., University of Northern Colorado.

SUSAN BECKER (1996), Assistant Professor of Psychology; B.A. Reed College; M.A., University of Colorado Colorado Springs; Ph.D., University of Arizona.

RICHARD L. BERKEY (1967), Associate Professor of English; B.A., Fort Lewis College, M.A., Eastern New Mexico University.

CATHERINE BONAN-HAMADA (1996), Associate Professor of Mathematics; B.S., M.S., Colorado State University; Ph.D., University of Colorado.

EDWARD BONAN-HAMADA (1997), Assistant Professor of Mathematics; B.A., University of Rochester; M.A., University of Hawaii; Ph.D., University of Colorado.

CLARE BOULANGER (1993), Associate Professor of Anthropology; State University of New York - Plattsburgh; M.A., Ph.D., University of Minnesota.

MORGAN K. BRIDGE (1995), Associate Professor of Business Administration; Chairperson, Department of Business Administration; B.B.A., M.B.A. Chadron State; Ph.D. University of Wyoming.

JEFF BRIGHAM (1991), Professor of Teacher Licensure; B.A., M.A., University of Wisconsin; Ed.D., University of Wyoming.

ESTHER BROUGHTON (1991), Professor of English; Chairperson, Department of Languages, Literature, and Communication; B.A., Utah State University; M.S., University of Texas., Ph.D., Indiana University of Pennsylvania.

MORRIS BROWN (2001), Associate Professor of Mass Communications; B.A., Andrews University; M.S., D.P.A., Golden Gate University.

JULIE BRUCH (2002), Associate Professor of English; B.A., Western Michigan University; M.A., Ph.D., University of Kansas, Lawrence.

BRAD BUCHHOLZ (1987), UTEC, Instructor of Applied Technology-Auto Collision; A.A.S., Mesa State College.

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.

TIM CASEY (1998), Associate Professor of Political Science; B.S., Northern Arizona University; M.A., University of San Francisco; Ph.D., Arizona State University.

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; B.S., University of Denver; M.N.S., Arizona State University; D.A., University of Northern Colorado.

SUZANNE CLAFFEY (1986), Professor of Art; B.A., Metro State College; M.F.A., University of Denver.

REX D. COLE (1995), Professor of Geology; B.S., Colorado State University; Ph.D., University of Utah.

JILL CORDOVA (1992), Professor of Human Performance and Wellness; Chairperson, Department of Human Performance and Wellness; B.A., M.A., Humboldt State University; Ph.D., University of New Mexico.

RICHARD COWDEN (2001), Assistant Professor of Theatre; B.A., Mesa State College; M.F.A., Ohio University of Theatre.

DAVID M. COX (1981), Professor of Theatre; B.A., Mesa State College; M.F.A., University of Utah.

ADELE J. CUMMINGS (1996), Assistant Professor of Sociology; B.A., M.S., Florida State University; Ph.D., Duke University

WILLIAM H. DAVENPORT (1988), Professor of Mathematics; B.S., University of Tennessee; M.S., Texas A & M University; Ph.D., University of Alabama.

FORBES DAVIDSON (1995), Associate Professor of Biology; B.S., Oregon State University; Ph.D., University of Texas.

KENNETH S. DAVIS (1995), Associate Professor of Mathematics; B.S., Reed College; M.S., Portland State University; Ph.D., Washington State University.

JACK DELMORE (1992), Associate Professor of Music, B.M., University of Lowell; M.M., New England Conservatory of Music; D.M.A., University of Arizona.

MATTS G. DJOS (1976), Professor of English; B.A., University of Washington; M.A., University of Idaho; Ph.D., Texas A & M University.

CRAIG DODSON, (1995), Professor of Chemistry; B.S. University of Idaho; Ph.D. Colorado State University

ARUN EKTARE (1986), Professor of Computer Science; Ph.D., University of Roorkee (India).

CARLOS ELIAS (2000), Assistant Professor of Music; B.M., Biola University; M.M., University of Cincinnati; Artist Diploma, Duquesne University.

BYRON EVERS (1989), Associate Professor of Mass Communications; B.S., M.S., Murray State University.

KAREN E. FORD (1984), Professor of Psychology; B.A., Mississippi College; M.A., Northeast Louisiana; Ph.D., University of Mississippi.

SANDY FORREST, R.N. (1980), Professor of Nursing; Chairperson, Department of Nursing; B.S.N, Florida International University; M.S.N., University of Miami; Ph.D., University of Texas.

THERESA FRIEDMAN (2002), Associate Professor of Mathematics; B.S., Saint Joseph's University, Philadelphia; M.S., Ph.D., Colorado State University, Fort Collins.

LISA FRIEL (1998), Assistant Professor of Teacher Licensure; B.A., University of California – Santa Barbara; M.Ed., Ed.D., Northern Arizona University.

KEITH FRITZ (1997), Associate Professor of Human Performance and Wellness; B.S., Oregon State University; M.S., Ph.D., University of New Mexico.

TERESA S. GARNER (1995), Associate Professor of Graphic Art; B.F.A., M.A., Stephen F. Austin State University; M.F.A., West Texas A & M.

GORDON GILBERT (1980), Professor of Physics; B.S., M.S., Ph.D., Massachusetts Institute of Technology.

MICHAEL C. GIZZI (1995), Associate Professor of Political Science; B.A., St. Michael's College; M.A., Ph.D., The University at Albany, State University of New York.

SUE GOEBEL (1998), Assistant Professor of Nursing; B.S.N., M.S., University of Northern Dakota.

JUDY GOODHART, R.N. (1990), Professor of Nursing; B.S. Loretto Heights; M.S.N., University of Colorado.

ANDREW GORDON (1998), Assistant Professor of Spanish; B.A., University of Colorado-Boulder, M.A., New York University; Ph.D., Columbia University.

CHAD LEE C. GRABOW (1996), Associate Professor of Computer Information Systems; B.S., Mankato State University; M.S., The American University; M.A., Naval War College; Ph.D., Iowa State University.

THOMAS D. GRAVES (1966), Professor of Counseling and Psychology; B.A., M.A., Adams State College; Ed.D., University of Northern Colorado.

GEOFFREY GURKA (2001), Associate Professor of Accounting; B.A., University of Connecticut; M.A., Florida State University; Ph.D., Michigan State University.

PHILIP GUSTAFSON (1998), Assistant Professor of Mathematics; B.S., State University of New York – Oneonta; M.S., Ph.D., Washington State University.

KRISTEN HAGUE (2001), Assistant Professor of English; B.A., Providence College; M.A., Ph.D., University of New Mexico.

CHARLES HARDY (1979), Professor of Art; B.A., Colorado State University; M.F.A., University of Arizona

KURTIS HAAS (1999), Assistant Professor of English; B.A., M.A., Truman State University; Ph.D., University of Nebraska.

TIMOTHY S. HATTEN (1995), Associate Professor of Business Administration; B.A., Western State College; M.S., Central Missouri State; Ph.D., University of Missouri.

MYRA D. HEINRICH (1983), Professor of Psychology; B.S., M.A., Ph.D., University of North Dakota.

CALVIN HOFER (1998), Assistant Professor of Music; B.A., South Dakota State University; M.M.E., University of Wisconsin; D.M.A., University of Northern Texas.

BETHANY R. HOFFMAN (1994), Associate Professor of Nursing; B.S.N., University of Cincinnati; M.S., University of Colorado.

GARY HOOVER (2001), Associate Professor of Finance; B.S., Ohio State University; M.B.A., Miami University – Oxford, Ohio; Ph.D., Kent State University.

PETER IVANOV (1995), Associate Professor of Theatre; A.A., Manatee Community College; B.A., Western Illinois University; M.F.A, Florida State University.

PATRICIA JOFFER (1996), Assistant Professor of Sociology; B.S., M.A., University of South Dakota, Ph.D., South Dakota State University.

ROBERT L. JOHNSON (1962), Professor of English; B.A., M.A., Western State College; Ph.D., University of Northern Colorado.

VERNER JOHNSON (1989), Professor of Geology; B.A., M.S., Southern Illinois University; Ph.D., University of Tennessee.

J. PHILIP KAVANAGH (1994), Associate Professor of Mathematics; B.Sc., M. Sc., University College Dublin, National University of Ireland; Ph.D., University of Wisconsin.

WALTER A. KELLEY (1977), Professor of Biology; B.A., M.S., California State University-Northridge; Ph.D., Colorado State University.

JOHN KNAPPENBERGER (1992), Professor of Business Administration; B.A., University of Central Florida; M.B.A., University of Colorado-Denver; Ph.D. University of Colorado-Boulder.

KHOON T. KOH (1999), Assistant Professor of Business Administration and Travel Industry Management; B.A., University of Alberta; M.Ed., Temple University; Ph.D., Texas A&M University.

BARRY LAGA (1997), Associate Professor of English; B.A., M.A., Brigham Young University; Ph.D., Purdue University.

GUY LEADBETTER (1993), Associate Professor of Physical Education; B.A., Bowdoin College; M.S., University of Montana; Ph.D. University of New Mexico.

ALLEN LEARST (1997), Associate Professor of English; B.A., M.A., North Michigan University; Ph.D., Oklahoma State University.

THOMAS LIESZ (1999), Associate Professor of Finance; B.S., Southern Illinois University; M.B.A., Northern Arizona University; Ph.D., University of Idaho.

RICHARD LIVACCARI (1997), Assistant Professor of Geology; B.S., University of New Mexico; M.S., State University of New York – Albany; Ph.D., University of New Mexico.

GARY LOOFT (1985), UTEC, Instructor of Applied Technology-Transportation; Certificate, Commercial Trades Institute.

TERRY LOVELACE (2001), Associate Professor of Teacher Education; B.S., Louisiana State University- ; M.Ed., Auburn University; Ph.D., University of Georgia.

WARREN MACEVOY (2001), Assistant Professor of Computer Science; B.S., Mesa State College; M.S., Ph.D., University of Arizona.

LAWRENCE J. MADSEN (1988), Professor of Chemistry; B.S., Oregon State University; M.S., Ph.D., University of Washington.

FRANK MARKHAM (2001), Associate Professor of Business Administration; B.S.M., Embry Riddle Aeronautical University; M.B.A., Troy State University; D.B.A., Louisiana Technical University.

ROBERT W. MAYER (1987), Associate Professor of Travel, Recreation and Hospitality; B.A., M.S., University of Northern Colorado.

JEANNE MAYFIELD (1995), Assistant Professor of Nursing; B.S.N., Mesa College; M.S., University of Colorado.

JACKIE McANINCH (1986), UTEC, Lecturer of Applied Technology-CAD; A.A.S., Mesa State College; B.S., Colorado State University.

GARY L. McCALLISTER (1973), Professor of Biology; B.S., M.S., Brigham Young University; D.A., University of Northern Colorado.

DENISE McGINNIS (1993), Professor of Business Computer Information Systems; B.Ed., M.B.A., Ph.D., University of Toledo.

DENISE McKENNEY (1996), Associate Professor of Biology; B.S., New Mexico State University; Ph.D., North Carolina State University-Raleigh.

BETSY McLOUGHLIN (1995), Associate Professor of Foreign Language; B.A., University of Kansas; M.A., University of Wisconsin; M.A.T., University of New Mexico; Ph.D., University of New Mexico.

CARRIE McVEAN WARING (1996), Assistant Professor of Biology; B.S., D.V.M., Colorado State University.

BARRY P. MICHRINA (1990), Professor of Anthropology; B.S., St. Francis College; M.S., Colorado State University; Ph.D., Pennsylvania State University.

JESSICA MILLER (1996), Associate Professor of Psychology; B.A., M.S., Ph.D., University of Wyoming.

PRASANTA K. MISRA (1988), Professor of Physics; Chairperson, Department of Physical and Environmental Sciences; B.S., M.S., Utkal University, India; Ph.D., Tufts University.

JERRY W. MOORMAN (1990), Professor of Business Administration; M.Ed., Delta State University; B.S., Ed.D., Mississippi State University.

LAVERNE MOSHER (1990), Professor of Art; B.A., University of Northern Colorado; M.F.A., Arizona State University.

STEVEN ROSS MURRAY (1998), Associate Professor of Human Performance and Wellness; B.S., University of Northern Alabama; M.S., D.A., Middle Tennessee State University.

HONORA MAUREEN NEAL (1995), Associate Professor of English; B.A., University of Denver; M.A., Western State College; Ph.D., Texas A & M University.

KAREN NELSON (2001), Assistant Professor of Nursing; B.A., Metropolitan State College; B.S.N., Mesa State College; M.A., University of Phoenix.

TIMOTHY NOVOTNY (1989), 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.

DOUGLAS A. O'ROARK (1994), Associate Professor of History; B.A., M.A., Ph.D., The Ohio State University.

ERIK PACKARD (1996), Assistant Professor of Mathematics; B.S., M.S., Ph.D., Texas Tech University.

APARNA PALMER (1999), Assistant Professor of Biology; B.A., B.S., Colorado State University; Ph.D., Washington State University.

LORI PAYNE (1996), Associate Professor of Mathematics and Computer Science; B.A., Mesa College; M.S., New Mexico Institute of Mining & Technology, Ph.D., University of Northern Colorado.

RANDY PHILLIS (1993), Professor of English; B.A., M.F.A., Wichita State University; Ph.D., Oklahoma State University

CAROLYN QUINN-HENSLEY (2000), Associate Professor of Graphic Arts; B.F.A., M.F.A., University of Hawaii.

GARY M. RADER (1995), Professor of Computer Sciences; B.A., M.A., Ph.D., University of Pennsylvania; M.B.A., University of Phoenix.

PAUL L. REDDIN (1970), Professor of History; B.A., Adams State College; M.A., Ph.D., University of Missouri.

JOHN D. REDIFER, (1994), Associate Professor of Political Science; Chairperson, Department of Social and Behavioral Sciences; B.A., University of Maryland; M.A., Ph.D., Colorado State University.

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), Professor of Nursing; B.S., M.S.N., University of Colorado

GIGI RICHARD (2002), Assistant Professor of Geology; B.S., Massachusetts Institute of Technology, Cambridge; M.S., Ph.D., Colorado State University.

JOSEPH L. RICHARDS, (1995), Associate Professor of Chemistry; B.A., University of San Diego; Ph.D., University of North Carolina.

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), Associate Professor of Nursing; B.S., University of Iowa; M.S.N., University of Colorado.

ANN J. SANDERS (1971), Associate Professor of Dance; B.A., Eastern Washington State College; M.A., University of Colorado.

BETTE A. SCHANS (1994), Associate Professor of Radiologic Technology; Director of Radiologic Technology Program; B.S., Metropolitan State College; M.S., University of Colorado.

KIMBERLY SCHNEIDER (1998), Assistant Professor of Mathematics; B.S., University of Southern Colorado; M.S., University of Colorado-Colorado Springs; Ph.D., Colorado State University.

WILLIAM SCHOUNTZ (1999), Assistant Professor of Biology; B.S., Newman University; M.S., Emporia State University; Ph.D., Kansas State University.

ERIC SCHRUERS (1997), Assistant Professor of Art History; B.A., Edinboro State University of Pennsylvania; M.A., Ph.D., Pennsylvania State University.

STEVEN C. SCHULTE (1989), 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.

TOD SHOCKEY (2001), Assistant Professor of Math Education; B.S., Ohio State University; M.S., Montana State University; Ph.D., University of Virginia.

LUIS SILVA-VILLAR (2000), Assistant Professor of Spanish; M.A., Real Conservatorio Superior De Musica de Madrid; M.A., Ph.D., University of California - Los Angeles.

ROBERT SITZ (2000), Associate Professor of Marketing; B.A., M.B.A., Mankato State University; B.A., Ph.D., Arizona State University.

GAYLA SLAUSON (1993), Associate Professor of Business Computer Information Systems; B.A., Mesa State College; M.B.A., University of Southern Colorado.

WAYNE SMITH (1999), Lecturer of Culinary Arts

ANNE SPALDING (2001), Assistant Professor of Computer Science; B.S., M.S., Ph.D., University of Colorado-Denver

GENE H. STARBUCK (1974), Professor of Sociology; B.A., M.A., Ph.D., University of Colorado.

SARAH SWEDBERG (1999), Assistant Professor of History; B.A., State University of New York - Plattsburgh; M.A., Ph.D., Northeastern University, Boston.

CINDY THOMAS (1999), Assistant Professor of Nursing; B.S.N., University of Utah; M.S., University of Colorado.

HARRY A. TIEMANN, JR. (1962), Professor of Psychology; B.A., M.A., University of Colorado; Ph.D., Colorado State University.

WILLIAM TIERNAN (1999), Associate Professor of Physics; B.A., Colby College; Ph.D., University of Massachusetts.

KARL F. TOPPER (1991), Professor of Environmental Restoration; B.S., University of Florida; M.S., Colorado State University; Ph.D., Utah State University.

REGIS TUCCI (1999), Assistant Professor of Mass Communications; B.A., M.A., Marshall University.

RICHARD VAIL (1997), Professor of Business Administration; B.S., University of California-Davis; M.S., University of Colorado; Ph.D., Oxford.

RUTH VOORHIES (1999), Assistant Professor of Chemistry; B.A., Carlton College; Ph.D., State University of New York – Stony Brook

HEATHER WAGGONER (1998), Assistant Professor of Theatre; A.A., B.A., Indiana State University; M.F.A., Illinois State University.

MICHAEL WALDROP (1999), Assistant Professor of Music, Director of Jazz; B.M., University of North Texas; M.A., University of Memphis; D.M.A., University of North Texas.

RUSSELL WALKER (1993), Associate Professor of Environmental Restoration; A.B., Oberlin College; Ph.D., Iowa State University.

THOMAS WALLA (2001), Assistant Professor of Biology; B.A., University of California – San Diego; Ph.D., University of Oregon – Eugene.

ALAN WALLACE (1999), Associate Professor of International Business; B.S., Cornell University; M.B.A., University of Alaska; Ph.D., University of South Carolina.

PATRICE WARD (1998), Assistant Professor of Radiologic Sciences; B.S., Colorado Christian University.

STEVEN WERMAN (1990), Professor of Biology; Chairperson, Department of Biological Sciences; B.S., M.S., California State University – Long Beach; Ph.D., University of Miami.

SUSAN WHITE (1992), Assistant Professor of Nursing, R.N.; B.S.N., Mesa State College; M.S., University of Arizona.

RON WILCOX (1990), UTEC, Assistant Professor of Applied Technology Electronics; A.A.S., Mesa Junior College; B.S., Arizona State University; M.S., Houston Baptist University.

BRENDA WILHELM (2000), Assistant Professor of Sociology; B.A., University of Minnesota; M.A., Ph.D., University of Arizona.

MARILYN WOUNDED HEAD (1993), Assistant Professor of Art; B.F.A., Minneapolis College of Art/Design; M.F.A., University of South Dakota.

W. WILLIAM WRIGHT (1998), Assistant Professor of English; B.A., Linfield College; M.A., University of New Hampshire; Ph.D., University of Arizona.

ZHONG CHAO WU (1989), Professor of Mathematics; B.S., China University of Science and Technology; Ph.D., University of Cambridge.

SUSAN A. YEAGER (1988), Professor of Physical Education; B.A., Luther College; M.S., South Dakota State; P.E.D., Indiana University.

MARY E. ZIMMERER (1988), 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.)
DANIEL J. AROSTEGUY, B.S., M.S., Ph.D., Professor of Economics (1997).
PIERRE G. BETTELLI, B.S., M.S., Associate Professor of Business Computer Information Systems (1997).
VIRGINIA BEEMER, B.S., M.A., Professor of Early Childhood Education (1998).
EDWARD A. BOEHLER, C.P.A., B.S., M.B.A., Professor of Accounting (1994).
ORVILLE L. BOGE, B.A., M.A., Professor of Chemistry; University of Northern Colorado (1993).
WILLIAM T. BRANTON, Assistant Professor of Applied Technology (1995).
CLIFFORD C. BRUTTON, B.A., M.A., Professor of Mathematics (1996).
TENNIE ANN CAPPS, B.S., M.Bus.Ed., Associate Professor of Business (1999)
JO E. DORRIS, B.A., M.S., Ed.D., Professor of Psychology (1993).
DAVID R. DUFF, B.A., M.Ed., Associate Professor of Applied Technology (Commercial Art) (1994).
CHARLES FETTERS, B.S., M.A., Associate Professor of Applied Technology (2001).
DELL R. FOUTZ, B.S., M.S., Ph.D., Professor of Geology (1993).
D'ANN FUQUAY, B.A., M.A., M.S., D.A., Professor of Computer Science (2001).
JOSE L. GALLEGOS, B.A., M.A., Ph.D., Professor of English (1999).
MICHAEL GERLACH, B.S., M.A., Ph.D., Professor of Theatre (2002).
A. RAY GREB, B.A., M.A., Professor of Machining (2000).
FORREST HOLGATE, B.A., Assistant Professor of Applied Technology (2001).
EDWARD C. HURLBUT, B.A., M.S., Ph.D., Professor of Biology (1999).
JAMES B. JOHNSON, B.A., M.S., Ph.D., Professor of Geology (1999)
DANIEL MacKENDRICK, B.A., M.A., Professor of English (1998).
JOHN T. MARSHALL, B.S., M.S., Ph.D., Professor of Physics (1996).
LOUIS G. MORTON, B.S., M.A., Ed.S.; Professor of Political Science (1993).
JACK E. ROADIFER, B.S., M.S., Ph.D., Professor of Geology (1994).
MARGARET G. ROBB, B.A., M.A., Associate Professor of Speech (2000).
PAUL G. SCHNEIDER, B.A., M.A., Associate Professor of Music (2000).
ROBERT SOWADA, B.A., M.A., Associate Professor of Foreign Language (2002).
MARLYN K. SPELMAN, B.A., Ph.D., Professor of English (1996).
TED SWANSON, B.S., M.A., Ph.D., Professor of Recreation (1998).
BARRY THARAUD, B.A., M.A., Ph.D., Professor of English (2002).
KAREN J. TUINSTRA, B.A., M.S., Ph.D., Professor of Teacher Education (2000).
PAUL WELLS, A.S., B.A., Assistant Professor of Applied Technology – Auto Collision (1998).
EILEEN M. WILLIAMS, R.N., B.S., M.S., Professor of Nursing (1996).
JOHN ZEIGEL, B.A., M.A., Ph.D., Professor of English (1998).

* 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., Swarthmore College; M.A., Ph.D., University of Chicago.

STEPHEN BENNET (1995), Wayne N. Aspinall Professor of History; B.S., M.S., Illinois State University, Normal; Ph.D., University of Illinois, Urbana-Champaign.

ALAN A. BLOCK (1996), Wayne N. Aspinall Professor of History, Political Science, and Public Affairs; A.B., Ph.D., University of California-Los Angeles; M.A., California State University.

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.

GEORGE BROWDER (2001), Wayne N. Aspinall Professor of History; B.S., Memphis State University; M.A., Ph.D., University of Wisconsin at Madison.

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 Stuart University, Australia.

EMMANUEL FELDMAN (1987 and 1991), Cosmicos Professor of Religious Studies; B.S., M.A., Johns Hopkins University; Ph.D., Emory University.

RICHARD FENSTON (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.

ANDREW GULLIFORD (1997), Wayne N. Aspinall Professor of History; B.A., M.A.T., The Colorado College; Ph.D., Bowling Green State University.

DENIS HINH (1985), Cosmicos Professor of Religious Studies; A.B., St. Benedict's Seminary; S.T.L., S.E.O.L., Oriental Institute, Rome.

GORDON A. MARTIN, JR. (1998), Wayne N. Aspinall Lecturer of Political Science, History, and Public Affairs; A.B., Harvard College; J.D., New York University.

DAN McGILL (1995), Cosmicos Professor of Religious Studies; B.A., Metropolitan State College, M.A., St. Thomas Seminary.

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.

WILLIAM PARRISH (2000), Wayne N. Aspinall Professor of History, Political Science and Public Affairs; B.S., Kansas State University; M.A., Ph.D., University of Missouri.

MORT PERRY (1996), Cosmicos Professor of Religious Studies; B.A., Rutgers University; M.A., University of Wyoming; M. Phil., Syracuse University.

GLENDA RILEY (1993), Wayne N. Aspinall Professor of History, Political Science and Public Affairs; Ph.D., University of Ohio.

PAMELA RINEY-KEHRBERG (1999), Wayne N. Aspinall Professor of History; B.A., The Colorado College; M.A., Ph.D., University of Wisconsin.

WILLIAM G. ROBBINS (1990), Wayne N. Aspinall Professor of History; B.S. Western Connecticut; M.A., Ph.D., University of Oregon.

FRANK ROSENTHAL (1994), Cosmicos Professor of Theology; Ph.D., University of Pittsburgh.

ZACHARY A. SMITH (1994), Wayne N. Aspinall Professor of History, Political Science and Public Affairs; B.A., California State University, Fullerton; M.A., Ph.D., University of California, Santa Barbara.

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 and computer laboratories 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. All classrooms have state of the art multimedia presentation systems.

Wubben Hall (1962) contains classrooms, laboratories, staff offices and storage areas for physical and life sciences, mathematics, and computer sciences. A special feature of the building is an octagonal lecture hall that seats one hundred persons. This building was completely remodeled in 1998 and connected to the new Science Center.

The Science Center (1996) contains modern state of the art laboratories for biology, chemistry, geology, and environmental sciences. This building also contains an electron microscopy laboratory, a herbarium, and animal holding facilities. A special feature is the Saccomanno Lecture Hall that seats 120 and has full multimedia capabilities. An attractive courtyard between this building and Wubben Hall provides space for outdoor lectures and study.

Walter Walker Fine Arts Center (1969) includes classroom, office, support, and performance space for drama and music programs. The building features a 660 seat theatre with fly loft and modern drama lighting systems. A new addition scheduled for completion in August of 2002 will add a 300 seat recital hall, a 150 seat experimental theatre, choral and instrumental rehearsal rooms, dressing rooms, offices, and music practice rooms.

The Fine Arts Building (2002) provides studio laboratories, offices, and classrooms for Fine Arts, Graphic Arts, and Mass Communication. This facility has large covered outdoor work areas for ceramics kilns and a bronze foundry. A state of the art TV Production Studio is part of the Mass Communication facilities. The building is designed to allow viewing of the studio laboratories activities from the hallways.

William A. Medesy Hall (1969, remodeled in 1992, 1996), houses offices, classrooms, and laboratories for the Nursing and Radiologic Science programs, and Little Mavericks Daycare.

Roe F. Saunders Physical Education Center (1968, 1996), 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.

The W. W. Campbell College Center (1962, remodeled 1990-91), contains a bookstore, 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. Career Counseling Services, also located in the Campbell College Center, offer counseling, career development, employment and placement services.

The Student Recreation Center opened in January of 1996. The recreational gymnasium complex consists of two basketball courts, volleyball, badminton, team handball and indoor soccer areas. A large fitness area is equipped with weights and cardiovascular machines. An indoor track and a 28-foot high climbing wall are also part of the 33,000 square-foot facility.

Four 200-student residence halls -- Tolman, Rait, Piton and Monument Halls (1966, 1967, 1997), 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 Housing/Residence Life offices are located in the Student Life Center.

Little Mavericks Learning Center is organized for the convenience of Mesa State College students who have small children.

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.

The Industrial Energy Training Center (1982), houses staff offices, training areas and classrooms. The 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 Tilman M. Bishop 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 Campus contains classrooms, a computer lab, a telecommunications lab, and staff offices. It is located at 234 S. Cascade in Montrose, Colorado. The facility was occupied in 1998 and serves college and continuing education students.

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Mesa State College
1100 North Avenue
Grand Junction, CO 81501-3122
1-800-982-MESA (6372)
1-970-248-1875
www.mesastate.edu
E-mail: admissions@mesastate.edu