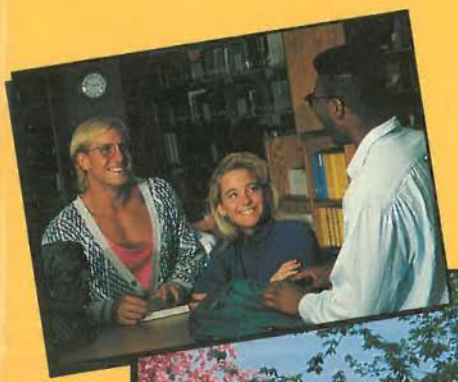
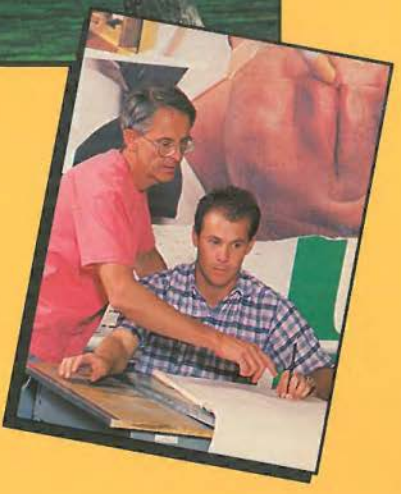
MESA STATE COLLEGE

GRAND JUNCTION
COLORADO





92 93 CATALOG

1992-93 ACADEMIC CALENDAR

SUMMER SEMESTER 1992

May 15 (Fri.)	Registration for 12-week session and first 6-week session, Orientation
May 18 (Mon.)	Classes begin
May 25 (Mon.)	Memorial Day holiday
June 25-26 (Thur., Fri.)	Final exams for first 6-week session
June 29 (Mon.)	Registration for second 6-week session Classes begin
Aug. 6-7 (Thur., Fri.)	Final exams for 12-week session and Second 6-week session
Aug. 7 (Fri.)	Summer Session ends

FALL SEMESTER 1992

Aug. 22 (Sat.)	ACT Testing (Residual) 8:00 am, Houston
Aug. 24 (Mon.)	Orientation
Aug. 25 (Tues.)	Registration
Aug. 26 (Wed.)	First day of classes
Sept. 7 (Mon.)	Labor Day — **classes in session**
Sept. 7 (Mon.)	Last day to add classes
Sept. 10 (Thur.)	Last day to drop classes without a "W"*
Oct. 19-20 (Mon., Tues.)	Fall Break
Oct. 21 (Wed.)	Second module begins
Nov. 6 (Fri.)	Last day to withdraw from classes**
Nov. 25-27 (Wed.-Fri.)	Thanksgiving vacation
Dec. 11 (Fri.)	Last day of classes
Dec. 14, 15, 16, 17 (Mon.-Thur.)	Final examinations
Dec. 17 (Thur.)	Fall Semester ends

SPRING SEMESTER 1993

Jan. 7 (Thur.)	ACT Testing (Residual) 8:00 am, Houston
Jan. 8 (Fri.)	Registration and Orientation
Jan. 11 (Mon.)	First day of classes
Jan. 21 (Thur.)	Last day to add classes
Jan. 26 (Tues.)	Last day to drop classes without a "W"*
Mar. 6-14	Spring vacation
Mar. 15 (Mon.)	Second module begins
Mar. 19 (Fri.)	Last day to withdraw from classes**
Apr. 30 (Fri.)	Last day of classes
May 3, 4, 5, 6 (Mon.-Thur.)	Final examinations
May 6 (Thur.)	Spring Semester ends
May 7 (Fri.)	Commencement
May 8 (Sat.)	Commencement

*DROP: The class(es) will not show on a student's transcript or record.
**WITHDRAW OR W: The class(es) will show on student's transcript with a "W" in the place of a grade.

MESA STATE COLLEGE

P.O. Box 2647
Grand Junction, Colorado 81502

CATALOG

1992-93

NEED MORE INFORMATION?

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

Associate Director of Admissions ..... Scott Smiley - (303)248-1376
in Colorado, Toll Free 1-800-982 MESA

Billing Information (tuition, fees, etc.) ..... Katy Bell — (303)248-1661

Center for Coordination of Graduate Education ..... Velda Bailey — (303)248-1476

Continuing Education ..... (303)-248-1476

Financial Aid Director (scholarships, loans, grants) .. Phil Swille — (303)248-1396

Housing Director ..... Michael D. Black — (303)248-1536

Non-Traditional Coordinator ..... Gabe DeGabriele — (303)248-1847

Pre-College Counseling ..... Bob Stokes — (303)248-1366

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

Mesa State College does not discriminate on the basis of race, color, creed, national origin, sex, age, or handicap in admission or access to, or treatment or employment in, its educational programs or activities. Inquiries concerning Title VI, Title IX, and Section 504 may be referred to the Affirmative Action Office at Mesa State College, P.O. Box 2647, Grand Junction, CO. Phone (303)248-1498.

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.

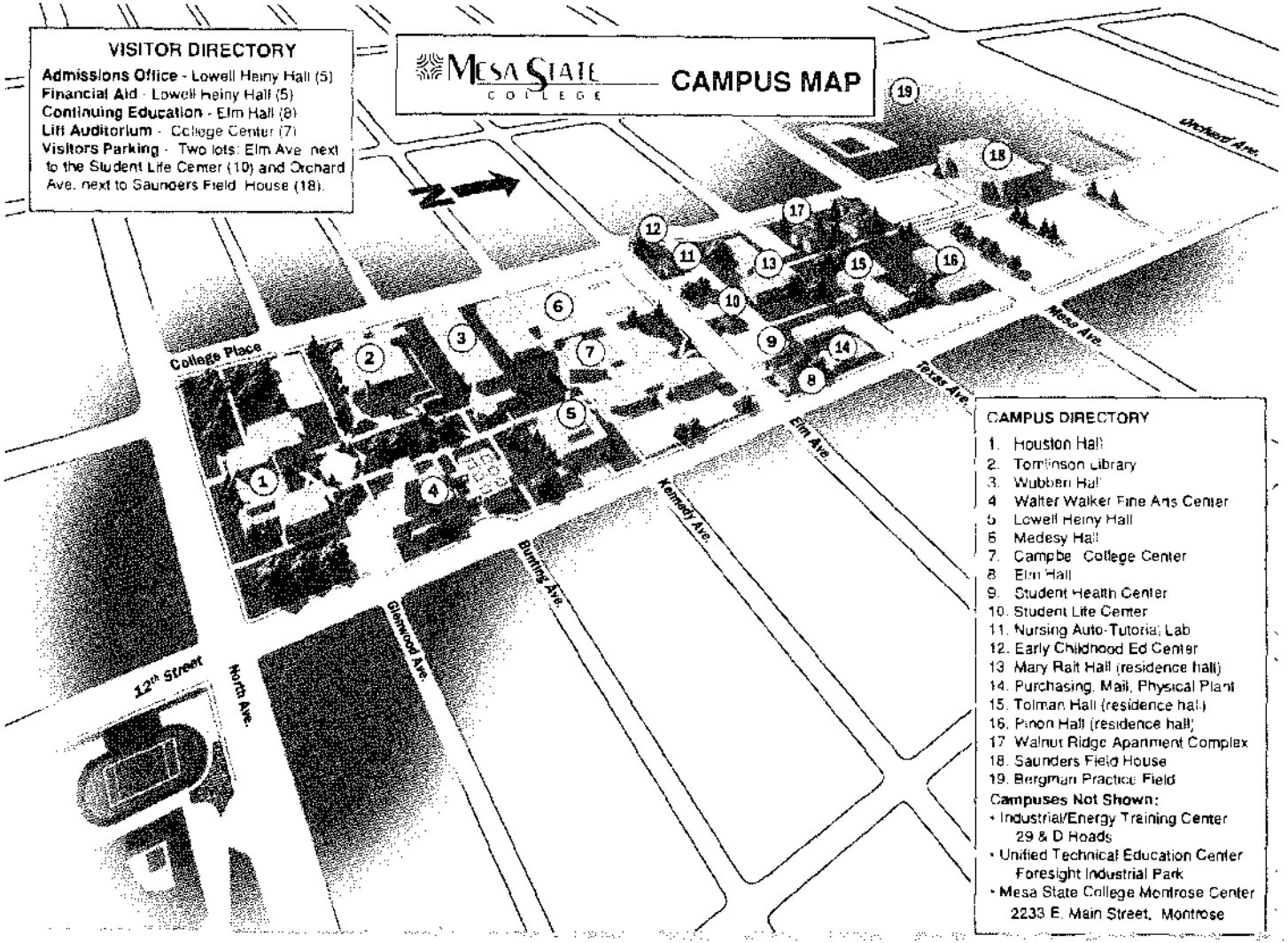

VISITOR DIRECTORY
Admissions Office - Lowell Heiny Hall (5)
Financial Aid - Lowell Heiny Hall (5)
Continuing Education - Elm Hall (8)
Liff Auditorium - College Center (7)
Visitors Parking - Two lots: Elm Ave. next to the Student Life Center (10) and Orchard Ave. next to Saunders Field House (18).
MESA STATE COLLEGE
CAMPUS MAP
College Place
Elm Ave.
Kennedy Ave.
Bunting Ave.
Glenwood Ave.
12th Street
North Ave.
Texas Ave.
Mesa Ave.
Orchard Ave.
CAMPUS DIRECTORY
1. Houston Hall
2. Tomlinson Library
3. Wubben Hall
4. Walter Walker Fine Arts Center
5. Lowell Heiny Hall
6. Medesy Hall
7. Campbell College Center
8. Elm Hall
9. Student Health Center
10. Student Life Center
11. Nursing Auto-Tutorial Lab
12. Early Childhood Ed Center
13. Mary Rait Hall (residence hall)
14. Purchasing, Mail, Physical Plant
15. Tolman Hall (residence hall)
16. Pinon Hall (residence hall)
17. Walnut Ridge Apartment Complex
18. Saunders Field House
19. Bergman Practice Field
Campuses Not Shown:
• Industrial/Energy Training Center
29 & D Roads
• Unified Technical Education Center
Foresight Industrial Park
• Mesa State College Montrose Center
2233 E. Main Street, Montrose

TABLE OF CONTENTS

(See Alphabetical Index for specific topics)

FOREWORD

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

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

GENERAL INFORMATION

How to Use This Catalog:

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

This catalog is divided into four main sections in the following order:

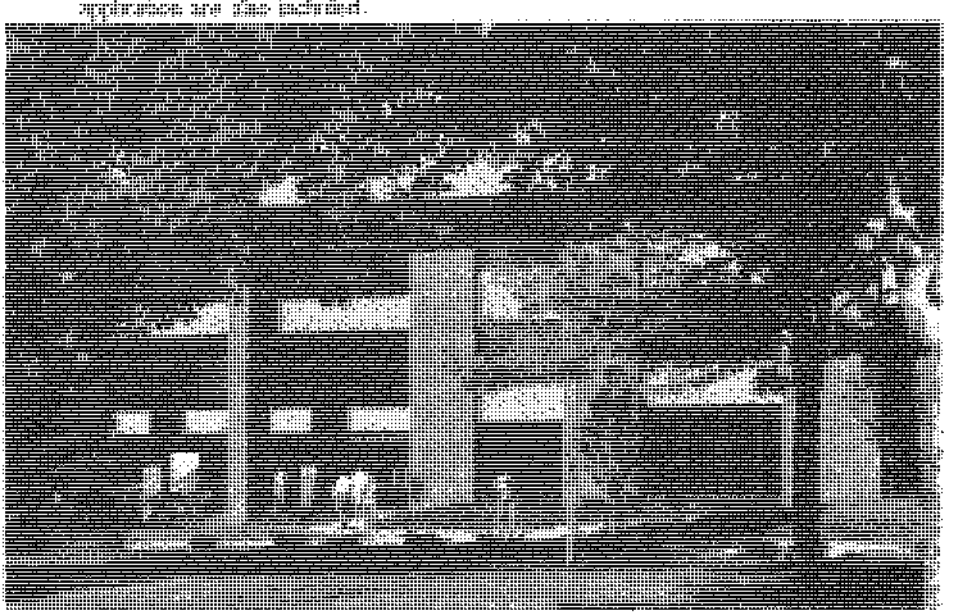
General Information about Mesa State
A brief list of degrees and programs offered, admissions, and registration procedures, expenses, financial aid, student services, academic regulations and honors, and graduation requirements.

Instructional Programs
Academic programs offered by the College, presented separately for each of the six schools, along with degrees and certificates offered and the general requirements for earning them.

Course Descriptions
A brief description of each course at Mesa State listed alphabetically by prefix.

Class schedules are published before each semester and are available from the Records office, (303 248-1555). A year-long schedule is available in March. Not all classes described in this catalog are offered every semester or every year.

Index, Academic Programs, Campus Personnel
The governing board, administrative staff, and faculty are listed at the end of the catalog. Indexes to the catalog, a calendar, a campus map, and a blank admission application are also included.



The John U. Tomlinson Library is one of the newest college libraries in the state of Colorado.

Mesa State College Role and Mission

The threefold mission of the College is in accord with the statement of the General Assembly in House Bill 1187:

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

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

Background on Mesa State College

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

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

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

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

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

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

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

Accreditation

Mesa State College is accredited by the North Central Association of Colleges and Schools. Accreditation by this agency places credits earned at Mesa State College on

a par with those earned at other similarly accredited institutions throughout the United States. Various programs at Mesa are approved by appropriate state and national agencies, including the Colorado Board of Nursing, National League for Nursing, Colorado State Board of Accountancy, and the Committee on Allied Health Education of the American Medical Association (Radiologic Technology).

Location

The Mesa State campus is located within the city limits of Grand Junction, the largest city in western Colorado with an area population of 85,000. The campus is bordered by an attractive and modern residential neighborhood. Stores and other conveniences are located within walking distance of the campus. Mall shopping and the Main Street shopping district are both nearby.

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

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

College Community Relations

As 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 Wayne N. Aspinall Chair of History, Political Science and Public Affairs; and a number of scholarships 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 Social and Behavioral 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, and Western State College, are joined to identify and facilitate cooperative efforts among the institutions.

Mesa State College is also authorized to enter into consortium agreements with other public institutions of higher education in the state to make additional programs and services available to students. For details about these programs, refer to the Consortium Programs section of this catalog.

Inter-Institutional Students

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

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

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

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

Institutions of the OSC have agreed on the following:

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

Area Vocational School

Recognizing the national need for better vocationally-trained persons, Mesa State College as an approved Area Vocational School provides a variety of training opportunities for individuals who wish to become more highly job-skilled. Numerous jobs await those who have the skills and abilities demanded by business and industry.

Programs and course offerings are structured to provide job entry, retraining, or skill upgrading. The further the student progresses in a program area, the greater the degree of job skill development experienced.

Students who wish to earn a degree or a certificate must have a high school diploma or a General Education Development (GED) certificate and take the American College Test (ACT) or the Scholastic Aptitude Test (SAT) before enrollment in programs. They must also meet all general education requirements and follow the suggested curriculum for the skill training in which they enroll. Students not seeking a degree or certificate may enroll in individual courses with the consent of the instuctors.

Occupational Education Courses and Programs include:

Accounting Technician
Automotive Collision Repair
Automotive Service
Automotive Technology
Business Computer Information Systems
Commercial Art
Computer Drafting Technology
Electric Lineworker
Electronics Technology
Environmental Restoration Engineering Technology
Farm and Ranch Business Management
Heavy Equipment/Diesel Mechanics
Machine and Manufacturing Trades
Medical Office Assistant
Nursing, Associate of Applied Science
Printing Technology
Radiologic Technology
Secretarial Programs and Upgrading
Travel, Recreation and Hospitality Management
Welding

Courses designed to meet special employment needs are offered at various locations and times throughout Mesa County if minimum enrollment requirements can be met.

Continuing Education and Extended Studies

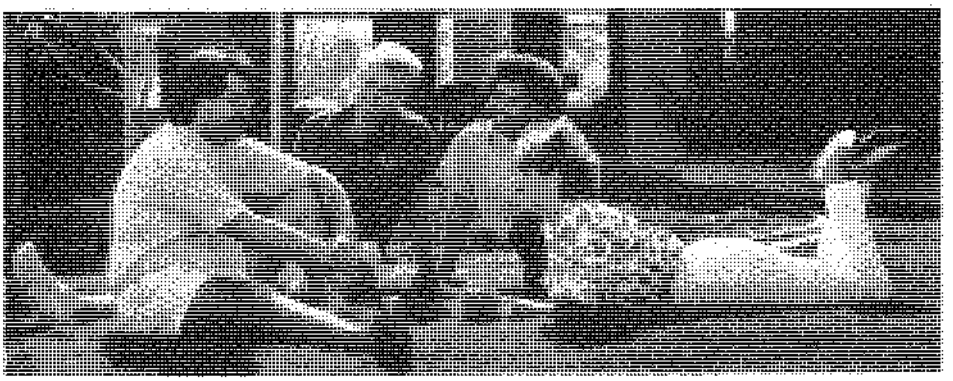
The Extended Studies program offered through the Mesa State College Office of Continuing Education is part of a state-wide outreach education program sponsored by the Colorado Commission on Higher Education. The system, which consists of public colleges and universities, encourages development of instructional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

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

The Office of Continuing Education provides several special offerings. Among these are a summer dance program, Elderhostel, teleconferences, classes for children, graduate programs, summer "College for Kids," and the Senior Silvercard Program.

Mesa State College cooperates with other state colleges and universities to provide facilities for on- and off-campus extended studies credit and non-credit classes and services. Most of the courses available through this arrangement are at upper division or graduate level. Continuing Education coordinates many of these offerings.

Most of the Continuing Education classes are scheduled in the evenings and non-credit offerings are usually less than a semester in length. Registration is conducted through the Office of Continuing Education, phone (303) 248-1476 or FAX (303) 248-1923. During the academic fall and spring semesters, the Continuing Education office is open Mondays through Thursdays from 8:00 a.m. until 7:30 p.m. On Fridays the offices are open from 8:00 a.m. until 5:00 p.m.



More than 4,200 students attend Mesa State College coming from all over Colorado, the U.S., and more than 30 countries.

Mesa State College Montrose Center

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

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

Mesa Intensive English Program

Established in 1986, the Intensive English Program was founded to provide an international atmosphere to the Mesa State College campus. The program provides international students a unique language and cultural experience through frequent contact with the faculty and students on the Mesa State College campus. Students in the program also have the opportunity to learn about American culture by attending and participating in various events and activities, and meeting members of the community through the host family program.

Four levels of instruction are offered throughout the year: fall, 16 weeks; spring, 16 weeks; and summer, ten weeks. High school graduates for whom English is not the primary language are invited to apply for admission. Special programs may also be arranged.

The Intensive English Program curriculum is designed to prepare students for full-time academic study at Mesa State College. Successful completion of the fourth and highest level satisfies the English proficiency requirement for admission to Mesa State College, as well as to other selected colleges in Colorado. Admission to the Intensive English Program does not guarantee admission to an academic program. For more information about admission requirements for international students, please refer to the section entitled "International Students".

Tutorial and Learning Center

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

Physically and Learning Disadvantaged

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

Summer Session

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

The typical summer session consists of a twelve-week term held concurrently with two six-week terms. Courses may be taken in more than one term if scheduling permits. Tentative bulletins on summer offerings are usually available in early January.

FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT OF 1974

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

DEGREES AND PROGRAMS

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

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

School of Business — Accounting; Administrative Office Management; Business Administration; Business Computer Information Systems; Business Economics; Business Software Engineering; Financing; Legal Assistant; Management; Managerial Accounting; Marketing; Office Administration; Office Supervision and Management; Accounting Technician, Administrative Secretary, Legal Secretary, Medical Secretary, Personnel Management; Public Accounting; Travel, Recreation, and Hospitality Management.

School of Humanities and Fine Arts — Early Childhood Education; English; Fine Arts: Art, Dance, Music, Music Theatre, Theatre; Humanities; Mass Communications; Speech; Teacher Certification.

School of Natural Sciences and Mathematics — Agriculture; Biology; Computer Science; Computer Science Business Software; Engineering; Engineering Technology; Environmental Restoration; Farm and Ranch Business Management; Geology; Health Related Studies; Mathematics; Medical Technology, Pharmacy, Physical Therapy; Physics, Pre-Forestry.

School of Nursing and Allied Health — Nursing, Radiologic Technology.

A trademark of Mesa State is personal attention from professors who are involved with students' education.

School of Social and Behavioral Sciences — Anthropology; Career Counseling and Guidance; Criminal Justice; Counseling Psychology; Economics; General Social Science; History; Human Services; Municipal Parks and Recreation Management; Outdoor Recreation; Physical Education; Political Science; Psychology; Sociology.

School of Technology — Automotive Collision Repair; Automotive Service; Automotive Technology; Commercial Art; Computer Drafting Technology; Electric Lineworker; Electronics Technology; Electronic Engineering Technology; Heavy Equipment-Diesel Mechanics; Machine and Manufacturing Trades; Machining Technology; Manufacturing Technology; Printing Technology; Welding.

Other Mesa State College service areas include:

Area Vocational School — Coordinates various secondary, post-secondary and occupational programs taught in the different schools of the College and Mesa County.

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

Degrees and Programs of Study

Studies undertaken by a student at Mesa State College depend upon career plans and educational objectives. The College offers baccalaureate degrees in accounting, biological and agricultural sciences, business administration, recreation and leisure services, liberal arts, nursing, physical and mathematical sciences, selected studies, and social and behavioral sciences with a variety of options available in many of these four-year degree areas.

A student may first receive an associate degree before continuing toward a baccalaureate degree.

Some students may choose to take courses at Mesa State College which will fulfill lower-division requirements for transfer to a college or university offering baccalaureate or professional programs not currently available at Mesa State College. Others may prefer to work toward one of the associate degrees, either as preparation for immediate employment upon graduation or as the first phase in their total educational goal.

Mesa State College offers a variety of occupational education programs for students whose immediate plans do not include completion of a baccalaureate degree. These specialized programs of a terminal, technical, or semiprofessional nature are designed to help students develop the specific skills required for employment in various technical occupations.

Degrees and Certificates

Bachelor of Arts (B.A.)
- Liberal Arts
- Recreation and Leisure Services
- Selected Studies
- Social and Behavioral Science

Bachelor of Business Administration (B.B.A.)

Bachelor of Science (B.S.)
- Accounting
- Biological and Agricultural Sciences
- Physical and Mathematical Sciences

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.)
- Automotive Collision Repair
- Automotive Technology
- Business Computer Information Systems
- Commercial Art
- Electronics Technology
- Environmental Restoration Engineering Technology
- Machining Technology
- Nursing
- Office Supervision and Management
  - Accounting Technician
  - Administrative Secretary
  - Legal Secretary
  - Medical Secretary
- Printing Technology
- Radiologic Technology
- Travel, Recreation, and Hospitality
- Welding

Certificate of Occupational Proficiency Programs
- Automotive Collision Repair
- Automotive Services
- Computer Drafting Technology
- Early Childhood Education
- Electric Lineworker
- Electronics Technology
- Farm and Ranch Business Management
- Heavy Equipment/Diesel Mechanics
- Machine and Manufacturing Trades
- Office Supervision and Management
  - Clerical
  - Medical Office Assistant
- Welding

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

Consortium Programs

There are a number of masters degrees that may be obtained on the Mesa State College campus. These are offered by universities other than Mesa State, and the degree will thus be from the university offering the program. For futher information regarding the following master's degree programs, contact the Office of Continuing Education, Elm Hall, Room 205, phone (303) 248-1476.

Master of Arts (M.A.)
- Elementary Education (Adams State College)
- Guidance and Counseling (Adams State College)

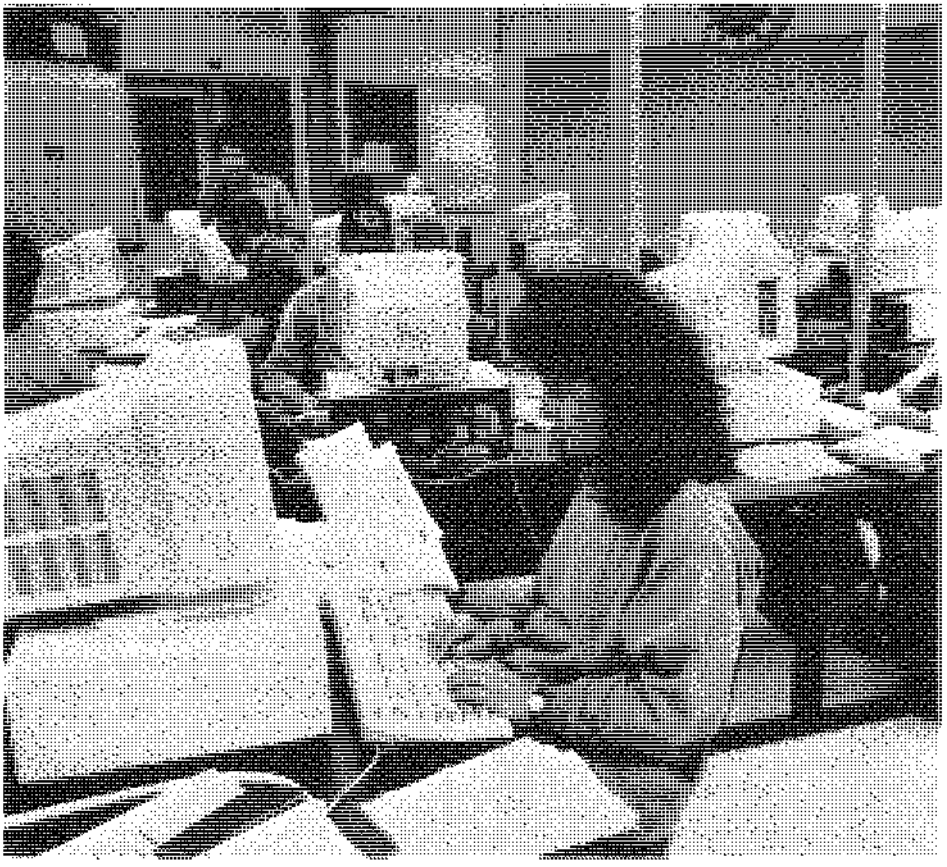
Master of Arts (M.A.) (con't)
Nursing (University of Colorado Health Science Center)
Reading (University of Northern Colorado)
Special Education — Moderate Needs (University of Northern Colorado)

Master of Business Administration (M.B.A.) (University of Southern Colorado)

Master of Public Health (M.P.H.) (University of Northern Colorado)

Master of Public Administration (M.P.A.) (University of Colorado-Denver)

Master of Education in Vocational Education (M.Ed.) (Colorado State University)



Fourteen computer labs with a total of 260 computer systems are located on campus.

Special Features of Mesa State College's Baccalaureate Degree Programs

Seven of Mesa State College's nine baccalaureate degree programs incorporate a unique structure which is based on an "emphasis" concept. This concept was developed by Mesa State College working closely with the Colorado Commission on Higher Education in 1979.

The following baccalaureate degree programs incorporate the "emphasis" concept:

Bachelor of Business Administration
Bachelor of Science in Accounting
Bachelor of Arts in Liberal Arts
Bachelor of Science in Physical and Mathematical Science
Bachelor of Science in Biological and Agricultural Sciences
Bachelor of Arts in Recreation and Leisure Services
Bachelor of Arts in Social and Behavioral Sciences

The above consist of program blocks containing:

General Education courses, forty semester hours minimum, plus four hours of physical education activity courses.

A Core program designed specifically for each degree of from thirty to forty semester hours chosen from the broad areas of the degree.

An Emphasis area in one of the disciplines of the degree consisting of about one-half the number of hours in the Core.

Electives, open or restricted, in sufficient number to bring the aggregate of all courses applicable to the degree to a minimum of one hundred twenty-four semester hours.

The forty semester hours minimum of general education must be distributed over specific subject matter areas. Six hours of English Composition are required plus eight or nine hours chosen from selected courses in each of four areas: the social sciences, the biological sciences and psychology, the physical sciences and mathematics, and the humanities and fine arts, as explained in the college catalog. The physical education requirement represents the equivalent of one full year of activity courses.

Core areas are chosen for each degree to present a broad exposure to several disciplines included in the area of the degree. This insures against too narrow a selection of courses.

The emphasis area permits the students to pursue their chosen disciplines; however, the designation of this element as being approximately half the number of hours in Core insures against excessively narrow programs.

Electives may be open or restricted to certain related disciplines in accord with the counsel of faculty advisers or departmental decisions. In all programs a minimum of forty hours in junior or senior level courses is required.

More detailed information concerning these requirements is contained in the sections of this catalog which describe the academic programs offered by the various schools of Mesa State College.

ADMISSION INFORMATION

Admission to Mesa State College

How to Apply

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

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

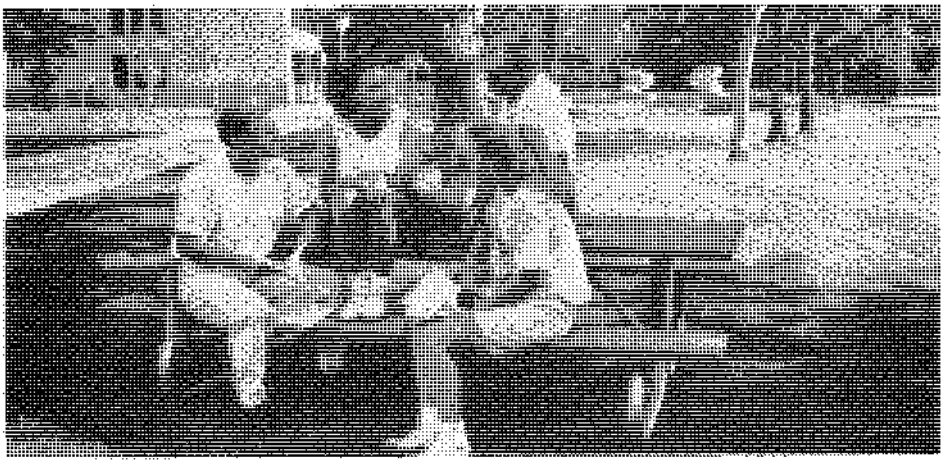
General admission to Mesa State College does not guarantee acceptance into a specific program (for example, Nursing). Students not accepted into a baccalaureate program may be admitted into a Mesa State associate degree or certificate program for which they qualify. Students may re-apply for admission 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.

Orientation and Registration for Classes

Once admitted, new students will receive information from the student-run Orientation Committee about the orientation programs held throughout the year at Mesa State College. New students are encouraged to attend an orientation program where they will be introduced to their academic adviser and to the Mesa State campus. During the orientation program, academic advisers will assist students with reviewing the College Catalog and planning their schedule of classes.

Once admitted, the Admissions Office will supply new students with step-by-step procedures for registration. Students may register for classes during the orientation program or at a later time using the phone-in registration system.

Degree-seeking students who have not completed the admission process and been admitted to Mesa State College will not be allowed to register for classes. (To be



New students can contact the Admissions Office for a personal tour of the campus anytime during the year.

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

Admission Procedures by Student Classifications

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

High school students

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

General Educational Development (GED) Certificate Students

1. Obtain and complete an application for admission to Mesa State College.
2. Submit the application along with a non-refundable $20 application fee.
3. 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 scores may be admitted to Mesa State College. Admission to particular programs is contingent on meeting specific admission requirements for those programs.

Transfer Students

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

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 or an associate degree.

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

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

1. All public colleges and universities in the state of Colorado, provided they are currently accredited. This applies regardless of the institution's accreditation status at the time the credit was earned.
2. Private and out-of-state colleges and universities, provided the institution is currently accredited and was accredited or was a candidate for accreditation at the time the credit was earned. However, only credits with a grade of "C" or better are eligible to be used toward a degree or certificate.
3. Accredited two-year community or junior colleges.
4. Institutions that award "S" or "P" grades, if the granting institution states that such grade is equal to a grade of "C" or better.

Returning Students

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

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

Prior Credits

Mesa State College reserves the right to evaluate, on a course-by-course basis, any credits earned 15 or more years prior to re-enrollment which the student wishes to apply toward any degree or certificate program.

Academic Renewal

Upon re-enrolling at Mesa State College following a minimum period of five years during which no credit classes were taken at any college, the student has one year to petition the Registrar for "academic renewal." If "academic renewal" is approved, ~~all~~ course credits and grades earned at Mesa State College prior to the five-year minimum absence will ~~not~~ be used for meeting graduation requirements or in determining the student's grade point average.

Non-Degree Seeking Students

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

Non-degree seeking students **have not** been admitted to Mesa State College and are not guaranteed admission at the time of formal application. Once non-degree seeking students apply for formal admission to Mesa State College, the admission policies in effect at the time of application will be used to determine admissibility into the college in general and/or specific academic programs. This includes satisfying all requirements for Admissions Assessment tests such as the ACT or SAT or, for certificate students, the alternative assessment test. Non-degree seeking students are not eligible for financial aid and will not be assigned an adviser. Degree seeking students will have priority over non-degree seeking students regarding registration.

Concurrent Students

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

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

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

International Students

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

1. Application form with $20 non-refundable application fee for regular admission or $55 fee for admission to the Mesa Intensive English Program.
2. Copy of the American College Test (ACT) scores or Scholastic Aptitude Test (SAT) scores.
3. High school transcript (must be translated into English).
4. Transcripts from all other colleges or universities attended (must be translated into English).
5. Affidavit of financial support.
6. Evidence of medical insurance.

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

1. Submission of scores of Test of English as a Foreign Language (TOEFL) with an average of 525 or higher.
2. Submission of results of Michigan Test of English Language with a minimum score of 80.
3. Successful completion of the Mesa State College Intensive English Program.
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.

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 $11,100 per calendar year (12 months).

Additional information and forms may be obtained from the Admissions Office or from the Intensive English Program at Mesa State College.

Admission to Specific Programs

Certain baccalaureate, associate, and certificate programs may have specific entrance requirements in addition to general college admittance. Prospective students should check with the Dean of the School in which the desired program is offered for special requirements or call 1-800-982-MESA in Colorado or (303) 248-1398 outside Colorado. Two examples follow:

Admission to the School of Nursing and Allied Health

Students applying to the School of Nursing and Allied Health must submit additional material. *ACT or SAT scores* **are** *required for all Nursing and Allied Health applicants*. Students applying for admission into the School of Nursing and Allied Health may be admitted into the general college until notified by the School of Nursing and Allied Health as to their acceptance. Admission to Mesa State College does not guarantee admission into the School of Nursing and Allied Health. Please contact the Dean of the School of Nursing and Allied Health for additional information by calling toll free 1-800-982-MESA in Colorado or 303-248-1398 outside Colorado.

Selected Studies Program

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

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

Selective Service

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

Veterans

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

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

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

Immunization Policy for Measles or Rubella

All students who attend classes on the Mesa State College campus must have on file an Immunization Documentation form in the Admissions or Records office before they will be permitted to register for classes. Forms are available in the Health Service office, the Office of Continuing Education, the Office of Admissions, and the Records Office. Students who do not have Immunization Documentation on file will not be allowed to register for classes.

Admissions Assessment and Counseling Tests

ACT or SAT

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

The only exemptions to this admissions requirement are for:

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

Programs in the arts are sponsored throughout the year and are well attended by both students and community members.

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

A special residual ACT test is scheduled prior to registration each semester for applicants seeking admission to Mesa State College who did not take the ACT on one of the national test dates. A testing fee of $20.00 will be collected from the student immediately prior to taking the test. Test results will be available to the student's advisor during registration. Contact the Testing office for further details (303) 248-1215.

Alternative Admission Assessment Device

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

1. The ACT or SAT.
2. An alternative assessment device. Certificate and non-degree seeking students who wish to use this alternative must see the Dean of the School of 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 "Evaluation" section of "General Academic Requirements" in this catalog.

Non-Traditional Credit

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

Advanced Placement/Credit Program

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

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

*Level 3

College Credit by Examination

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. Students must have completed in 12 credit hours before challenge credits will be recorded on a transcript. Maximum credit by examination:

Certificate of Occupational Proficiency ..... 6 credit hours
AA, AS ..... 12 credit hours
AAS ..... 20 credit hours
BA, BS, BBA ..... 20 credit hours

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

Limitation on Non-Traditional Credit

1. Military credits — maximum of 20 lower division credit hours.
2. CLEP and department challenge examinations — maximum of 20 credit hours for a baccalaureate degree or an Associate of Applied Science degree, a maximum of 12 credit hours for an Associate of Arts or an Associate of Science degree and a maximum of six credit hours for a Certificate of Occupational Proficiency.
3. Advanced placement — maximum of 30 credit hours for a baccalaureate degree, 15 credit hours for an associate degree or a maximum of six credit hours for a Certificate of Occupational Proficiency.
4. Competency credit — maximum of 30 credit hours towards a baccalaureate degree or 25 percent of the total credits required for the program towards an associate degree or a Certificate of Occupational Proficiency. Further restrictions apply. See the Registrar for details and guidelines.

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

1. Baccalaureate — 30 credits
2. Associate of Science or Associate of Arts — 15 credits
3. Associate of Applied Science — 20 credits
4. Associate of Science-Nursing — 18 credits
5. Certificate — twenty-five percent of the 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 advisers and the Testing office.

No-Credit-Desired Courses

A student who desires to attend certain classes regularly, but does not wish to receive grades or credit, should register for "no credit desired" in these classes. Credit for such courses may not be established at a later date.

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

Senior Citizen Students

Classes for No Credit

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

Interested persons should obtain a registration form from the Coordinator of Non-Traditional Adult Students in Elm Hall, Room 207, (telephone (303) 248-1847). The registration form must be signed by the instructor granting approval and returned to the Coordinator of Non-Traditional Adult Students. No 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 Admissions. The same deadlines, costs, etc., as for other students will apply.

EXPENSES AT MESA STATE COLLEGE

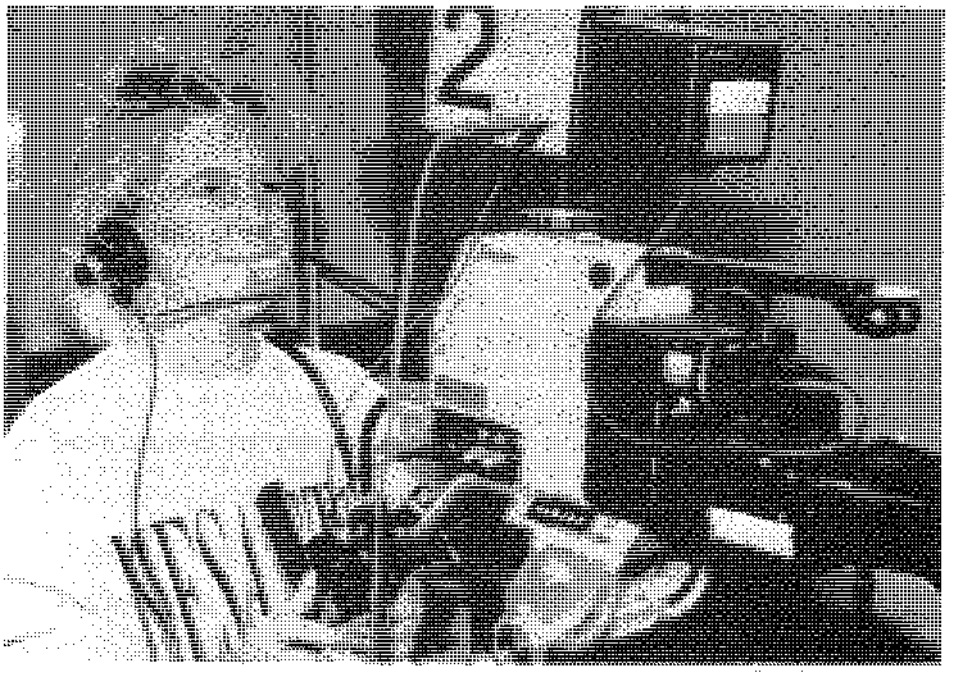
Mesa State College reserves the right to adjust any and all charges, including fees, tuition, and room and board, at any time deemed necessary by the Trustees.

Determination of Residence Status For Tuition Purposes

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

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

Tuition and fees for the 1992-93 academic year had not been determined when this catalog was printed. The following estimated rates are presented for planning purposes only. Students are invited to write for the most current rates, available in July each year.



The television production course is typical of most courses at Mesa State where students have access to the latest equipment used in their chosen professions.

Tuition and Fee Schedule

(Estimate for 1992-93)

Full-Time Students, Regular Academic	**Semester**	**Year**
Colorado Residents (enrolled in 10 or more hours)		
Tuition	$ 660.00	$1,320.00
Student Services Fees	150.00	300.00
TOTAL	$ 810.00	$1,620.00
Non-Colorado Residents (enrolled in 10 or more hours)		
Tuition	$2,071.00	$4,142.00
Student Services Fees	150.00	300.00
TOTAL	$2,221.00	$4,442.00

Part-Time Students, Regular Academic Year:	
Colorado Residents (enrolled in 9 or fewer hours)	
Tuition per semester hour	$ 66.00
Student Services Fees per semester hour	12.00
TOTAL	78.00
Non-Colorado Residents (enrolled in 9 or fewer hours)	
Tuition per semester hour	$ 159.00
Student Services Fees per semester hour	12.00
TOTAL	$ 171.00

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

A computer fee of $13 will be assessed to EACH student, whether full-time or part-time, to provide enhancements to the student computer labs.

Summer Session

Tuition charges equal those for the regular fall or spring semesters; however, student services fees are $8.00 per semester hour regardless of the number of hours taken.

Payment of Tuition and Fees

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

Refunds of Tuition and Fees

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

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

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

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

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

Room and Board

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

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

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

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

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

The Facilities

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

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

Student Housing Contract

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

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

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

Off-Campus Housing

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

Food Service

Food services, offered through Marriott Corporation to students at Mesa State College, include a choice of three meal plans: 10 meals, 15 meals, or 19 meals per week (only two meals, brunch and dinner, are served on weekends). Multiple entrees are served with unlimited seconds. Meals are planned with special needs in mind also, such as for the weight conscious or vegetarian.

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

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

Payment of Room and Board

Room and board are contracted for on a yearly basis and are payable each semester at the time of registration. Special deferred payments can be arranged through the Business Office. Registration is not complete until the student's obligation is met in full. The total charge for one year is divided into 60% fall term and 40% spring term. Room and board rates for the 1992-93 academic year had not been determined when this catalog was printed. The following schedule reflects estimated rates for 1992-93.

	Fall	Spring	Total
Apartments:			
2 bedrooms, 3 students	$1,049.00	$ 699.00	$1,748.00 per student
3 bedrooms, 4 students	$1,049.00	$ 699.00	$1,748.00 per student
Residence Halls:			
Double occupancy	$ 929.00	$ 618.00	$1,547.00 per student
Single occupancy	$1,228.00	$ 818.00	$2,046.00 per student

Board: (Available to all students; mandatory for dorm residents)	Per Semester	Total
19 meal plan	$ 855.00	$1,710.00
15 meal plan	$ 817.00	$1,634.00
10 meal plan	$ 788.00	$1,576.00

Room Refunds

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

Board Refunds

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

Other Fees and Expenses

Books and Supplies

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

The approximate cost of textbooks for a single semester is $220 to $250 but varies with the program of study. Supply costs vary depending upon student preference and course requirements.

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

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

The College bookstore hours are:

Monday, Tuesday and Thursday	9:00 a.m. to 3:00 p.m.
Wednesday	7:45 a.m. to 7:00 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 $136 per semester for one lesson each week and is offered through Continuing Education. Other special instructional services available to students for extra fees include bowling, skiing, and physical education classes with locker and towel facilities.

Application and Evaluation Fees

Application and Evaluation Fee (non-refundable)	$ 20.00

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

Miscellaneous Fees

Graduation (diploma, application processing)	$ 10.00
Room damage deposit	150.00
Student parking permit (per year)	17.00
Student health insurance per semester (subject to change)	108.00
I.D. card fee	5.00

Student Health Insurance

Student health insurance fees will be billed to every student (enrolled for seven or more hours) who does not complete a waiver form in the Business office by the established deadline. For anyone enrolled for less than seven hours, insurance is available upon request. Insurance coverage is also available for spouse and children.

FINANCIAL AID

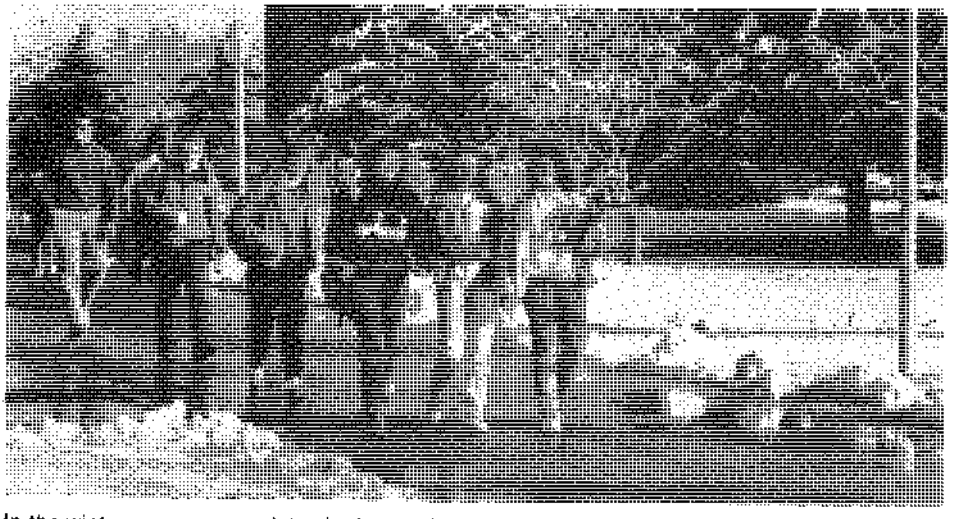
Financial aid at Mesa State College consists of a balanced program of scholarships and grants-in-aid awarded for outstanding academic achievement or outstanding performance in special skill areas including vocational skills, athletics, drama, music, etc. Mesa State College also participates in federal and state programs of grants, loans, and student employment, the awarding of which is based primarily on need as determined by a needs analysis system approved by the Federal government such as the Family Financial Statement (FFS) of the American College Testing (ACT) program, Financial Aid Form (FAF) of the College Scholarship Service (CSS), or the Application for Federal Student Aid (AFSA).

Financial aid awards that are based on 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.

Students who are self-supporting may not be expected to receive support from parents. A single student without dependents will be expected to save no less than $1,200 toward educational expenses and to show income of no less than $4,000 for the prior tax year. Students who do not show a $4,000 income can expect to have their self-supporting status challenged.

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.



In the winter, snow accumulates in the nearby mountains, but melts quickly on campus which is at an elevation of 4,500 feet.

Colorado Student-Aid Programs

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

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

Mesa State College Foundation Programs

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

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

Out-Of-State Grant In Aid

In an effort to encourage outstanding students from states other than Colorado to attend Mesa State College, a tuition waiver equal to one-half the non-resident tuition may be available to students who have achieved a minimum grade point average of at least 2.80. Students will be required to live in Mesa State College housing in order to qualify for one of these grants.

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

Federal Student-Aid Programs

1. *Pell Grant Program* — This is a grant program available to needy students enrolling in an eligible institution of post-secondary education. Application forms are available from high schools or the financial aid office at any eligible post-secondary institution. The student applies through an apparoved needs analysis agency as described before and upon receipt of a Student Aid Report (SAR) from that center, submits it to the financial aid officer of the college of the student's choice for the grant determination. Full-time and half-time students enrolling in an institution of post-secondary education who are high school graduates or equivalent are eligible to apply. The Pell Grant Program is the base program for financial aid at Mesa State College.
2. *College Based Programs* — Mesa State College participates in many other federal student-aid programs. These include the: (1) Perkins Loan Program, (2) Supplemental Educational Opportunity Grants Program, (3) College Work Study Program, (4) Stafford Student Loan Program (formerly the Guaranteed Student Loan), and (5) the other loan programs which are the Parent Loan for Undergraduate Students (PLUS) and Supplemental Loan for Students (SLS). 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 half-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 any of the approved needs analysis agencies. 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.

Students are encouraged to submit their applications for financial aid as soon after January 1 as possible in order to be considered for the different types of federal and state programs.

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

STUDENT SERVICES

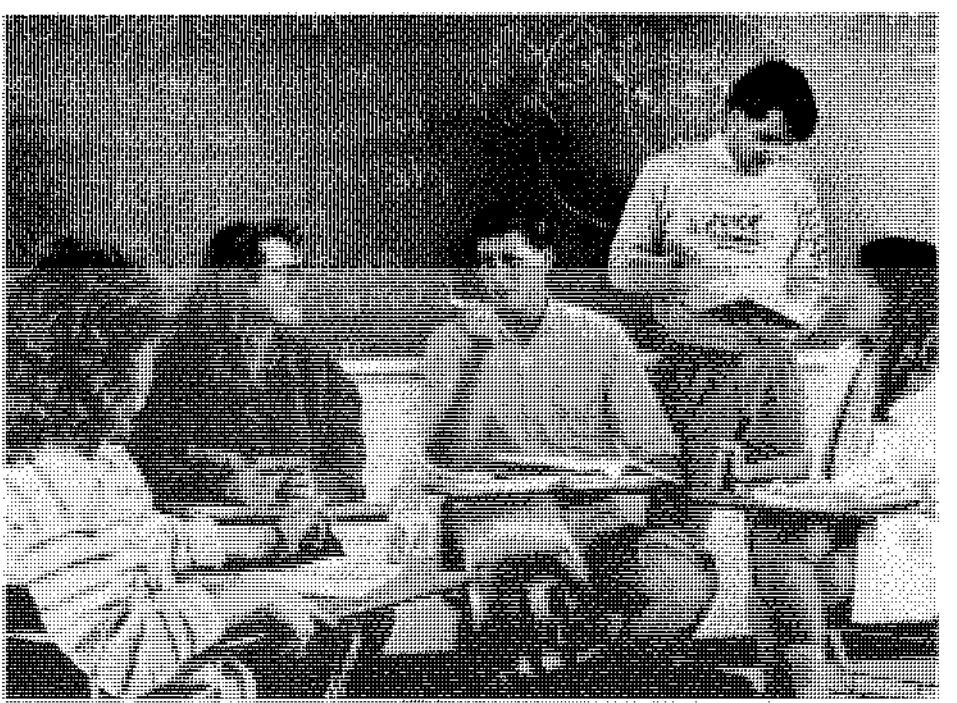
Mesa State College has an environment that encourages and allows students to develop socially as well as educationally. Learning is not confined to the classroom and the library. Student Services provides quality opportunities for students to increase skills and competencies in academic and vocational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

Orientation

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

Academic Advising

All students are assigned academic advisers on the basis of program interest. A faculty adviser helps the student plan a program of study, complete the registration process, and continues to provide assistance in these matters during the student's entire enrollment at Mesa State. Academic advising also takes place during the orientation program. Students who wish to receive pre-college advising in selecting a major may contact the Coordinator of Career/Placement Services at (303) 248-1366.



Free tutoring services are provided by student tutors who are selected and trained by the Tutorial Learning Center.

Adult Re-entry Program

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

Tutorial and Learning Center

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

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

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

Support Services for the Physically and Learning Disabled program is also a program function of the Tutorial and Learning Center.

Physical and Learning Disabled Program

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

Writing Center

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

Student Life Center

The Student Life Center staff is available to assist students with improving life skills and making the adjustment to college life. The following services are offered:

1. *Pre-College Counseling.* Assistance is available in making the transition into the college environment for individuals considering college for the first time or returning after previous attendance. Peer counselors are provided as an added support.
2. *Career Services.* Educational counseling and career development counseling is available in both individual and group settings. Interest inventories, personality testing, career information searches and a computerized system of career guidance (SIGI) are among services available.
3. *Counseling.* Psychological counseling services, crisis intervention, developmental groups, and supportive counseling are available to students at no charge. Assessment and referral to the PsycHealth Center is provided for those students requiring more extensive counseling.
4. *Placement Services.* Skill development workshops are available to students wanting help in resume writing, interviewing, and job application procedures. A job placement file service is available to graduates, and on-campus interviews are open in a number of different fields. Job placement services are offered for enrolled students interested in part-time employment while attending school as well as summer employment.

KMSA, the student radio station, provides extra-curricular learning.

5. *Minority Student Recruitment and Retention (MSSR).* Various programs and individual support services are coordinated through this office to assist in recruitment, admission, and retention of minority students desiring to pursue an education beyond high school.

Mesa State College Day Care Center

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

Student Activities

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

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

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

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

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

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

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

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

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

Outing 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.

Organization of Multi-Cultural Students — This student organization offers leadership experiences for ethnic students and organizes programs to educate students regarding multi-cultural concerns and issues.

Intramural-Recreation Services

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

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

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

Student Health Center

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

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

The Clinic is staffed with a full-time registered nurse and employs a medical doctor on a four-hour daily schedule during class days. The medical doctor provides students with an initial health assessment and evaluation, treats minor illnesses or conditions, and refers students for hospitalization and special treatment as needed. The Health Clinic is located in a separate building on the north side of Elm Avenue immediately across the street from the College Center and is operated by St. Mary's Hospital. Office hours for receiving students are Monday through Friday from 8:00 a.m. through 5:00 p.m.

The Student Health Center is not open on Saturdays, Sundays or holidays. For illnesses or accidents which occur after hours or on weekends, students should report for emergency treatment at an area hospital. In extreme emergencies, help should be obtained by dialing 911. Extended coverage for minor emergencies is provided by St. Mary's Family Practice Center during the academic school year. Arrangements must be made by calling 248-1487. During breaks and the summer semester, call 244-2800.

St. Mary's Emergency Department is available for extreme emergencies. A physician is always on duty in St. Mary's Hospital, 24 hours a day, 7 days a week. In an emergency situation, students who are unable to see the campus physician or a physician at St. Mary's Emergency Department can request the on-call Family Practice Center physician or call 244-2800.

The Mesa State College Health Center is operated by St. Mary's Hospital, the regional medical center. For additional information on the Health Center, call 248-1487.

Drug and Alcohol Education Center

The purpose of the Drug and Alcohol Education Center is to develop, implement, and evaluate ongoing programs that work toward the prevention of substance abuse. The goals are to increase awareness of health risks and the consequences of substance use and abuse, to promote wellness, and to enhance coping skills necessary for healthy life choices.

Components of this education include: early detection (understanding signs and symptoms of drug and alcohol abuse), intervention (communication of concerns to someone you believe may have a problem and encouraging appropriate support) and referral (knowing where to get help for yourself or for another person).

Additional information on activities and services is available at the Drug/Alcohol Education Center, located in the Student Health Center (248-1487).

The College Center

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

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

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

Campus Parking

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

GENERAL ACADEMIC REGULATIONS

System of Grades

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

Academic Standards

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

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

The fine arts center features a state-of-the-art theatre with seating for 625.

Minimum G.P.A.

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 for the particular semester concerned.

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

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

Grade Improvement

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

The option of repeating a course for grade improvement is available to a student only if the course he or she wishes to repeat is still offered at Mesa State and is scheduled to be offered in the semester in which the student wishes to take it. If a student wishes to repeat a course for grade improvement, a "Grade Improvement" form must be filed with the Registrar after repeating the class.

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

Incomplete and In-Progress Grades

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

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

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

Honor and professional societies exist in most areas of study at Mesa State.

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 semester (fall or spring).

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

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.

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 from all fields.

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

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 chapter is a working organization throughout the academic year. It functions as an integral part of the Computer Science, Mathematics, and Engineering Department of Mesa State College.

The Mesa State College Nursing Honor Society has five goals addressing superior scholastic achievement: developing leadership qualities, fostering high professional standards, encouraging creative work, and strengthening members' commitment to the ideals and purposes of the nursing 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. The Honor Society has been recommended to become a Chapter of the National Nursing Honor Society, Sigma Theta Tau International, in the Spring of 1992.

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

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

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 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 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.

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.

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

Graduation With Honors

Each year during formal commencement ceremonies Mesa State College recognizes the following categories of academic achievement:

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

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

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

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

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

To graduate with Honors or Distinction, a student must be awarded credit hours from Mesa State College that amount to a least 51 percent of the credits used for meeting degree requirements.

Registration Procedure

Once admitted to Mesa State College, a student should meet with his or her academic adviser or a faculty member in the discipline to be studied. Not all courses available in this catalog are offered every semester or every year. Schedules of course offerings for the upcoming semester are available in the Records office, along with step-by-step registration procedures.

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

Student Course Load and Limitations

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

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

It is recommended that students limit their academic load to 21 semester hours or less. Students should consult with their advisers before attempting an overload of more than 21 semester hours in a regular semester or more than 16 semester hours in summer term. A surcharge equal to the appropriate credit hour rate, per semester, will be assessed for each credit hour over 21.

Grade Reports

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

Evaluation

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

Article 13 of House Bill 1187, enacted in July, 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.

Attendance

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

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

It is the responsibility of the student to arrange in advance with the instructors for the making up of missed classwork, assignments or tests incurred because of a student's participation in required field trips, intercollegiate games, or other trips. The coach, instructor, or other official whose activities require students to be absent from classes must have approval in advance from the Office of Student Affairs and must have filed with the Vice President for Institutional Advancement and Student Affairs a list of the names of the students involved at least 24 hours before the activity. The list will be distributed to instructors by the Office of Student Affairs.

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

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

Late Registration

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

Students who register late (after classes begin) must complete all work missed. Students who register after the first week of classes are advised to enroll for less than a normal 15 semester-hour load. All registrations must be completed within ten calendar days from the first day of registration.

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 Associate Vice President of Institutional Advancement and Student Affairs.

Withdrawal Procedures

Withdrawal from One or More Classes

Withdrawal from all classes (full semester duration, modular, and summer) is permitted up to the mid-point of those classes. Proper forms and signatures are required and must be submitted to the Registrar's office. Forms are available at the Registrar's office or the Deans' offices. Students who officially withdraw from class(es) by the deadline are given a "W" grade.

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

Withdrawal from College

Students who desire to withdraw from the College should notify their faculty advisers and report to the Registrar's office. (See refund policy.) **The necessary withdrawal papers must be filled out by the student and officially signed by the appropriate Registrar's office staff.** Such withdrawal may be made up to the mid-point of the term or classes being taken. Grades of "W" will be given **only if all withdrawal procedures have been satisfied.** Exceptions to the withdrawal deadline are possible only at the discretion of the instructor, Dean, and Registrar. Requests of students who must withdraw after the deadline due to emergency situations beyond their control will be considered individually.

Academic Probation and Suspension

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

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

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

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

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

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

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

GRADUATION REQUIREMENTS

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

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

Requirements For All Degrees

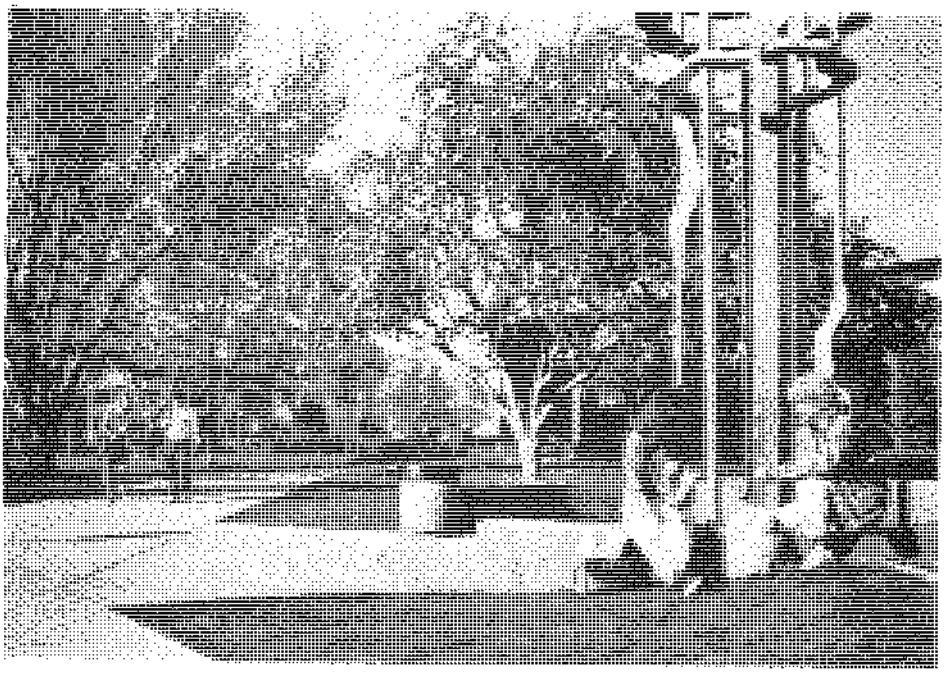
Some requirements may vary with the program and School. Students must abide by the rules set forth in the program sheet which may be obtained from the School offering the degree they are seeking. Candidates for all degrees must accomplish or be governed by, as appropriate, the following:

Petition

A petition to graduate and a program sheet must be filed with the Registrar before the beginning of the term in which final requirements are to be met.

Deficiencies

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



The campus landscape includes sculptures, grassy courtyards, and over 400 trees.

Transferring in Final Credit Requirements from Another College

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

1. No more than 15 semester hours of credit will be accepted in transfer.
2. Credit must be earned in no more than one calendar year immediately following final enrollment in Mesa State College.
3. Specific approval of the proposed institution and courses must be given by the appropriate Dean and the Registrar at Mesa State College during the time of the student's last enrollment at Mesa State College.

English Requirement

Mesa State College requires that English Composition (ENGW 111 and ENGW 112) or required substitutes be completed before a student can exceed sixty accumulated credit hours. The courses must be taken in sequence, and students are encouraged to take them in consecutive semesters. Students are generally expected to take these courses as freshmen. Students who have completed 45 credit hours, but have not completed ENGW 112, will not be permitted to register for the next semester unless ENGW 112 is included as part of that next semester's course work. Students who are completing 60 hours of course work will not be permitted to enroll in any upper division courses until they have passed ENGW 112 (or its required substitutes). Exceptions to the policy for a student will require the written permission of the Department Chairperson.

Physical Education

Activity Classes

Classes with a "PHYE" prefix are physical education activity classes. Each 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. Prerequisites for all "Intermediate" or Part II classes; the corresponding beginning course or consent of instructor.

To graduate, a student must earn four (4) semester credit hours in classes numbered PHYE 100-199, encompassing at least three different activities and with not more than one class taken for credit in the same module. Persons twenty-five or more years of age at the time of Mesa State College matriculation or veterans of military service are exempt from the physical education requirement.

Only one PHYE class may be taken for credit during any given module. Any additional PHYE classes in that module must be taken for "no credit." A course may be taken for credit only once, except for "grade improvement." No more than a total of eight PHYE classes of any kind may be taken for credit. Any PHYE classes taken beyond the eight for which credit is received must be taken for no credit. There is no limit to the number of PHYE classes a student may take for "no credit." PHYE classes may not be used to satisfy elective course requirements for any degree program.

Varsity Athletics

PHYE 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 PHYE courses, the following apply:

Only one varsity sport activity course, numbered PHYE 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.

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.

Preparatory Courses

Preparatory courses are available in several subjects at Mesa State. Numbers of such courses are below the 100 level (i.e., DEVL 090). These courses are designed for students needing to strengthen their backgrounds before entering college level classes and are not intended for transfer purposes. They will not usually fulfill degree requirements. Students are urged to consult their advisers about the need to register in these classes.

Students who have passed any ENGW class numbered 100 or above will not be permitted to register *for credit* in any ENGW class numbered below 100. Only the Dean of the School of Technology may approve exceptions to this for students in vocational programs.

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

Changes in Academic Requirements

The requirements for graduation for each student are the requirements stated in the Mesa State College catalog which is in effect at the time the student first registers at a Colorado public institution of higher education. This is true provided a student remains continuously enrolled (excepting summer sessions) until graduation. A student shall be considered to be "continuously enrolled" if he or she does not have an interruption in enrollment of more than one contiguous semester (excluding summers). If an interruption in enrollment occurs so that the student is no longer "continuously enrolled" as described above, the requirements applicable at the time of re-enrollment shall apply. If any requirements change while a student is enrolled, the student may elect to meet the new requirements. However, the old and the new requirements cannot be combined; one complete set or the other must be elected.

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

Calculation of Grade Point Average for Graduation

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

BACCALAUREATE DEGREE REQUIREMENTS

Candidates for baccalaureate degrees must accomplish or be governed by, as appropriate, the following:

Credit

A minimum of 120 semester credit hours in approved course work plus 4 activity physical education credit hours (120 semester credit hours in approved course work if the student is exempt from physical education) must be earned. No more than 4 semester credit hours of physical education activity classes may be counted toward any degree. 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 emphasis must be achieved. Some baccalaureate degree programs have additional GPA requirements.

Degree Distinctions

A. Bachelor of Science (B.S.) and Bachelor of Business Administration (B.B.A.) Candidates for the B.S. and B.B.A. degrees shall complete at least six semester hours of computer science, statistics, and/or mathematics at or above the college algebra level. At the discretion of the mathematics and computer science faculty, the requirement may be satisfied by a demonstration of equivalent competency.

B. Bachelor of Arts (B.A.)
Candidates for the B.A. degree shall complete at least six semester hours of a foreign language. At least one year of study in a modern language other than English will constitute the distinction for the bachelor of arts degree. (Six hours of *one* language is required; students may *not* use three hours in each of two languages to satisfy this requirement.) At the discretion of the foreign language faculty, the requirement may be satisfied by demonstration of equivalent competency.

C. Selected Studies
Selected studies candidates must choose either A or B above, depending upon their primary area of study. Regardless of the degree distinction selected, a graduate in Selected Studies will be awarded a B.A. degree.

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

Emphasis

The specific program core and emphasis must be completed as required by the appropriate academic school with a grade point average of 2.00 or higher.

Residency

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

General Education

A minimum of 40 semester hours of lower division credit must be earned in General Education areas and must be chosen from the following:

I. English Composition, 6 semester hours. (Usually ENGW 111 and 112, but in a few programs ENGW 111 and 115, or, for those who qualify, ENGW 129.)

II. 34 semester hours in the four areas (a), (b), (c), (d), distributed as follows:

(a) 8-9 semester hours in Biological Sciences and Psychology with a minimum of 3 semester hours in each, chosen from the following:

Biology

BIOL 101, 101L	General Biology & Laboratory
BIOL 102, 102L	General Biology & Laboratory
BIOL 105, 105L	Attributes of Living Systems & Laboratory
BIOL 106, 106L	Principles of Animal Biology & Laboratory
BIOL 107, 107L	Principles of Plant Biology & Laboratory
BIOL 141, 141L	Human Anatomy & Physiology & Laboratory

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

Psychology

PSYC 121, 122	General Psychology
PSYC 200	Psychology of Human Adjustment
PSYC 210	Environmental Psychology
PSYC 220	Psychology of Women
PSYC 233	Human Growth & Development

(b) 8-9 semester hours in Humanities and Fine Arts, divided over two program areas:
Area One, The Arts. Three hours are to be chosen from one of the five groups following:

Art

ARTE 101 or ARTE 102	Two-Dimensional Design Three-Dimensional Design
ARTE 115	Art Appreciation
ARTE 151	Basic Drawing
ARTE 190	Mixed Media
ARTE 211	Art History: Ancient-1300
ARTE 212	Art History: 1300-1900

Fine Arts	
FINE 101	Man Creates
Music	
MUSA 110	Standard Notation
MUSA 114, 115	Theory I & II
MUSA 130	Class Piano I
MUSA 220	Music Appreciation
Speech	
SPCH 101	Interpersonal Communications
SPCH 102	Speechmaking
Theatre	
THEA 115	Problems in Modern Theatre
THEA 141	Theatre Appreciation
THEA 145	Introduction to Drama
THEA 241	Oral Interpretation
THEA 270	Music Theatre

Area Two, The Humanities. The remaining 6 hours may be satisfied either wholly in literature, or in a combination of literature with philosophy or foreign languages. Three hours must be from literature. Other foreign languages offered for lower division credit at Mesa State College, when available, may be used for general education credit in place of those listed.

Literature	
ENLI 131, 132	World Literature
ENLI 134, 135	Mythology
ENLI 141	Introduction to Fiction
ENLI 142	Introduction to Poetry
ENLI 145	Introduction to Oriental Literature
ENLI 254, 255	English Literature I, II
ENLI 261, 262	U.S. Literature I, II
Philosophy	
PHIL 251, 252	History of Philosophy I, II
PHIL 275	Introduction to Logic
French	
FLAF 111, 112	First Year French I, II
FLAF 251, 252	Second Year French I, II
German	
FLAG 111, 112	First Year German I, II
FLAG 251, 252	Second Year German I, II
Spanish	
FLAS 111, 112	First Year Spanish I, II
FLAS 251, 252	Second Year Spanish I, II
FLAS 117, 118	Career Spanish I, II

(c) 8-9 semester hours in Physical Sciences and Mathematics chosen from:

Chemistry	
CHEM 100	Chemistry & Society
CHEM 121 & 121L	Introductory Inorganic Chemistry & Laboratory
CHEM 122 & 122L	Introduction to Organic Chemistry & Laboratory
CHEM 131 & 131L	General Chemistry & Laboratory
CHEM 132 & 132L	General Inorganic Chemistry & Laboratory

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

Computer Science

CSCI 100	Computers in Our Society
CSCI 111	Computer Science I
CSCI 112	Computer Science II
CSCI 131 & 131L	FORTRAN Programming & Laboratory
CSCI 133 & 133L	Pascal Programming & Laboratory
CSCI 250	Data Structures

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

Geology

GEOL 100	Survey of Earth Science
GEOL 103	Weather & Climate
GEOL 105	Geology of Colorado
GEOL 111 & 111L	Principles of Physical Geology & Laboratory
GEOL 112 & 112L	Principles of Historical Geology & Laboratory
GEOL 201 & 201L	Stratigraphy & Laboratory
GEOL 203	Introduction to Environmental Geology

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

Mathematics

MATH 101	Programming
MATH 105, 106	Elements of Mathematics I, II
MATH 110	Finite Mathematics
MATH 113	College Algebra
MATH 119	Precalculus Mathematics
MATH 121	Mathematical Foundations of Business
MATH 127	Mathematics of Finance
MATH 130	Trigonometry
MATH 146	Calculus for Biological Sciences
MATH 151	Calculus I
MATH 152	Calculus II
MATH 253	Calculus III
MATH 260	Differential Equations
MATH 265	Linear Algebra

Physics

PHYS 100	Concepts of Physics
PHYS 101	Elementary Astronomy
PHYS 111 & 111L	General Physics & Laboratory
PHYS 112 & 112L	General Physics & Laboratory
PHYS 121	Classical Physics I
PHYS 122 & 122L	Classical Physics II & Experimental Mechanics Laboratory
PHYS 224	Modern Physics

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

Statistics

STAT 200	Probability and Statistics
STAT 214	Business Statistics

(d) 8-9 semester hours in Social Sciences chosen from:

Anthropology

ANTH 101	Physical Anthropology
ANTH 102	Cultural Anthropology
ANTH 222	New World Archaeology

Economics

ECON 201	Principles of Macroeconomics
ECON 202	Principles of Microeconomics

Geography	
GEOG 103	World Regional Geography
History	
HIST 101, 102	Western Civilizations
HIST 131, 132	United States History
HIST 136	Introduction to the Afro-American Experience
HIST 137	Introduction to the Chicano Experience
Political Science	
POLS 101	American Government
POLS 110	Development of the American Constitution
POLS 256	State and Local Government
POLS 261	Comparative Governments
Sociology	
SOCO 144	Marriage and the Family
SOCO 260	General Sociology
SOCO 264	Social Problems

In addition, the physical education requirement must be met — see "Physical Education" under this "Graduation Requirements" section.

Vocational Credits

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

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. Both emphases desired must be declared on the petition to graduate.

Minimum Credit for a Second Baccalaureate Degree

A student seeking a second baccalaureate degree at Mesa State College must earn a minimum of 30 semester hours of credit, at least 18 of which must be in courses numbered 300 and higher and satisfy all specific program requirements of the new degree and emphasis.

REQUIREMENTS FOR ALL ASSOCIATE DEGREE PROGRAMS:

Associate of Arts (A.A.), Associate of Science (A.S.), Associate of Applied Science (A.A.S.)

Credit

A *minimum* of 60 semester credit hours in approved course work plus four activity physical education credit hours (60 semester credit hours of approved course work if the student is exempt from physical education) must be earned. No more than 4 semester credit hours of physical education activity classes may be counted toward any degree. A cumulative grade point average of 2.00 or higher for all courses taken and for the courses which comprise the area of emphasis or specialization must be achieved. Some programs have additional GPA requirements.

Residency

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

Vocational Credits

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

Double Emphasis Within a Degree

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

Minimum Credit for a Second Associate Degree

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

Associate of Arts (A.A.) and Associate of Science (A.S.) 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 General Education Core Transfer Curriculum and will thus meet the lower-division general education requirements of most baccalaureate degree programs in Colorado. A grade of "C" or better is required in EACH core course in order to be accepted for transfer under the Core Transfer agreements. Course work for the A.A. or A.S. degree, then, includes:

1. General Education
2. Discipline area classes (emphasis), as detailed in the appropriate School Program section of this catalog or as developed in consultation with a faculty adviser
3. Physical education requirements
4. Electives

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

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

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

Associate of Arts General Education Core Transfer Curriculum Requirements

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

		Course Credits	Group Credits
a) 9 semester hours in English and Speech:			**9**
English			
ENGW 111, 112	English Composition	3,3	
Speech			
SPCH 102	Speechmaking	3	

		Course Credits	Group Credits
b) 7-10 semester hours in Mathematics (minimum of 3 semester hours) and Science (minimum of 4 semester hours) chosen from the following:			
Mathematics/Statistsics			**3**
MATH 113	College Algebra	4	
MATH 121	Mathematical Foundations of Business	3	
MATH 146	Calculus for Biological Sciences	5	
MATH 151	Calculus I	5	
MATH 152	Calculus II	5	
Statistics			
STAT 200	Probability and Statistics	3	
SCIENCE			**4**
Biology			
BIOL 101, 101L	General Biology and Laboratory	2,1	
BIOL 102, 102L	General Biology and Laboratory	2,1	
Both the lecture and laboratory must be taken in all courses having both, as listed above, if general education credit is to be received.			
Chemistry			
CHEM 121, 121L	Introductory Inorganic Chemistry and Laboratory	4,1	
CHEM 122, 122L	Introduction to Organic Chemistry and Laboratory	4,1	
CHEM 131, 131L	General Chemistry and Laboratory	4,1	
CHEM 132, 132L	General Chemistry and Laboratory	4,1	
Both the lecture and laboratory must be taken in all courses having both, as listed above, if general education credit is to be received.			
Geology			
GEOL 111, 111L	Principles of Physical Geology and Laboratory	4,1	
GEOL 112, 112L	Principles of Historical Geology 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.			
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 121	Classical Physics I	4	
PHYS 223, 223L	Classical Physics III and Experimental Electromagnetism Laboratory	3,1	
Both the lecture and laboratory must be taken in all courses having both, as listed above, if general education credit is to be received.			
c) 9 semester hours of Social and Behavioral Sciences chosen from the following courses. A minimum of two different disciplines required.			
SOCIAL AND BEHAVIORAL SCIENCE			**9**
Anthropology			
ANTH 101	Physical Anthropology	3	
ANTH 102	Cultural Anthropology	3	
Economics			
ECON 201	Principles of Macroeconomics	3	
ECON 202	Principles of Microeconomics	3	
Geography			
GEOG 103	World Regional Geography	3	

		Course Credits	Group Credits
History			
HIST 101, 102	Western Civilizations	3,3	
HIST 131, 132	United States History	3,3	
Political Science			
POLS 101	American Government	3	
Psychology			
PSYC 121, 122	General Psychology	3,3	
Sociology			
SOCO 260	General Sociology	3	
SOCO 264	Social Problems	3	

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

HUMANITIES			**9**
Art			
ARTE 211	Art History: Ancient-1300	3	
ARTE 212	Art History: 1300-1900	3	
French			
FLAF 111, 112	First-Year French I and II	3,3	
FLAF 251, 252	Second-Year French I and II	3,3	
German			
FLAG 111, 112	First-Year German I and II	3,3	
FLAG 251, 252	Second-Year German I and II	3,3	
Literature			
ENLI 131, 132	World Literature I and II	3,3	
ENLI 141	Introduction to Literature — Fiction	3	
ENLI 142	Introduction to Literature — Poetry	3	
Music			
MUSA 220	Music Appreciation	3	
Philosophy			
PHIL 275	Introduction to Logic	3	
Spanish			
FLAS 111, 112	First-Year Spanish I and II	3,3	
FLAS 251, 252	Second-Year Spanish I and II	3,3	

In addition, the physical education requirement must be met — see "Physical Education" under this "Graduation Requirements" section.

Associate of Science General Education Core Transfer Curriculum Requirements

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

		Course Credits	Group Credits
a) 9 semester hours in English and Speech:			**9**
English			
ENGW 111, 112	English Composition	3,3	
Speech			
SPCH 102	Speechmaking	3	

		Course Credits	Group Credits
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	Mathematical Foundations of Business	3	
MATH 146	Calculus for Biological Sciences	5	
MATH 151	Calculus I	5	
MATH 152	Calculus II	5	
SCIENCE			**8**
Biology			
BIOL 101, 101L	General Biology and Laboratory	2,1	
BIOL 102, 102L	General Biology and Laboratory	2,1	
Both the lecture and laboratory must be taken in all courses having both, as listed above, if general education credit is to be received.			
Chemistry			
CHEM 131, 131L	General Chemistry and Laboratory	4,1	
CHEM 132, 132L	General Chemistry and Laboratory	4,1	
Both the lecture and laboratory must be taken in all courses having both, as listed above, if general education credit is to be received.			
Geology			
GEOL 111, 111L	Principles of Physical Geology and Laboratory	4,1	
GEOL 112, 112L	Principles of Historical Geology 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.			
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 121	Classical Physics I	4	
PHYS 223, 223L	Classical Physics III and Experimental Electromagnetism Laboratory	3,1	
Both the lecture and laboratory must be taken in all courses having both, as listed above, if general education credit is to be received.			
c) 6 semester hours of Social and Behavioral Sciences chosen from the following courses. A minimum of two different disciplines required.			
SOCIAL AND BEHAVIORAL SCIENCE			**6**
Anthropology			
ANTH 101	Physical Anthropology	3	
ANTH 102	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	

		Course Credits	Group Credits
Psychology			
PSYC 121, 122	General Psychology	3,3	
Sociology			
SOCO 260	General Sociology	3	
SOCO 264	Social Problems	3	

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

HUMANITIES			**6**
Art			
ARTE 211	Art History: Ancient-1300	3	
ARTE 212	Art History: 1300-1900	3	
French			
FLAF 111, 112	First-Year French I and II	3,3	
FLAF 251, 252	Second-Year French I and II	3,3	
German			
FLAG 111, 112	First-Year German I and II	3,3	
FLAG 251, 252	Second-Year German I and II	3,3	
Literature			
ENLI 131, 132	World Literature I and II	3,3	
ENLI 141	Introduction to Literature — Fiction	3	
ENLI 142	Introduction to Literature — Poetry	3	
Music			
MUSA 220	Music Appreciation	3	
Philosophy			
PHIL 275	Introduction to Logic	3	
Spanish			
FLAS 111, 112	First-Year Spanish I and II	3,3	
FLAS 251, 252	Second-Year Spanish I and II	3,3	

In addition, the physical education requirement must be met — see "Physical Education" under this "Graduation Requirements" section.

Non-Degree Transfer Programs:

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

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

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

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

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

See the General Education lists in this catalog for baccalaureate degrees, and for the Associate of Arts degree and Associate of Science degree. The six hours required here may be chosen from Social or Behavioral Science or Literature from any of the three lists.

2. English — six semester hours, as set forth in the specific A.A.S. program requirements.
3. Physical education requirements.
4. The remaining requirements and electives found under the specific program in the "Program" section of this catalog.
5. Additional requirements apply for some degrees. See specific program requirements.
6. The number of courses allowed from Occupational Education programs vary according to the program chosen.

Certificate Requirements

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

Teacher Certification

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

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

PROGRAMS OF STUDY

This section consists of programs of study listed by school in alphabetical order. Degree requirements are specified for each program followed by suggested course sequencing for the first two years of study (or one year of study in the case of certificate programs). The degree requirements are divided into General Education, Core, Emphasis, and Elective blocks. For further information on this concept, see "Special Features of Mesa State College's Baccalaureate Degree Program" under the *Degrees and Programs* section of this catalog.

Program Sheet

A program sheet has been prepared for each degree or certificate offered at Mesa State College specifying in detail the exact course requirements for each degree or certificate. Individual schools maintain program sheets for the degrees and certificates offered in their school. Students are urged to consult their advisers to obtain a program sheet upon enrolling at Mesa State. It is the student's responsibility to maintain the program sheet demonstrating compliance with the degree requirements. A program sheet must accompany the petition to graduate and be filed with the Registrar in order for a student to be considered for graduation. Refer to the *Graduation Requirements* section of this catalog for further details.

Overload

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

Independent Study

Independent study permits the motivated student an opportunity to expand his or her body of knowledge beyond the scope of the required curriculum. It endeavors to foster qualities of self initiative, organizational skills, self disipline 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 certificate and AAS programs and only in those disciplines listed in the "Course Descriptions" section of this catalog.

To be eligible for Independent Study, a student must have a minimum of eight semester credit hours in the discipline of the Independent Study area, as well as a 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 of the School issuing credit must approve any exceptions.

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

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

Topics Courses

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.

Preparatory Courses

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

Students who have passed any ENGW class numbered 100 or above will not be permitted to register *for credit* in any ENGW class numbered below 100. Only the Dean of the School of Technoloy may approve exceptions to this for students in vocational programs.

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

Course Descriptions

A detailed description of all courses offered at Mesa State College follows this program section.

Complete Discipline Index

Subjects (disciplines) offered by Mesa State College are listed below alphabetically followed by the current course prefix, the beginning page number of individual programs and course descriptions, and the school holding academic responsibility for the subject.

*School

BUS — Business
H&FA — Humanities and Fine Arts
TECH — Techology
NS&M — Natural Sciences and Mathematics
NURS — Nursing and Allied Health
S&BS — Social and Behavioral Sciences

SCHOOL OF BUSINESS

Laurence W. Mazzeno, Acting Dean

Departments and Faculties

Accounting and Computer Information Systems
P. Bettelli, E. Boehler, J. Buckley, D. Mariner, B. McMechen, D. Rogers (Chair) G. Wilson

Business Administration
D. Dickson, E. Mallory (Chair), D. Manning, B. Mayer, M. Myers, H.B. McIntire, T. Ralser, M. Slauson, M. Zimmerer

Office Administration
T. Capps (Director), M. Green

Each student seeking a degree or certificate must obtain a program sheet from his or her faculty adviser or from the Office of the Dean of the School of Business listing specific requirements for the degree sought. The School of Business offers academic programs leading to the following baccalaureate (4-year) degrees, associate (2-year) degrees, and certificate (9-month) programs with the areas of study emphasis indicated:

BACHELOR OF SCIENCE IN ACCOUNTING

Areas of Emphasis:
- Business Computer Information Systems
- Managerial Accounting
- Public Accounting

BACHELOR OF BUSINESS ADMINISTRATION

Areas of Emphasis:
- Administrative Office Management
- Business Economics
- Business Computer Information Systems
- Business Software Engineering
- Finance
- Management
- Marketing
- Personnel Management

ASSOCIATE OF ARTS

Areas of Emphasis:
- Business Administration
- Office Administration

ASSOCIATE OF APPLIED SCIENCE

- Business Computer Information Systems
- Office Supervision and Management
  - Accounting Technician
  - Administrative Secretary
  - Legal Secretary
  - Medical Secretary
- Travel, Recreation and Hospitality Management

CERTIFICATES OF OCCUPATIONAL PROFICIENCY

Office Supervision and Management
Clerical
Medical Office Assistant

CERTIFICATE

*Legal Assistant
*Check with Office of Continuing Education for details.

The following is a list of areas of study emphases available (together with degrees or certificates offered and reference to the catalog page on which detailed information can be found):

Areas of Study Emphases Available	*Degrees/Certificates*	*Details*
Accounting	AAS, BS	p. 64
Business Administration	AA, AAS, BBA, Certificate	p. 67
Office Supervision & Management	AA, AAS, Certificate	p. 79
Travel, Recreation and Hospitality Management	AAS	p. 77

The following are course requirements for the certificate, associate and first two years of the baccalaureate programs: SPECIFIC INFORMATION CONCERNING THE JUNIOR AND SENIOR YEAR COURSE REQUIREMENTS FOR BACCALAUREATE PROGRAMS CAN BE OBTAINED FROM THE ACADEMIC ADVISER OR FROM THE ACADEMIC DEPARTMENT OFFERING THE PROGRAM.

ACCOUNTING: BUSINESS COMPUTER INFORMATION SYSTEMS
(Bachelor of Science in Accounting)

DEGREE REQUIREMENTS:

1. *General Education:* (A minimum of 40 hrs. plus 4 hrs. physical education)
   ENGW 111 and 112 or 115 (6)
   *Biology and Psychology (8-9)
   *Humanities and Fine Arts (8-9)
   *Natural Sciences and Math (8-9)
   *Social Sciences (8-9)
   Physical Ed. Activity (4)

2. *Required Core Courses:* (40 hrs.)

ACCT 201	(3)	BUGB 352	(3)
ACCT 202	(3)	CISB 102	(1)
ACCT 221	(4)	CISB 103	(1)
ACCT 222	(4)	CISB 105	(1)
ACCT 401	(3)	CISB 205	(3)
ACCT 441	(5)	MANG 201	(3)
BUGB 351	(3)	MANG 491	(3)

3. *Required Emphasis Courses:* (25 hrs.)

ACCT 331	(3)	CISB 131	(3)
ACCT 332	(3)	CISB 231	(3)
ACCT 411	(3)	CISB 442	(3)
ACCT 412	(3)	CISB 471	(3)
CISB 104	(1)		

4. *Electives:* (15 hrs. — minimum of 6 hrs. must be upper division)

5. *Courses that need to be taken in general education or as electives:*

ECON 201	(3)	MATH 113 or higher	(3)
ECON 202	(3)	STAT 214	(3)

SUGGESTED COURSE SEQUENCING (first two of the four years):

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ACCT 201 Prin of Accounting I	3	ACCT 202 Prin of Accounting II	3
CISB 102 Computer Literacy	1	CISB 104 BASIC Programming	1
CISB 103 Computer Concepts	1	CISB 105 Intro to Bus Software	1
ENGW 111 English Composition	3	ENGW 112 English Composition or ENGW 115 Technical Writing	3
*MATH 113 College Algebra or a higher Math	3-4	*Math or Physical Science	3
*Psychology or Biology	3	*Psychology or Biology	3
		*General Ed (Suggest SPCH 102)	3

Second Year:

Fall Semester		*Spring Semester*	
CISB 131 COBOL Programming I	3	*ECON 202 Prin of Microeconomics	3
*ECON 201 Prin of Macroeconomics	3	CISB 231 COBOL Programming II	3
MANG 201 Prin of Management	3	ACCT 222 Intermediate Accounting II	4
*General Ed (Suggest STAT 214)	3	CISB 205 Adv Business Software	3
ACCT 221 Intermediate Accounting I	4	*Psychology or Biology	3
PE Activity, 1st mod	1	PE Activity, 1st mod	1
PE Activity, 2nd mod	1	PE Activity, 2nd mod	1

*See pp. 49-52 for listing of approved general education courses.

ACCOUNTING: MANAGERIAL ACCOUNTING

(Bachelor of Science in Accounting)

DEGREE REQUIREMENTS:

1. *General Education:* (A minimum of 40 hrs. plus 4 hrs. physical education)

ENGW 111 and 112 or 115	(6)
*Biology and Psychology	(8-9)
*Humanities and Fine Arts	(8-9)
*Natural Sciences and Math	(8-9)
*Social Sciences	(8-9)
Physical Ed. Activity	(4)

2. *Required Core Courses:* (40 hrs.)

ACCT 201	(3)	BUGB 352	(3)
ACCT 202	(3)	CISB 102	(1)
ACCT 221	(4)	CISB 103	(1)
ACCT 222	(4)	CISB 105	(1)
ACCT 401	(3)	CISB 205	(3)
ACCT 441	(5)	MANG 201	(3)
BUGB 351	(3)	MANG 491	(3)

3. *Required Emphasis Courses:* (24 hrs.)

ACCT 331	(3)	FINA 339	(4)
ACCT 332	(3)	MANG 421	(3)
ACCT 423	(3)	MANG Upper Division	(3)
ACCT 442	(5)		

4. *Electives:* (16 hrs.)

5. *Courses that need to be taken in general education or as electives:*

ECON 210	(3)	MATH 113 or higher	(3)
ECON 202	(3)	STAT 214	(3)

SUGGESTED COURSE SEQUENCING (first two of the four years):

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ACCT 201 Prin of Accounting I	3	ACCT 202 Prin of Accounting II	3
CISB 102 Computer Literacy	1	CISB 105 Intro to Bus Software	1
CISB 103 Computer Concepts	1	ENGW 112 English Composition or ENGW 115 Technical Writing	3
ENGW 111 English Composition	3		
*MATH 113 College Algebra or a higher Math	3-4	*Math or Physical Science	3
*Psychology or Biology	3	*Psychology or Biology	3
		*General Ed (Suggest SPCH 102)	3

Second Year:

Fall Semester		*Spring Semester*	
ECON 201 Prin of Macroeconomics	3	ECON 202 Prin of Microeconomics	3
ACCT 221 Intermediate Accounting I	4	*Psychology or Biology	3
*Literature	3	*Social Science	3
MANG 201 Prin of Management	3	CISB 205 Adv Business Software	3
*General Ed (Suggest STAT 214)	3	ACCT 222 Intermediate Accounting II	4
PE Activity, 1st mod	1	PE Activity, 1st mod	1
PE Activity, 2nd mod	1	PE Activity, 2nd mod	1

*See pp. 49-52 for listing of approved general education courses.

ACCOUNTING: PUBLIC ACCOUNTING

(Bachelor of Science in Accounting)

DEGREE REQUIREMENTS:

1. *General Education:* (A minimum of 40 hrs. plus 4 hrs. physical education)

ENGW 111 and 112 or 115	(6)
*Biology and Psychology	(8-9)
*Humanities and Fine Arts	(8-9)
*Natural Sciences and Math	(8-9)
*Social Sciences	(8-9)
Physical Ed. Activity	(4)

2. *Required Core Courses:* (40 hrs.)

ACCT 201	(3)	BUGB 352	(3)
ACCT 202	(3)	CISB 102	(1)
ACCT 221	(4)	CISB 103	(1)
ACCT 222	(4)	CISB 105	(1)
ACCT 401	(3)	CISB 205	(3)
ACCT 441	(5)	MANG 201	(3)
~~ACCT~~ BUGB 351	(3)	MANG 491	(3)

3. *Required Emphasis Courses:* (20 hrs.)

ACCT 331	(3)	ACCT 411	(3)
ACCT 332	(3)	ACCT 412	(5)
ACCT 402	(3)	ACCT 442	(3)

4. *Electives:* (18 hrs. — minimum of 3 hrs. must be upper division)

5. *Courses that need to be taken in general education or as electives:*

ECON 201	(3)	MATH 113 or higher	(3)
ECON 202	(3)	STAT 214	(3)

SUGGESTED COURSE SEQUENCING (first two of the four years):

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ACCT 201 Prin of Accounting I	3	ACCT 202 Prin of Accounting II	3
CISB 102 Computer Literacy	1	CISB 105 Intro to Bus Software	1
CISB 103 Computer Concepts	1	ENGW 112 English Composition or ENGW 115 Technical Writing	3
ENGW 111 English Composition	3	*Math or Physical Science	3
*MATH 113 College Algebra or a higher Math	3-4	*Psychology or Biology	3
*Psychology or Biology	3	*General Ed (Suggest SPCH 102)	3

Second Year:

Fall Semester		*Spring Semester*	
ECON 201 Prin of Macroeconomics	3	ECON 202 Prin of Microeconomics	3
*Literature	3	*Literature	3
*Social Science	3	*Psychology or Biology	3
MANG 201 Prin of Management	3	CISB 205 Adv Business Software	3
ACCT 221 Intermediate Accounting	4	ACCT 222 Intermediate II	4
PE Activity, 1st mod	1	PE Activity, 1st mod	1
PE Activity, 2nd mod	1	PE Activity, 2nd mod	1

*See pp. 49-52 for listing of approved general education courses.

BUSINESS ADMINISTRATION: ADMINISTRATIVE OFFICE MANAGEMENT

(Bachelor of Business Administration)

DEGREE REQUIREMENTS:

1. *General Education:* (A minimum of 40 hrs. plus 4 hrs. physical education)

ENGW 111 and 112 or 115	(6)
*Biology and Psychology	(8-9)
*Humanities and Fine Arts	(8-9)
*Natural Sciences and Math	(8-9)
*Social Sciences	(8-9)
Physical Ed. Activity	(4)

2. *Required Core Courses:* (40 hrs.)

ACCT 201	(3)	CISB 103	(1)
ACCT 202	(3)	CISB 104 or 105	(1)
ACCT 311	(3)	FINA 339	(4)
BUGB 101	(3)	MANG 201	(3)
BUGB 351	(3)	MANG 491	(3)
BUGB 352	(3)	MARK 231	(3)
CISB 102	(1)	6 additional hours Bus electives	(6)

3. *Required Emphasis Courses:* (22 hrs.)

OFAD courses approved by adviser	(16)
Upper Division Business Courses	(6)

4. *Electives:* (18 hrs. upper division)

5. *Courses that need to be taken in general education or as electives:*

ECON 201	(3)	MATH 121	(3)
ECON 202	(3)	STAT 214	(3)

SUGGESTED COURSE SEQUENCING (first two of the four years):

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
CISB 102 Computer Literacy	1	ENGW 112 English Composition or ENGW 115 Technical Writing	3
CISB 103 Computer Concepts	1	*Humanities	3
CISB 104 BASIC Programming or CISB 105 Intro to Bus Software	1	MANG 201 Prin of Management	3
ENGW 111 English Composition	3	OFAD Courses	3
OFAD Courses	9	BUGB 101 Intro to Bus	3
PE Activity	1	PE Activity	1

Second Year:

Fall Semester		*Spring Semester*	
ACCT 201 Prin of Accounting I	3	ACCT 202 Prin of Accounting II	3
ECON 201 Prin of Macroeconomics	3	ECON 202 Prin of Microeconomics	3
*Psychology or Biology	3	MATH 113 College Algebra	4
*Social Science	3	OFAD Course	2
SPCH 102 Speechmaking	3	*Psychology or Biology	3
OFAD Course	2	PE Activity	1

*See pp. 49-52 for listing of approved general education courses.

BUSINESS ADMINISTRATION

(Associate of Arts)

DEGREE REQUIREMENTS:

1. *General Education:* (34 hrs.)
   - ENGW 111 and 112 (6)
   - SPCH 102 (3)
   - *Mathematics (3)
   - *Science (4)
   - *Social and Behavioral Sciences (2 disciplines) (9)
   - *Humanities (9)
2. *Graduation Requirements:*
   - Physical Education (4)
3. *Business Course Requirements;* (15 hrs.)

ACCT 201	(3)	CISB 102	(1)
ACCT 202	(3)	CISB 103	(1)
BUGB 101	(3)	CISB 104 or 105	(1)
BUGB 211	(3)		

4. *Electives:* (12-13 hrs.)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
BUGB 101 Intro to Business	3	BUGB 211 Bus Communications	3
Elective (Suggest SPCH 102 Speechmaking)	3	CISB 102 Computer Literacy	1
ENGW 111 English Composition	3	CISB 103 Computer Concepts	1
MATH 113 College Algebra or MATH 121 Math Found of Bus	3-4	CISB 104 BASIC Programming or CISB 105 Intro to Bus Software	1
*Psychology or Biology	3	ENGW 112 English Composition	3
PE Activity	1	MATH 121 Math Foundations of Bus or STAT 200 Statistics	3
		*Psychology or Biology	3
		PE Activity	1

Second Year:

Fall Semester		*Spring Semester*	
ACCT 201 Prin of Accounting I	3	ACCT 202 Prin of Accounting II	3
ECON 201 Prin of Macroeconomics	3	ECON 202 Prin of Microeconomics	3
Elective (Suggest MANG 201 Prin of Management)	3	Electives	6
Elective	3	*Literature	3
Literature	3	PE Activity	1
PE Activity	1		

*See pp. 53-55 for listing of approved general education courses.

BUSINESS ADMINISTRATION: BUSINESS/ECONOMICS

(Bachelor of Business Administration)

DEGREE REQUIREMENTS:

1. *General Education:* (A minimum of 40 hrs. plus 4 hrs. physical education)

ENGW 111 and 112 or 115	(6)
*Biology and Psychology	(8-9)
*Humanities	(8-9)
*Natural Sciences and Math	(8-9)
*Social Sciences	(8-9)
Physical Ed. Activity	(4)

2. *Required Core Courses:* (40 hrs.)

ACCT 201	(3)	CISB 103	(1)
ACCT 202	(3)	CISB 104 or 105	(1)
ACCT 211, 311, or 331	(3)	FINA 339	(4)
BUGB 101	(3)	MANG 201	(3)
BUGB 351	(3)	MANG 491	(3)
BUGB 352	(3)	MARK 231	(3)
CISB 102	(1)	6 additional hours of Bus electives	(6)

3. *Required Emphasis Courses:* (24 hrs.)

ECON 301	(3)	ECON 343	(3)
ECON 310	(3)	ECON 401	(3)
ECON 320	(3)	ECON 410	(3)
ECON 342	(3)	MANG 471	(3)

4. *Electives:* (15-16 hrs. — 12 hrs. selected from designated options and 3-4 hrs. general electives)

5. *Courses that need to be taken in general education or as electives:*

ECON 201	(3)	MATH 121	(3)
ECON 202	(3)	STAT 214	(3)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
BUGB 101 Intro to Business	3	ENGW 113 English Composition	3
CISB 102 Computer Literacy	1	*Humanities	3
CISB 103 Computer Concepts	1	MANG 201 Prin of Management	3
CISB 104 BASIC Programming or CISB 105 Intro to Bus Software	1	MATH 121 Math Foundations of Business	3
ENGW 111 English Composition	3	*Psychology or Biology	3
MATH 113 College Algebra or MATH 127 Math of Finance	3-4		
*Psychology or Biology	3		
PE Activity, 1st mod	1		
PE Activity, 2nd mod	1		

Second Year:

Fall Semester	*Spring Semester*
ACCT 201 Prin of Accounting I 3	ACCT 202 Prin of Accounting II 3
ECON 201 Prin of Macroeconomics 3	ECON 202 Prin of Microeconomics 3
*Humanities 3	*Humanities 3
MARK 231 Prin of Marketing 3	*Psychology or Biology 3
STAT 214 Business Statistics 3	*Social Science 3
PE Activity, 1st mod 1	PE Activity, 2nd mod 1

*See pp. 49-52 for listing of approved general education courses.

BUSINESS COMPUTER INFORMATION SYSTEMS

(Associate in Applied Science)

DEGREE REQUIREMENTS:

1. *General Education:* (12 hrs. plus 4 hrs. physical education)
   - ENGW 111 and 112 or 115 (6)
   - *Social or Behavioral Science or Literature (6)
   - Physical Ed. Activity (4)

2. *Required Core Courses:* (25 hrs.)

ACCT 201	(3)	CISB 131	(3)
ACCT 202	(3)	CISB 205	(3)
CISB 102	(1)	CISB 231	(3)
CISB 103	(1)	MANG 201	(3)
CISB 104	(1)	Business electives approved	
CISB 105	(1)	by adviser	(3)

3. *Other Course Requirements:* (6 hrs.)
   - MATH 127 (3)
   - SPCH 102 (3)

4. *Electives:* (17 hrs.)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Con Hrs*
ACCT 201 Prin of Accounting I	3	47
CISB 102 Computer Literacy	1	16
CISB 103 Computer Concepts	1	16
CISB 104 BASIC Programming	1	16
CISB 105 Intro to Bus Software	1	16
Elective (Suggest MATH 121 Math Foundations of Bus)	3	47
ENGW 111 English Composition	3	47
MANG 201 Prin of Management	3	47
PE Activity	1	24
		276

Spring Semester	*Sem Hrs*	*Con Hrs*
ACCT 202 Prin of Accounting II	3	47
Elective	3	47
ENGW 112 English Composition or ENGW 115 Technical Writing	3	47
MATH 127 Math of Finance	3	47
SPCH 102 Speechmaking	3	47
PE Activity	1	24
		259

Second Year:

Fall Semester		
Elective	3	47
Electives: (Suggest CSCI 131 FORTRAN Program.)	3	47
STAT 214 Business Statistics	3	47
CISB 131 COBAL Program	3	47
*Social Science (Suggest ECON 201 Prin of Macroeconomics)	3	47
PE Activity, 1st mod	1	24
		259

Spring Semester		
Business electives approved by adviser	6	94
CISB 205 Adv Business Software	3	47
CISB 231 COBOL Program. II	3	47
*Social Science (Suggest ECON 202 Prin of Microeconomics)	3	47
PE Activity	1	24
		259

*See pp. 57-58 for listing of approved general education courses.

BUSINESS ADMINISTRATION: BUSINESS COMPUTER INFORMATION SYSTEMS

(Bachelor of Business Administration)

DEGREE REQUIREMENTS:

1. *General Education:* (A minimum of 40 hrs. plus 4 hrs. physical education)
   - ENGW 111 and 112 or 115 (6)
   - *Biology and Psychology (8-9)
   - *Humanities and Fine Arts (8-9)
   - *Natural Sciences and Math (8-9)
   - *Social Sciences (8-9)
   - Physical Ed. Activity (4)
2. *Required Core Courses:* (40 hrs.)

ACCT 201	(3)	CISB 103	(1)
ACCT 202	(3)	CISB 104	(1)
ACCT 221, 311 or 331	(3)	FINA 339	(4)
BUGB 101	(3)	MANG 201	(3)
BUGB 351	(3)	MANG 491	(3)
BUGB 352	(3)	MARK 231	(3)
CISB 102	(1)	Business Electives	(6)

3. *Required Emphasis Courses:* (22 hrs.)

CISB 105	(1)	CISB 392	(3)
CISB 131	(3)	CISB 442	(3)
CISB 205	(3)	CISB 471	(3)
CISB 231	(3)	MANG 331	(3)

4. *Electives:* (18 hrs. 12 hrs. must be upper division)
5. *Courses that need to be taken in general education or as electives:*

ECON 201	(3)	MATH 121	(3)
ECON 202	(3)	STAT 214	(3)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ACCT 201 Prin of Accounting I	3	ACCT 202 Prin of Accounting II	3
BUGB 101 Intro to Business	3	CISB 105 Intro to Bus Software	1
CISB 102 Computer Literacy	1	ENGW 112 English Composition or ENGW 115 Technical Writing	3
CISB 103 Computer Concepts	1	MANG 201 Prin of Management	3
CISB 104 BASIC Programming	1	*MATH 121 Math Foundations of Bus	3
ENGW 111 English Composition	3	*SPCH 102 Speechmaking	3
*MATH 113 College Algebra or MATH 127 Math of Finance	3-4	PE Activity	1
PE Activity	1		

Second Year:

Fall Semester		*Spring Semester*	
*Biology and Psychology	6	*Biology or Psychology	3
CISB 131 COBOL Programming I	3	Business Electives	3
*Social Science (Suggest ECON 201 Prin of Macroeconomics)	3	CISB 205 Adv Business Software	3
MARK 231 Prin of Marketing	3	CISB 231 COBOL Programming II	3
PE Activity	1	*Social Science (Suggest ECON 202 Prin of Microeconomics)	3
		PE Activity	1

*See pp. 49-52 for listing of approved general education courses.

BUSINESS ADMINISTRATION: FINANCE

(Bachelor of Business Administration)

DEGREE REQUIREMENTS:

1. *General Education:* (A minimum of 40 hrs. plus 4 hrs. physical education)

ENGW 111 and 112 or 115	(6)
*Biology and Psychology	(8-9)
*Humanities and Fine Arts	(8-9)
*Natural Sciences and Math	(8-9)
*Social Sciences	(8-9)
Physical Ed. Activity	(4)

2. *Required Core Courses:* (40 hrs.)

ACCT 201	(3)	CISB 103	(1)
ACCT 202	(3)	CISB 104 or 105	(1)
ACCT 221, 311 or 331	(3)	FINA 339	(4)
BUGB 101	(3)	MANG 201	(3)
BUGB 351	(3)	MANG 491	(3)
BUGB 352	(3)	MARK 231	(3)
CISB 102	(1)	Business Electives	(6)

3. *Required Emphasis Courses:* (24 hrs.)

ECON 310	(3)	FINA 441	(3)
ECON 343	(3)	MANG 331	(3)
ECON 410	(3)	Select one from:	
FINA 338	(3)	ACCT 423	
FINA 439	(3)	ECON 342	
		or MANG 421	(3)

To utilize the total resources of the College and provide cross-disciplinary opportunities and exposure for students, the Finance program draws upon existing courses in other disciplines. This combination provides a well rounded finance emphasis.

4. *Electives:* (15 hrs. — minimum of 9 hrs. must be upper division)

5. *Courses that need to be taken in general education or as electives:*

ECON 201	(3)	MATH 121	(3)
ECON 202	(3)	STAT 214	(3)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
BUGB 101 Intro to Business	3	ENGW 112 English Composition or ENGW 115 Technical Writing	3
CISB 102 Computer Literacy	1	*Humanities	3
CISB 103 Computer Concepts	1	Business Elective	3
CISB 104 BASIC Programming or CISB 105 Intro to Bus Software	1	MATH 121 Math Foundations of Bus	3
ENGW 111 English Composition	3	*Psychology or Biology	3
MATH 113 College Algebra or MATH 127 Math of Finance	3-4	PE Activity	1
*Social Science	3		
PE Activity	1		

Second Year:

Fall Semester	*Spring Semester*
ACCT 201 Prin of Accounting I 3	ACCT 202 Prin of Accounting II 3
ECON 201 Prin of Macroeconomics 3	ECON 202 Prin of Microeconomics 3
MARK 231 Prin of Marketing 3	MANG 201 Prin of Management 3
*Psychology or Biology 3	Business Elective 3
STAT 214 Business Statistics 3	*Psychology or Biology 3
PE Activity, 1st mod 1	PE Activity, 1st mod 1

*See pp. 49-52 for listing of approved general education courses.

BUSINESS ADMINISTRATION: MANAGEMENT

(Bachelor of Business Administration)

DEGREE REQUIREMENTS:

1. *General Education:* (A minimum of 40 hrs. plus 4 hrs. physical education)

ENGW 111 and 112 or 115	(6)
*Biology and Psychology	(8-9)
*Humanities and Fine Arts	(8-9)
*Natural Sciences and Math	(8-9)
*Social Sciences	(8-9)
Physical Ed. Activity	(4)

2. *Required Core Courses:* (40 hrs.)

ACCT 201	(3)	CISB 103	(1)
ACCT 202	(3)	CISB 104 or 105	(1)
ACCT 221, 311 or 331	(3)	FINA 339	(4)
BUGB 101	(3)	MANG 201	(3)
BUGB 351	(3)	MANG 491	(3)
BUGB 352	(3)	MARK 231	(3)
CISB 102	(1)	Business Electives	(6)

3. *Required Emphasis Courses:* (21 hrs.)

MANG 300	(3)	MANG 302	(3)
MANG 301	(3)	Upper Division MANG Electives	(12)

4. *Electives:* (18 hrs. — minimum of 12 hrs. must be upper division)

5. *Courses that need to be taken in general education or as electives:*

ECON 201	(3)	MATH 121	(3)
ECON 202	(3)	STAT 214	(3)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
BUGB 101 Intro to Business	3	ENGW 112 English Composition or ENGW 115 Technical Writing	3
CISB 102 Computer Literacy	1	*Humanities	3
CISB 103 Computer Concepts	1	Business Elective	3
CISB 104 BASIC Programming or CISB 105 Intro to Bus Software	1	MATH 121 Math Foundations of Bus	3
ENGW 111 English Composition	3	*Psychology or Biology	3
MATH 113 College Algebra or MATH 127 Math of Finance	3-4		
*Psychology or Biology	3		

Second Year:

Fall Semester		*Spring Semester*	
ACCT 201 Prin of Accounting I	3	ACCT 202 Prin of Accounting II	3
ECON 201 Prin of Macroeconomics	3	ECON 202 Prin of Microeconomics	3
Business Elective	3	MANG 201 Prin of Management	3
MARK 231 Prin of Marketing	3	*Psychology or Biology	3
*Social Science	3	STAT 214 Business Statistics	3
PE Activity, 1st mod	1	PE Activity, 1st mod	1
PE Activity, 2nd mod	1	PE Activity, 2nd mod	1

*See pp. 49-52 for listing of approved general education courses.

BUSINESS ADMINISTRATION: MARKETING

(Bachelor of Business Administration)

DEGREE REQUIREMENTS:

1. *General Education:* (A minimum of 40 hrs. plus 4 hrs. physical education)

ENGW 111 and 112 or 115	(6)
*Biology and Psychology	(8-9)
*Humanities and Fine Arts	(8-9)
*Natural Sciences and Math	(8-9)
*Social Sciences	(8-9)
Physical Ed. Activity	(4)

2. *Required Core Courses:* (40 hrs.)

ACCT 201	(3)	CISB 103	(1)
ACCT 202	(3)	CISB 104 or 105	(1)
ACCT 221, 311 or 331	(3)	FINA 339	(4)
BUGB 101	(3)	MANG 201	(3)
BUGB 351	(3)	MANG 491	(3)
BUGB 352	(3)	MARK 231	(3)
CISB 102	(1)	Business Electives	(6)

3. *Required Emphasis Courses:* (21 hrs.)

MANG 331	(3)	MARK 432	(3)
MARK 135	(3)	MARK 433	(3)
MARK 232	(3)	Upper Division MANG or MARK Electives	(6)

4. *Electives:* (18 hrs. upper division)

5. *Courses that need to be taken in general education or as electives:*

ECON 201	(3)	MATH 121	(3)
ECON 202	(3)	STAT 214	(3)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
BUGB 101 Intro to Business	3	ENGW 112 English Composition or ENGW 115 Technical Writing	3
CISB 102 Computer Literacy	1	*Humanities	3
CISB 103 Computer Concepts	1	MANG 201 Prin of Management	3
CISB 104 BASIC Programming or CISB 105 Intro to Bus Software	1	MATH 121 Math Foundations of Bus	3
ENGW 111 English Composition	3	*Psychology or Biology	3
MATH 113 College Algebra or MATH 127 Math of Finance	3-4	PE Activity	1
*Psychology or Biology	3		
PE Activity	1		

Second Year:

Fall Semester		*Spring Semester*	
ACCT 201 Prin of Accounting I	3	ACCT 202 Prin of Accounting II	3
ECON 201 Prin of Macroeconomics	3	ECON 202 Prin of Microeconomics	3
Business Elective	3	MARK 232 Advertising	3
MARK 135 Salesmanship	3	*Psychology or Biology	3
MARK 231 Prin of Marketing	3	STAT 214 Business Statistics	3
PE Activity	1	PE Activity	1

*See pp. 49-52 for listing of approved general education courses.

BUSINESS ADMINISTRATION: PERSONNEL MANAGEMENT

(Bachelor of Business Administration)

DEGREE REQUIREMENTS:

1. *General Education:* (A minimum of 40 hrs. plus 4 hrs. physical education)

ENGW 111 and 112 or 115	(6)
*Biology and Psychology	(8-9)
*Humanities and Fine Arts	(8-9)
*Natural Science and Math	(8-9)
*Social Sciences	(8-9)
Physical Education Activity	(4)

2. *Required Core Courses:* (40 hrs.)

ACCT 201	(3)	CISB 103	(1)
ACCT 202	(3)	CISB 104 or 105	(1)
ACCT 221, 311 or 331	(3)	FINA 339	(4)
BUGB 101	(3)	MANG 201	(3)
BUGB 351	(3)	MANG 491	(3)
BUGB 352	(3)	MARK 231	(3)
CISB 102	(1)	Business Electives	(6)

3. *Required Emphasis Courses:* (21 hrs.)

PCGU 420	(3)	MANG 371	(3)
PCGU 422	(3)	PSYC 412	(3)
MANG 301	(3)	Upper Division MANG or other elective approved by adviser	(3)
MANG 351	(3)		

To utilize the total resources of the College and provide cross-disciplinary opportunities and exposure for students, the Personnel program draws upon existing courses in other disciplines. This combination provides a well rounded personnel emphasis.

4. *Electives:* (18 hrs. — minimum of 13 hrs. must be upper division)

5. *Courses that need to be taken in general education or as electives:*

ECON 201	(3)	MATH 121	(3)
ECON 202	(3)	STAT 214	(3)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
BUGB 101 Intro to Business	3	ENGW 112 English Composition or ENGW 115 Technical Writing	3
CISB 102 Computer Literacy	1	*Humanities	3
CISB 103 Computer Concepts	1	MANG 201 Prin of Management	3
CISB 104 BASIC Programming or CISB 105 Intro to Bus Software	1	MATH 121 Math Foundations of Bus	3
ENGW 111 English Composition	3	*Psychology or Biology	3
MATH 113 College Algebra or MATH 127 Math of Finance	3-4	PE Activity	1
*Psychology or Biology	3		
PE Activity	1		

Second Year:

Fall Semester		*Spring Semester*	
ACCT 201 Prin of Accounting I	3	ACCT 202 Prin of Accounting II	3
ECON 201 Prin of Macroeconomics	3	ECON 202 Prin of Microeconomics	3
Business Elective	3	Business Elective	3
MARK 231 Prin of Marketing	3	*Psychology or Biology	3
*Social Science	3	STAT 214 Business Statistics	3
PE Activity	1	PE Activity	1

*See pp. 49-52 for listing of approved general education courses.

BUSINESS ADMINISTRATION: BUSINESS SOFTWARE ENGINEERING

(Bachelor of Business Administration)

DEGREE REQUIREMENTS:

1. *General Education:* (A minimum of 40 hrs. plus 4 hrs. physical education)

ENGW 111 and 112 or 115	(6)
*Biology and Psychology	(8-9)
*Humanities and Fine Arts	(8-9)
*Natural Sciences and Math	(8-9)
*Social Sciences	(8-9)
Physical Ed. Activity	(4)

2. *Required Core Courses:* (40 hrs.)

ACCT 201	(3)	CISB 104	(1)
ACCT 202	(3)	FINA 339	(4)
ACCT 311, 321 or 331	(3)	MANG 201	(3)
BUGB 101	(3)	MANG 491	(3)
BUGB 351	(3)	MARK 231	(3)
BUGB 352	(3)	6 additional hours of Business electives	(6)
CISB 102	(1)		
CISB 103	(1)		

3. *Required Emphasis Courses:* (24 hrs.)

CISB 231	(3)	CSCI 230	(3)
CISB 442	(3)	CSCI 250	(3)
CSCI 111	(3)	CSCI 373	(3)
CSCI 112	(3)	CSCI 460	(3)

4. *Electives:* (16 hrs. with 15 hrs. upper division)

5. *Courses that need to be taken in general education or as an elective:*

ECON 201	(3)	MATH 151	(3)
ECON 202	(3)	STAT 214	(3)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
BUGB 101 Intro to Business	3	CISB 104 BASIC Programming	1
CISB 102 Computer Literacy	1	CISB 105 Intro to Bus Software	1
CISB 103 Computer Concepts	1	CSCI 112 Computer Science II	3
CSCI 111 Computer Science I	3	ENGW 112 English Composition or ENGW 115 Technical Writing	3
ENGW 111 English Composition	3	MANG 201 Prin of Management	3
*Natural Sciences & Math (Suggest MATH 119 Precalculus Math)	5	*Natural Sciences & Math (Suggest MATH 151 Calculus I)	5

Second Year:

Fall Semester		*Spring Semester*	
ACCT 201 Prin of Accounting I	3	ACCT 202 Prin of Accounting II	3
CISB 131 COBOL Programming I	3	*Natural Sciences and Math (Suggest STAT 214 Business Statistics)	3
CSCI 230 Assembly Language Prog	3	CISB 231 COBOL Programming II	3
MARK 231 Prin of Marketing	3	*Psychology and Biology	6
*Psychology or Biology	3	PE Activity, 1st mod	1
PE Activity, 1st mod	1	PE Activity, 2nd mod	1
PE Activity, 2nd mod	1		

*See pp. 49-52 for listing of approved general education courses.

TRAVEL, RECREATION AND HOSPITALITY MANAGEMENT

(Associate of Applied Science)

DEGREE REQUIREMENTS:

1. *General Education:* (12 hrs. plus 4 hrs. physical education)

ENGW 111 and 112 or 115	(6)
ECON 201 or PSYC 121	(3)
GEOG 103	(3)
Additional general education class	(3)
Physical Ed. Activity	(2)

2. *Business Course Requirements:* (21 hrs. other than TRAV Courses.)

ACCT 201 or OFAD 101	(3)	CISB 103	(1)
BUGB 101	(3)	CISB 104 or 105	(1)
BUGB 141	(3)	MANG 201	(3)
BUGB 231	(3)	MARK 231	(3)
CISB 102	(1)		

3. *Travel, Recreation and Hospitality Management Courses:* (27 hrs.)

TRAV 101	(3)	TRAV 201	(3)
TRAV 102	(3)	TRAV 215 or 217	(3)
TRAV 103	(3)	TRAV 299	(12)
TRAV 199	(1)		

4. *Electives:* (9 hrs.)
   Suggested courses:

ACCT 202	(3)	ECON 202 or PSYC 122	(3)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Con Hrs*	*Spring Semester*	*Sem Hrs*	*Con Hrs*
BUGB 101 Intro to Business	3	47	ENGW 112 English Composition or ENGW 115 TEchnical Writing	3	47
BUGB 141 Business Math	3	47	MANG 201 Prin of Management	3	47
ENGW 111 English Composition	3	47	TRAV 102 Travel Industry II	3	47
MARK 231 Prin of Marketing	3	47	TRAV 103 Travel and Tourism Marketing Techniques	3	47
TRAV 101 Travel Industry I	3	47	TRAV 199 Employ Concepts	1	16
PE Activity	1	24	PE Activity	1	24
	16	259		14	228

Summer Session between First and Second Year:

TRAV 299 Internship 12

Second Year:

Fall Semester			*Spring Semester*		
ACCT 201 Prin of Accounting I or OFAD 101 Bookkeep/Small Bus	3	47	BUGB 231 Survey of Busi. Law	3	47
ECON 201 Prin of Macroeconomics or PSYC 121 General Psychology	3	47	CISB 102 Computer Literacy	1	16
General Education Elective	3	47	CISB 103 Computer Concepts	1	16
GEOG 103 World Regional Geog	3	47	CISB 104 BASIC Programming or CISB 105 Intro to Bus Software	1	16
TRAV 201 Management in the Travel Industry I	3	47	Electives	6	94
Electives	3	47	TRAV 215 Computerized Res or TRAV 217 Hotel Operations	3	47
	18	282		15	236

*See pp. 57-58 for listing of approved general education courses.

OFFICE ADMINISTRATION

(Associate of Arts)

DEGREE REQUIREMENTS:

1. *General Education:* (34)

ENGW 111 and 112	(6)
SPCH 102	(3)
*Mathematics	(3)
*Science	(4)
*Social and Behavioral Sciences (2 disciplines)	(9)
Humanities (2 disciplines)	(9)

2. *Graduation Requirements:*

Physical Education	(4)

3. *Business Course Requirements:* (12 hrs.)

ACCT 201	(3)	CISB 103	(1)
BUGB 211	(3)	CISB 104 or 105	(1)
CISB 102	(1)	MANG 201	(3)

4. *Required Emphasis Courses:* (9 hrs.)

OFAD 152	(3)	OFAD 264	(3)
OFAD 201 or 202	(3)		

5. *Electives:* (6 hrs.)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Con Hrs*	*Spring Semester*	*Sem Hrs*	*Con Hrs*
ENGW 111 English Composition	3	47	ENGW 112 English Composition	3	47
MATH (MATH 113 recommended)	4	63	SPCH 102 Speechmaking	3	47
*Soc/Behavior Sciences	3	47	OFAD 152 Doc Format	3	47
CISB 102 Computer Literacy	1	24	OFAD 264 Beg Word Info Process	3	47
CISB 103 Computer Concepts	1	24	Elective	3	47
CISB 104 BASIC Programming or CISB 105 Bus Software	1	24	PE Activity, 1st mod	1	24
PE Activity, 1st mod	1	24	PE Activity, 2nd mod	1	24
PE Acivity, 2nd mod	1	24		17	283
	15	277			

Second Year:

Fall Semester			*Spring Semester*		
*Humanities	3	47	*Science	4	63
*Humanities	3	47	*Humanities	3	47
*Soc/Behav Sci (suggest ECON 201)	3	47	*Soc/Behav Sci (suggest ECON 202)	3	47
ACCT 201 Prin of Accounting I	3	47	OFAD 201 Office Management or OFAD 202 Records Mgmt	3	47
BUGB 211 Business Comm	3	47	Elective	3	47
MANG 201 Prin of Management	3	47		16	251
	18	282			

*See pp. 53-55 for listing of approved general education courses.

OFFICE SUPERVISION AND MANAGEMENT: ACCOUNTING TECHNICIAN

(Associate of Applied Science)

DEGREE REQUIREMENTS:

1. *General Education:* (12 hrs. plus 4 hrs. physical education)

ENGW 111 and 112 or 115	(6)
*Literature, Social or Behavioral Sciences, or Psychology	(6)
Physical Ed. Activity	(4)

2. *Business Course Requirements:* (43 hrs.)

CISB 102	(1)	ACCT 202	(3)
CISB 103	(1)	ACCT 205	(1)
CISB 104 or 105	(1)	BUGB 141 or MATH 113, 121 or 127	(3,4)
OFAD 101	(3)	BUGB 211	(3)
OFAD 201	(3)	BUGB 231	(3)
OFAD 202	(3)	BUGB 241	(3)
OFAD 264	(3)	MANG 121	(3)
OFAD 270	(3)	MANG 201	(3)
ACCT 201	(3)		

3. *Other Course Requirements:* (6 hrs.)

ECON 201	(3)	ECON 202	(3)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Con Hrs*	*Spring Semester*	*Sem Hrs*	*Con Hrs*
CISB 102 Computer Literacy	1	16	ACCT 201 Prin of Accounting I	3	47
CISB 103 Computer Concepts	1	16	ENGW 112 English Composition or ENGW 115 Technical Writing	3	47
CISB 104 BASIC Programming or CISB 105 Intro to Bus Software	1	16	MANG 121 Human Rel. in Bus	3	47
ENGW 111 English Composition	3	47	OFAD 202 Records Management	3	47
*Literature, Social Science or Psychology	3	47	OFAD 264 Beg Info Processing	3	47
OFAD 101 Bkkping for Smal Bus	3	47	PE Activity, 1st mod	1	24
BUGB 141, Business Math or MATH 113 College Algebra or MATH 121 Math Found of Bus or MATH 127 Math of Fin	3-4	47-63	PE Activity, 2nd mod	1	24
PE Activity, 1st mod	1	24		17	283
PE Activity, 2nd mod	1	24			
	17-18	284-300			

Second Year:

Fall Semester			*Spring Semester*		
ACCT 202 Prin of Acct. II	3	47	BUGB 231 Survey of Bus. Law	3	47
ACCT 205 Ten Key Operations	1	16	BUGB 241 Income Tax	3	47
BUGB 211 Bus Communications	3	47	ECON 202 Prin of Microeconomics	3	47
ECON 201 Prin of Macroeconomics	3	47	*Literature, Social Science or Psychology	3	47
MANG 201 Prin of Mgmt	3	47		12	188
OFAD 270 Microcomputer App	3	47			
	17	251			

*See pp. 57-58 for listing of approved general education courses.

OFFICE SUPERVISION AND MANAGEMENT: ADMINISTRATIVE SECRETARY

(Associate of Applied Science)

DEGREE REQUIREMENTS:

1. *General Education:* (12 hrs. plus 4 hrs. physical education)
   - ENGW 111 and 112 (6)
   - *Social or Behavioral Science, Psychology or Literature (6)
   - Physical Ed. Activity (4)

2. *Business Course Requirements:* (12 hrs. other than OFAD Courses.)

BUGB 141	(3)	CISB 103	(1)
BUGB 211	(3)	CISB 104	(1)
CISB 102	(1)	MANG 121	(3)

3. *Office Administration Courses:* (27 hrs.)

OFAD 101	(3)	OFAD 265	(3)
OFAD 152	(3)	OFAD 266	(4)
OFAD 201 or 202	(3)	OFAD 270	(3)
OFAD 221	(3)	OFAD 271	(2)
OFAD 264	(3)		

4. *Electives:* (9 hrs. — of which 6 hrs. must be business electives)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Con Hrs*	*Spring Semester*	*Sem Hrs*	*Con Hrs*
BUGB 141 Business Math	3	47	Electives	6	94
CISB 102 Computer Literacy	1	16	ENGW 112 English Composition	3	47
CISB 103 Computer Concepts	1	16	OFAD 101 Bookkeeping for Small Business	3	47
CISB 104 BASIC Programming	1	16	*Social Science, Psychology or Literature	3	47
ENGW 111 English Composition	3	47	PE Activity	1	24
OFAD 152 Doc Format/Skill Devel	3	47		16	259
OFAD 264 Beg Word/Info Process	3	47			
PE Activity	1	24			
	15	260			

Second Year:

Fall Semester			*Spring Semester*		
BUGB 211 Bus Communications	3	47	Electives	3	47
OFAD 221 Transcription Machines	3	47	MANG 121 Human Relations in Bus	3	47
OFAD 265 Inter Word/Info Process	3	47	OFAD 201 Office Management or OFAD 202 Records Mgmt	3	47
*Social Science, Psychology or Literature	3	47	OFAD 266 Word/Info Proc: Doc Prod.	4	62
OFAD 270 Office Auto: Microcomp	3	47	OFAD 271 Office Auto: Concepts	2	32
PE Activity	1	24	PE Activity	1	24
	16	259		16	259

*See pp. 57-58 for listing of approved general education courses.

OFFICE SUPERVISION AND MANAGEMENT: LEGAL SECRETARY

(Associate of Applied Science)

DEGREE REQUIREMENTS:

1. *General Education:* (12 hrs. plus 4 hrs. physical education)
   - ENGW 111 and 112 or 115 (6)
   - *Social and Behavioral Science or Literature (6)
   - Physical Ed. Activity (4)
2. *Business Course Requirements:* (12 hrs.)

BUGB 141	(3)	CISB 102	(1)
BUGB 211	(3)	CISB 103	(1)
BUGB 231	(3)	CISB 104	(1)

3. *Office Administration Courses:* (33 hrs.)

OFAD 101	(3)	OFAD 264	(3)
OFAD 152	(3)	OFAD 265	(3)
OFAD 201	(3)	OFAD 266	(4)
OFAD 202	(3)	OFAD 270	(3)
OFAD 221	(3)	OFAD 271	(2)
OFAD 244	(3)		

4. *Other Course Requirements:* (3 hrs.)
   - SPCH 101 (3)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Con Hrs*	*Spring Semester*	*Sem Hrs*	*Con Hrs*
ENGW 111 English Composition	3	47	BUGB 141 Business Math	3	47
OFAD 152 Doc Format/Skill Dev.	3	47	BUGB 231 Survey of Bus. Law	3	47
OFAD 244 Legal Procedures	3	47	ENGW 112 English Composition or ENGW 115 Technical Writing	3	47
OFAD 264 Beg Word Info Proc.	3	47	OFAD 266 Word/Info Proc: Doc Prod.	4	62
*Social Science, Psychology or Literature	3	47	CISB 102,103,104 Comp. Modules	3	47
PE Activity, 1st mod.	1	24	PE Activity, 1st mod.	1	24
PE Activity, 2st mod.	1	24	PE Activity, 2nd mod	1	24
	17	283		18	298

Second Year:

Fall Semester			*Spring Semester*		
OFAD 265 Inter Word/Info Proc.	3	47	BUGB 211 Business Commun	3	47
OFAD 101 Bookkeeping for Small Business	3	47	OFAD 201 Office Management	3	47
OFAD 202 Records Management	3	47	OFAD 271 Office Auto: Concepts	2	32
OFAD 221 Transcription Machines	3	47	SPCH 101 Interpersonal Commun	3	47
OFAD 270 Microcomputer Applic.	3	47	*Social Science, Psychology or Literature	3	47
	15	235		14	220

*See pp. 57-58 for listing of approved general education courses.

OFFICE SUPERVISION AND MANAGEMENT: MEDICAL SECRETARY

(Associate of Applied Science)

DEGREE REQUIREMENTS:

1. *General Education:* (12 hrs. plus 4 hrs. physical education)
   - ENGW 111 and 112 or 115 (6)
   - *Social and Behavioral Science or Literature (6)
   - Physical Ed. Activity (4)

2. *Business Course Requirements:* (6 hrs.)

BUGB 141	(3)	BUGB 211	(3)

3. *Office Administration Courses:* (27 hrs.)

OFAD 101	(3)	OFAD 231	(3)
OFAD 147	(3)	OFAD 264	(3)
OFAD 152	(3)	OFAD 265	(3)
OFAD 154	(2)	OFAD 266	(4)
OFAD 159	(3)		

4. *Other Course Requirements:* (20 hrs.)

BIOL 141	(3)	PHYA 265	(3)
BIOL 141 Lab	(2)	PSYC 233	(3)
Electives	(6)	SOCO 260	(3)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Con Hrs*	*Spring Semester*	*Sem Hrs*	*Con Hrs*
BUGB 141 Business Math	3	47	BUGB 211 Bus Communications	3	47
ENGW 111 English Composition	3	47	ENGW 112 English Composition or ENGW 115 Technical Writing	3	47
OFAD 152 Doc Format/Skill Devel	3	47	OFAD 101 Bookkeeping for Small Business	3	47
OFAD 264 Beg Word Info Proc	3	47	OFAD 265 Inter Word/Info Proc	3	47
*Social Science, Psychology or Literature	3	47	*Social Science, Psychology or Literature	3	47
PE Activity, 1st mod	1	24	PE Activity, 1st mod	1	24
PE Activity, 2nd mod	1	24	PE Activity, 2nd mod	1	24
	17	283		17	283

Second Year:

Fall Semester			*Spring Semester*		
BIOL 141 Human Anatomy and Physiology	3	47	Elective	3	47
BIOL 141L Human Anatomy and Physiology Lab	2	60	OFAD 154 Laboratory Techniques	2	32
OFAD 147 Medical Terminology	3	47	OFAD 159 Medical Office Procedures	3	47
PHYA 265 Standard First Aid and Cardio-Pulmonary Resuscitation	3	47	OFAD 231 Medical Transcription	3	47
OFAD 266 Word/Info Proc: Doc Prod	4	63	PSYC 233 Human Growth/ Development	3	47
SOCO 260 General Sociology	3	47		14	220
	18	311			

*See pp. 57-58 for listing of approved general education courses.

CERTIFICATE OF OCCUPATIONAL PROFICIENCY PROGRAMS

Students are encouraged to take the A.C.T. Results of the test are used for student advisement and may be predictors of student success in the program.

OFFICE SUPERVISION & MANAGEMENT: CLERICAL

(Certificate of Occupational Proficiency)

CERTIFICATE REQUIREMENTS: (37 hrs. consisting of 31 hrs. business and 6 hrs. English — no deviation without course substitution approval by adviser)

SUGGESTED COURSE SEQUENCING:

Fall Semester	*Sem Hrs*	*Con Hrs*	*Spring Semester*	*Sem Hrs*	*Con Hrs*
BUGB 141 Business Math	3	47	BUGB 211 Bus Communications	3	47
ENGW 111 English Composition	3	47	ENGW 112 English Composition or ENGW 115 Technical Writing	3	47
OFAD 101 Bookkeeping/Small Bus	3	47	OFAD 201 Office Management or OFAD 202 Records Management	3	47
OFAD 152 Doc Format/Skill Dev	3	47	OFAD 221 Transcription Machines	3	47
OFAD 264 Beg Word/Info Proc	3	47	OFAD 265 Int. Word Process	3	47
OFAD 270 OA: Microcomp App	3	47	OFAD 266 Word/Info Proc: Doc Prod	4	62
	18	282		19	297

OFFICE SUPERVISION AND MANAGEMENT: MEDICAL OFFICE ASSISTANT

(Certificate of Occupational Proficiency)

CERTIFICATE REQUIREMENTS: (38 hrs. consisting of 23 hrs. business, 5 hrs. biology, 3 hrs. English and 3 hrs. first aid — no deviation without course substitution approval by adviser)

SUGGESTED COURSE SEQUENCING:

Fall Semester	*Sem Hrs*	*Con Hrs*
BIOL 141 Human Anatomy and Physiology	3	47
BIOL 141L Human Anatomy and Physiology Lab	2	60
ENGW 111 English Composition	3	47
OFAD 147 Medical Terminology	3	47
OFAD 152 Doc Format/Skill Dev.	3	47
OFAD 264 Beg Word Info Process	3	47
	17	295

Spring Semester	*Sem Hrs*	*Con Hrs*
BUGB 211 Bus Communications	3	47
OFAD 101 Bookkeeping for Small Business	3	47
OFAD 154 Laboratory Techniques	2	32
OFAD 159 Medical Office Proc.	3	47
OFAD 221 Transcription Machines	3	47
OFAD 266 Word/Info Proc: Doc Prod.	4	62
PHYA 265 Standard First Aid and Cardio-Pulmonary Resuscitation	3	47
	21	329

SCHOOL OF HUMANITIES AND FINE ARTS

Michael Gerlach, Acting Dean

Departments and Faculties

Art
S. Cahill, C. Hardy (Chair), D. Meyers, L. Mosher

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

Languages and Literature
R. Berkey, E. Broughton, B. Crowell, C. Davies, M. Djos, R. Frohock, J. Gallegos, K. Gauggel, P. Hills, R. Johnson (Chair), S. Matchett, D. MacKendrick, M. Neal, D. Pilkenton, J. Rider, R. Sowada, M. Spelman, B. Tharaud, J. Zeigel

Music
G. Asquith, M. Atkinson (Chair), G. Cope, K. Gustafson, L. Sanford, P. Schneider

Theatre and Communications
P. Carmichael, V. Carmichael, D. Cox (Acting Chair), B. Evers, M. Gerlach, M. Robb, L. Scott, G. Weaver

Each student seeking a degree or certificate must obtain a program sheet from his or her faculty adviser or from the Office of the Dean of the School of Humanities and Fine Arts listing specific requirements for the degree sought. The School of Humanities and Fine Arts offers academic programs leading to the Bachelor of Arts in Liberal Arts (four years) and the Associate of Arts (two years). The various emphases are listed on the following pages.

The School endeavors to develop cultural awareness and critical judgment in students. Studies help students develop the intellectual skills and ethical values which contribute to the enrichment of life for the individual and society.

INDEX TO PROGRAMS:

The following is a list of study emphases in Humanities and Fine Arts, indicating the degrees available under each emphasis and the page on which details may be found.

Early Childhood Education		A.A., p. 87	Cert., p. 89
*English**	B.A., p. 89	A.A., p. 100	
Fine Arts:			
Art	B.A., p. 94	A.A., p. 99	
Music*	B.A., p. 94	A.A., p. 100	
Theatre	B.A., p. 96	A.A., p. 100	
Music Theatre	B.A., p. 97		
Humanities	B.A., p. 98	A.A., p. 100	
Mass Communications	B.A., p. 98		
Teacher Certification	p. 101, 165		

*Certification for Elementary or Secondary Education in English and K-12 Music Education is available (see pp. 90-93, 95). Other fields of study available with the Humanities and Fine Arts include: *Creative Writing, Dance, Foreign Languages, Philosophy, Speech.* A program in *Commercial Art* is available through the School of Technology (see page 108).

BACHELOR OF ARTS IN LIBERAL ARTS

DEGREE REQUIREMENTS:

1. *General Education:* (40 hrs. plus 4 hrs. physical education)

English Composition*	(6)	Specific courses to
Physical Sciences and Math	(8-9)	satisfy these requirements
Social Sciences	(8-9)	are listed on pages 49-52
Life Sciences (Biol/Psych)	(8-9)	in this catalog.
Humanities and Fine Arts	(8-9)	

*Students not prepared for the composition sequence will be required to take English 090.

NOTE: Students not showing two years of high-school study or demonstrated proficiency in a foreign language will be required to take one year of a foreign language.

2. *Related Studies Core:* 30 hrs. See following.

3. *Emphasis:* 20-22 hrs.

4. *Electives:* 20-30 hrs.

The Bachelor of Arts in Liberal Arts degree is designed for students who wish a broad experience in the arts and humanities. It requires a variable core of related studies in addition to general education and specific emphasis requirements. The courses indicated or their equivalents are required. No grade below "C" may be used to satisfy requirements in the core or emphasis.

RELATED STUDIES CORE

A student's chosen discipline (emphasis) does not exist in a vacuum, but is linked meaningfully to other disciplines which share important dimensions with it. Thus one does not simply fulfill the general education requirements and launch into an emphasis, but instead also pursues studies in the core which are related to, and which help illuminate, one's particular emphasis. The related studies core in humanities and fine arts is divided into four major areas, with requirements in each area.

Thirty semester hours are required with a maximum of 18 hours from any single field of study. General education courses may not be counted in the core. Transfer students may substitute approved equivalent courses for those listed below.

	Hrs
I. *Introductory Studies*	(6)
Art	
ARTE 115	
Communications	
MASS 101	
Literature	
ENLI 131 or 132, 141	
Music	
MUSA 220	
Theatre	
THEA 141, 145	
II. **Historical Studies*	(9-12)
(Must include at least two disciplines.)	
Art	
ARTE 211 or 212, 315, 316	
Communications	
MASS 121	

Literature
ENLI 134, 135, 142, 145, 254, 255, 261, 262, 369, 370, 380, 381, 382, 416, 445
Music
MUSA 266, 326, 327
Philosophy
PHIL 251 or 252
Theatre
THEA 145, 331, 345, 346, 411

III. **Applied Studies* (9-12)
(Must include at least two disciplines.)
Art
ARTE 101, 102, 151, all 200 level "Processes and Media" courses
Communications
MASS 221, 231, 397 or 497
Foreign Language
Any introductory or advanced course
Music
MUSA 110, 114, 115, 116, 117, 130, 131, 137, 138, 214, 216, 230, 236, 260, 262, 268, 310, 316, 317, 318, 337, 410, 450, 451A or B
MUSP 100-400, MUSL 100-400
Speech
SPCH 101, 102, 112
Creative Writing
ENGW 251, 252, 394
Theatre
THEA 115, 142, 143, 147, 148, 241, 242, 243, 244, 251, 252, 114-414, 315, 343, 344, 351, 352, 370, 371, 451, 452, 455, 456, 457, 461
In addition, most technical theatre courses, drama performance courses, and workshop courses may be used to satisfy core requirements, if approved by the department chair.

*Semester hours completed in Areas II and III must total 21

IV. *Critical Studies* (3)
Fine Arts
FINE 494
Communications
MASS 494
Literary Criticism
ENLI 421, 422

EARLY CHILDHOOD EDUCATION

(Associate of Arts)

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

Placement in the program depends on individual maturity and professional growth. A physical exam is required to enter. General education requirements are standard and listed under Graduation Requirements in this catalog.

DEGREE REQUIREMENTS:

1. *General Education:* (34-35 hrs. plus 4 hrs. physical education)
   Students seeking an Associates of Arts degree in Early Childhood Education must satisfy the general education requirements of the Associate of Arts degree in the "Graduation Requirements" section of this catalog; the following courses satisfy those requirements and meet the needs of the Early Childhood Education program. Where no course is specified, students may select from the list of general education requirements.

ENGW 111 and 112	(6)
SPCH 102	(3)
Mathematics (MATH 113 recommended; only courses listed under general education for the Associate of Arts degree satisfy the requirement)	(3-4)
Science	(4)
PSYC 121, 122	(6)
SOCO 260	(3)
Humanities	(9)
Physical Education Activity	(4)

2. *Emphasis Requirements:* (29 hrs.)

ARTE 210	(2)	ENLI 240	(3)
EDEC 110	(2)	HMEC 211	(3)
EDEC 111	(3)	MUSA 241	(2)
EDEC 121	(2)	PSYC 233	(3)
EDEC 252	(5)	THEA 211	(2)
EDEC 260	(3)	THEA 213	(2)

3. *First Aid to be taken through the Red Cross*

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 112 English Composition	3
PSYC 121 General Psychology	3	PSYC 122 General Psychology	3
EDEC 110 Infant/Toddler Curr	2	EDEC 111 Curr Early Childhood Edu.	3
EDEC 121 Intro/Early Childhood	2	THEA 211 Creative Play Act/Dance	2
ARTE 210 Early Childhood Art	2	THEA 213 Creative Play Act/Drama	2
MUSA 241 Music Methods	2	SPCH 102 Speechmaking	3
PE Activity	2	PE Activity	1

Second Year:

Fall Semester		*Spring Semester*	
ENLI 240 Children's Literature	3	HMEC 211 Nutrition	3
SOCO 260 General Sociology	3	EDEC 260 Child-Care Center Mgmt	3
Humanities Elective	3	Humanities Elective	6
EDEC 252 Student Teaching	5	Social Science Elective	4
MATH 113	4	PSYC 233 Human Growth/Dev.	3
		PE Activity	1

EARLY CHILDHOOD EDUCATION

(Certificate of Occupational Proficiency)

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

CERTIFICATE REQUIREMENTS:

1. *Required:*

PSYC 121	(3)	EDEC 110	(2)
SOCO 260	(3)	EDEC 252	(5)
EDEC 111	(3)	HMEC 211	(3)
PSYC 233	(3)	EDEC 260	(3)

2. *Choice of two courses from* (Minimum 27 hrs. required):

ARTE 210	MUSA 241
EDEC 121	THEA 213
ENLI 240	

SUGGESTED COURSE SEQUENCING:

Fall Semester	*Sem Hrs*	*Con Hrs*	*Spring Semester*	*Sem Hrs*	*Con Hrs*
EDEC 110 Infant/Toddler Curr	2	32	EDEC 260 Child-Care Cen. Mgmt	3	47
EDEC 111 Curr/Dev Early Child Ed	3	47	EDEC 252 Student Teaching	5	240
HMEC 211 Nutrition	3	47	PSYC 233 Human/Growth Devel	3	47
PSYC 121 General Psychology	3	47			
SOCO 260 General Sociology	3	47			

Current Red Cross First Aid Card required

BACHELOR OF ARTS IN LIBERAL ARTS — ENGLISH EMPHASIS:

(Note: One year of a foreign language is required; a second year is *strongly urged*).

			Credit Hours
Group I: (All courses required)		Total of 12 hours	
ENLI	355	Shakespeare I	(3)
ENLI	254	English Literature I	(3)
ENLI	261	United States Literature I	(3)
ENLI	494	Seminar	(3)
Group II:		Total of 6 hours	
ENLI	369	17th Century English Literature	(3)
ENLI	370	18th Century English Literature	(3)
ENLI	380	19th Century British Literature I	(3)
ENLI	381	19th Century British Literature II	(3)
ENLI	382	The Romantics	(3)
ENLI	316	American Novel	(3)
ENLI	324	Short Story	(3)
ENLI	410	British Novel	(3)
Group III: Upper Division (300-400 level, two required)		Total of 6 hours	
ENLI	335	Bible as Literature	(3)
ENLI	340	Classical Greek Literature	(3)
ENLI	341	Classical Latin Literature	(3)
ENLI	350	Chaucer	(3)
ENLI	360	Milton	(3)

ENLI	415	American Folklore	(3)
ENLI	416	Contemporary American Poetry	(3)
ENLI	421	History of Literary Criticism	(3)
ENLI	422	Forces in Contemporary Criticism	(3)
ENLI	424	Literature and Science	(3)
ENLI	445	American Poetry from 1870 to 1940	(3)
ENSS	440	History of the English Language	(3)
ENSS	451	Structure of the English Language	(3)
ENSS	455	Methods of Teaching English	(3)
ENSS	461	Structure of the English Language	(3)
ENSS	496	Topics in Language and Literature	(3)
ENGW	394	Seminar/Advanced Writing	(3)
THEA	345	World Drama I	(3)
THEA	346	World Drama II	(3)
THEA	411	American Drama	(3)

In addition, the General Education and Related Studies Core requirements (described previously) must be met, with the balance of elective hours chosen in consultation with the Adviser.

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 112 English Composition	3
ENLI 131 World Literature I	3	ENLI 132 World Literature II	3
FLAS 111 1st Year Spanish I or FLAG 111 1st Year German I or FLAF 111 1st Year French I	3	FLAS 112 1st Year Spanish II or FLAG 112 1st Year German II or FLAF 112 1st Year French II	3
General Education	6	PE Activity	1
PE Activity	1	General education	6

Second Year:

Fall Semester	*Spring Semester*
Fine Arts Elective	3
ENLI 254 English Literature I or ENLI 261 U.S. Literature I	3
ARTE 211 Art History (Ancient) or adviser approved elective	3
PE Activity	1
PHIL 251 History of Philosophy I	3
General Education	3
ENLI 255 English Literature I or ENLI 262 U.S. Literature II	3
PE Activity	1
General Education	6
English Elective	3
Elective	3

Other Suggested Courses:

ARTE 212
ENLI 134, 135, 142, 255, 262, 316, 318, 324, 350, 355, 360, 370, 380, 381, 382
ENGW 251, 252, 394
ENSS 421, 440, 451
PHIL 275, 352

ENGLISH WITH TEACHER CERTIFICATION

Students preparing to teach English on the elementary or secondary level must confer with the Director of Teacher Education and Certification regarding state certification requirements and with the Chair of Languages and Literature regarding program requirements. The student will receive a Bachelor's degree in Liberal Arts with an English emphasis. Teacher certification is a separate process.

ELEMENTARY EDUCATION: ENGLISH EMPHASIS

1. *General Education* (40-44 hours)
   R = required; + = recommended

   A. English Composition (6 hours)
   R ENGW 111 English Composition
   R ENGW 112 English Composition

   B. Biology, Science and Psychology (8-9 hours)
   R PSYC 233 Human Growth and Development
   + BIOL 101, 101L General Biology and Laboratory
   + PSYC 121, 122 General Psychology

   C. Humanities and Fine Arts (8-9 hours)
   + ENLI 131 World Literature
   + ENLI 132 World Literature
   R SPCH 102 Speechmaking
   R FLA- — Foreign Language

   D. Physical Science, Computer Science, Math, Statistics (8-9 hours)
   R MATH 105 Elements of Mathematics I
   - MATH 106 Elements of Mathematics II
   + CSCI 100 Computers in Our Society
   + GEOL 103 Weather and Climate

   E. Social Sciences (8-9 hours)
   + GEOG 101 Introduction to Geography
   + HIST 101 Western Civilizations
   + POLS 101 American Government
   + ANTH 102 Cultural Anthropology

   F. Physical Education (4 hours)
   (See "Graduation Requirements" section for complete list of General Education classes)

2. *English Core and Emphasis* (48 hours)

Group I. (All required)
ENLI 131 World Literature
ENLI 240 Children's Literature
ENLI 254 English Literature
ENLI 261 U.S. Literature
ENLI 262 U.S. Literature
ENLI 355 Shakespeare
ENLI 395 Independent Study: Methods of Teaching Grammar
ENLI 421 History of Literary Criticism
ENLI 494 Seminar in Literature
ENGW 251 Creative Writing: Formulas in Fiction
ENGW 394 Seminar in Advanced Writing
ENSS 440 History of the English Language
ENSS 451 Structure of the English Language

Group II. (Choose at least 6 hours)

*These courses are not offered every year.

*ENLI 316 American Novel
*ENLI 324 Short Story
*ENLI 369 17th Century English Literature
*ENLI 370 18th Century English Literature
*ENLI 380 19th Century British Literature
*ENLI 381 19th Century British Literature
*THEA 412 Contemporary Drama

Group III. (3 hours)

ARTE 115 Art Appreciation
ENLI 141 Introduction to Literature: Fiction
MUSA 220 Music Appreciation
MASS 101 Mass Media in America
THEA 141 Theatre Appreciation

4. *Mesa Teacher Education Classes*

EDUC 220 Foundations and Legal Aspects of Education
EDUC 260 Teaching Diverse Populations
EDUC 311 Creative and Physical Expression for Children
EDUC 320 Developing Child in School
EDUC 321 Current Issues in Curriculum Development
EDUC 350 Exceptionality in the Classroom
EDUC 370 Orientation to Educational Technology
EDUC 390 The Comprehensive Elementary Language Program
EDUC 400 Learning Theories and Teaching Strategies in the Disciplines
EDUC 494 Pre-Internship Seminar
EDUC 499 Student Teaching
CPR and First Aid

SECONDARY EDUCATION: ENGLISH

Classes used in core may not be used for General Education or for emphasis requirements. Each class may only be used once.

I. *General Education* (40-44 hours)
See General Education requirements for Baccalaureate degree in "Graduation" section of this catalog. As part of the regular general education requirements, this major requires the following:

ENLI 131 World Literature
SPCH 102 Speechmaking
FLA- ___ Foreign Language (3 hours)
(+3 hrs. additional in core)
PSYC 233 Human Growth and Development

2. *Humanities Core Classes* (30 hours)
A. **Introductory Studies** (6 hours)
ENLI 132 World Literature *or*
ENLI 141 Introduction to Fiction
In addition, choose one from the following:
MUSA 220 Music Appreciation
ARTE 115 Art Appreciation
THEA 141 Theatre Appreciation
MASS 101 Mass Media in America

B. **Historical Studies**
ENLI 255 English Literature
ENLI 262 U.S. Literature
ENLI 365 Adolescent Literature
ENSS 440 History of the English Language

C. **Applied Studies** (9 hours)
*ENGW 394 Seminar: Advanced Writing
FLA- ____ (Foreign Language, Introductory or Advanced)
*SPCH 403 Teaching Speech and Drama

D. **Critical Studies** (3 hours)
*ENLI 421 History of Literary Criticism *or*
*ENLI 422 Contemporary Criticism

3. *English Emphasis* (21 hours minimum)
Group I. (All required)
ENLI 254 English Literature
ENLI 261 U.S. Literature
ENLI 355 Shakespeare

Group II. (Choose at least 6 hours)
*These courses are not offered every year.
*ENLI 316 American Novel
*ENLI 324 Short Story
*ENLI 350 Chaucer
*ENLI 360 Milton
*ENLI 369 17th Century English Literature
*ENLI 370 18th Century English Literature
*ENLI 380 19th Century British Literature
*ENLI 381 19th Century British Literature
*THEA 412 Contemporary Drama

Group III. (Both required)
ENSS 451 Structure of the English Language
ENLI 494 Seminar in Literature

Group IV. Electives (19-21 hours)
(Upper level Education classes may fulfill this requirement.)

4. *Mesa Teacher Education Classes*
EDUC 220 Foundations and Legal Aspects of Education
EDUC 260 Teaching Diverse Populations
EDUC 320 Developing Child in School
EDUC 350 Exceptionality in the Classroom
EDUC 360 Teaching and Learning in the Secondary School
EDUC 370 Orientation to Educational Technology
EDUC 405 Reading and Writing in the Content Area
ENSS 455 Methods of Teaching English
EDUC 494 Pre-Internship Seminar
EDUC 499g Student Teaching
CPR and First Aid

ENGLISH SEQUENCE FOR TEACHER CERTIFICATION CANDIDATES IN OTHER AREAS

Students seeking a second endorsement in English must confer with the Director of Teacher Certification.

DEGREE REQUIREMENTS BY EMPHASIS:

BACHELOR OF ARTS IN LIBERAL ARTS — FINE ARTS EMPHASIS

ART:

ARTE 251	— Figure Drawing	(3)
	Processes & Media, 2-D*	(3-6)
	Processes & Media, 3-D*	(3-6)
315	— Modernist Art History or	
316	— Post Modern Art History	(3)
300	— Exhibitions & Management	(2)
400	— Exhibitions & Portfolio	(1)
494	— Senior Seminar	(2)

*Three Advanced Studios must be taken in satisfying the "Processes and Media" requirements.

In addition, the General Education and Core requirements (see above) must be met, and 30 hours of electives chosen in consultation with the adviser.

The Mesa State College Art Department reserves the right to retain and display one piece of art work from each student enrolled in a studio class.

SUGGESTED COURSE SEQUENCE:

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 112 English Composition	3
ARTE 101 Two Dimensional Design	3	ARTE 102 Three Dimensional Design	3
ARTE 151 Basic Drawing	3	ARTE 115 Art Appreciation	3
PSYC 121 General Psychology	3	PSYC 122 General Psychology	3
General Education Elective	3	PE Activity	1
PE Activity	1	Elective	3

Second Year:

Fall Semester		*Spring Semester*	
ARTE 291 Painting	3	ARTE 212 Art History	3
ARTE 211 Art History	3	ARTE 282 Sculpture	3
PHIL 251 History/Philosophy	3	ARTE 251 Figure Drawing	3
General Education Electives	6	ENLI 135 Mythology (Medieval)	3
PE Activity	1	General Education Electives	3
		PE Activity	1

BACHELOR OF ARTS IN LIBERAL ARTS — FINE ARTS EMPHASIS: MUSIC:

MUSA 116, 117	Ear Training and Sightsinging	(2,2)
MUSA 214	Theory III: Chromatics*	(3)
MUSA 216	Keyboard Harmony	(2)
MUSA 317	Comprehensive Musicianship*	(3)
MUSA 326, 327	Music History	(3,3)
MUSA 450	Basic Conducting	(2)
MUSA 451A or B	Advanced Conducting	(2)
	Music Lessons	
	Performance Ensembles	

*Prerequisites normally required. These are taken in general education and the related studies core.

In addition, general education and related studies core requirements (see above) must be met, and 15 hours of electives chosen in consultation with the adviser.

SUGGESTED COURSE SEQUENCE:

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 112 Engish Composition	3
MUSA 114 Theory I	3	MUSA 115 Theory II	3
MUSA 116 Ear Trning & Sightsinging	2	MUSA 117 Ear Trning & Sightsinging	2
MUSA 130 Class Piano I	2	MUSA 131 Class Piano II	2
MUSL Music Lessons	1	MUSL Music Lessons	1
Performance Organizations	1	Performance Organizations	1
PE Activity	1	PE Activity	1
Gen Ed: Social Science or Lit	3	Gen Ed: Social Science or Lit	3

Second Year:

Fall Semester		*Spring Semester*	
MUSA 214 Theory III	3	MUSA 216 Keyboard Harmony	2
MUSA 220 Music Appreciation	3	MUSL Music Lessons	1
MUSA 230 Class Piano III	2	Performance Organizations	1
MUSL Music Lessons	1	PE Activity	1
Performance Organizations	1	General Education	6
PE Activity	1	Electives	6
General Education	6		

Other Suggested courses:
MUSA 137, 138, 160, 236, 260, 262, 266, 268, 310, 318, 337, 410

The following are also required for Bachelor's degree candidates:

1. A music theory, history, and literature proficiency test (senior year)
2. A piano proficiency test (end of sophomore year)
3. Study of major instrument or voice each semester leading toward senior recital
4. A senior recital
5. Performance in a major vocal or instrumental group each semester.
6. Regular attendance at all weekly recitals, faculty and senior recitals, and the Guest Artist Series.
7. (Vocal Performance track only.) Singing ability in Italian, French, and German

BACHELOR OF ARTS IN LIBERAL ARTS — FINE ARTS EMPHASIS — MUSIC WITH TEACHER CERTIFICATION

Students preparing to teach Music in the public schools (K-12) must confer with the Director of Teacher Certification regarding state certification requirements and with the chair of the Music Department regarding program requirements. The student will receive a bachelor's degree in Liberal Arts — Fine Arts with an emphasis in music. Teacher certification is a separate process.

Students wishing certification must fulfill the requirements for a Liberal Arts — Fine Arts degree (music emphasis) shown above. In addition the student will take professional courses prescribed for certification and additional courses in music.

MUSIC EDUCATION COURSES

MUSA 232	String Techniques and Materials	(1)
MUSA 233A	Woodwind Techniques and Materials	(1)
MUSA 234	Brass Techniques and Materials	(1)
MUSA 235	Percussion Techniques and Materials	(1)
MUSA 340	Teaching Elementary and General Music: Methods, Principles, Materials	(3)

MUSA 440 Teaching Vocal Music, K-12: Methods, Principles, Materials (3)
MUSA 441 Teaching Instrumental Music, K-12: Methods, Principles, Materials (3)

Students in Instrumental Emphasis:
MUSA 137 Class Voice I (2)

Students in Vocal Emphasis:
MUSA 410 Vocal Pedagogy (3)

EDUCATION COURSES

EDUC 220 Foundations and Legal Aspects of Education (3)
EDUC 260 Teaching Diverse Populations (2)
EDUC 320 The Developing Child in the School (3)
EDUC 350 Exceptionality in the Classroom (3)
EDUC 370 Orientation to Educational Technology (3)
EDUC 405 Reading and Writing in the Content Area (4)
EDUC 494 Pre-Internship Seminar (2)
EDUC 499D Teaching Internship and Colloquium: Elementary (6)
EDUC 499H Teaching Internship and Colloquium: Secondary (6)

BACHELOR OF ARTS IN LIBERAL ARTS — FINE ARTS EMPHASIS THEATRE:

THEA 142 — Makeup (2)
143 — Costuming (2)
243 — Scene Construction (3)
244 — Beginning Lighting (3)
Three of the above four must be taken
251 — Beginning Acting (3)
401 Theatre Management (3)
451 — Beginning Directing (3)
452 — Advanced Directing (3)
Drama Literature — one of the following:
ENLI 355 Shakespeare I
THEA 345 or 346, 411 or 412 World Drama I or II, American Drama or Contemporary Drama (3)

In addition, the general education and related studies core requirements described above must be met, and 28 hours of electives must be chosen in consultation with the adviser.

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 112 English Composition	3
THEA 142 Make-Up	2	THEA 143 Costuming	2
General Ed: Social Science or Lit.	6	THEA 244 Theatre Practice or THEA 252 Acting	3
THEA 243 Theatre Practice or THEA 251 Acting I	3	SPCH 112 Voice and Diction	3
MUSA 137 Class Voice	2	PHYE Jazz or Tap Dance	1
PHYE Ballet or Modern Dance	1	General Ed: Social Science or Lit.	6

Second Year:

Fall Semester		*Spring Semester*	
THEA 243 Theatre Practice or THEA 251 Acting I	3	THEA 244 Theatre Practice or THEA 253 Acting II	3
THEA 270 Intro to Music Theatre	3	PHYE Jazz or Tap Dance	1
PHYE Ballet or Modern Dance	1	General Education	6
General Education	6	Electives	3-6
Electives	6		

The student wishing to continue in the acting/directing sequence should consult with the acting faculty for course of study for upper division. The student wishing to continue in the technical sequence should consult with the technical director.

Two further requirements apply. Each baccalaureate degree student in Theatre must:

1. Work as a member of at least two crews per year so that each student will complete, over four years, four construction and four running crews. (Exceptions must be approved by the Chair of the Department.)
2. Audition for (and, if cast, appear in) two Mesa State College productions each year.

BACHELOR OF ARTS IN LIBERAL ARTS — FINE ARTS EMPHASIS MUSIC THEATRE:

MUSA	116*	Ear Training and Sightsinging	(2)
	131*	Class Piano	(2)
THEA	142	Makeup	(2)
	251	Beginning Acting	(3)
	270*	Introducion to Music Theatre	(3)
	370/371	Music Theatre	(2,2)
	470/471	Music Theatre	(2,2)

*Prerequisites normally required.

In addition, general education and related studies core requirements (described above) must be met, and 29 hours of electives must be chosen in consultation with the Adviser.

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 112 English Composition	3
MUSA 130 Class Piano I	2	MUSA 138 Class Voice II	2
MUSA 137 Class Voice I	2	MUSA 131 Class Piano II	2
MUSA 114 Theory I — Introduction	2	THEA 222 Improv & Compos Dance	3
MUSA 116 Ear Trning & Sightsinging	2	THEA 252 Stage Movement	3
MUSP 150 Choir	1	PHYE Ballet, Tap or Jazz Dance	1
THEA 251 Beginning Acting	3	MUSP 150 Choir	1
General Ed: Social Science or Lit	3	General Ed: Social Science or Lit	3

Second Year:

Fall Semester		*Spring Semester*	
THEA 141 Theatre Appreciation or ARTE 115 Art Appreciation	3	MUSA 220 Music Appreciation	3
THEA 270 Intro to Music Theatre	3	MUSL Voice Lessons	1
THEA 142 Make-Up	2	MUSP Choral Ensemble	1
MUSL Voice Lessons	1	PHYE Dance	1
MUSP Choral Ensemble	1	General Education	6
PHYE Ballet, Tap or Jazz Dance	1	Electives	3-6
General Education	6		
Electives	2		

Other Suggested Courses
MUSA 268, 326, 327, 337, SPCH 112, THEA 331, 455, 456, PHYA 253

The following are also required:

1. Musical Productions: The student must audition for one musical production each year, and, if cast, appear in the production.
2. A Music Theatre major must demonstrate proficiency in singing, dancing and acting for graduation.

BACHELOR OF ARTS IN LIBERAL ARTS — HUMANITIES:

A general program intended for students whose interests embrace several areas of the Humanities, this program consists of:

21 credits selected in a balanced program representing at least three of the following areas, with no more than 9 credits in a single area:
Literature, Speech, Philosophy, Foreign Languages, the Arts and History of the Arts, and Mass Communications. Allied or supporting courses from other fields may also be included.

This program is individually designed in careful consultation with an adviser from one of the areas listed and approved by the Dean of the School.

In addition, the general education and related studies core requirements (see above) must be met, and 29 hours of electives must be chosen in consultation with the adviser.

BACHELOR OF ARTS IN LIBERAL ARTS — MASS COMMUNICATIONS:

			Credit Hours
Print Concentration (22 credits)*			
GRCO	130	Basic Photography	(1)
GRCO	132	Darkroom Techniques	(1)
MASS	335	Public Relations Concepts	(3)
MASS	341	Copy Editing and Make Up	(3)
MASS	351	Public Affairs and Feature Reporting	(3)
MASS	421	Journalism Law and Ethics	(3)
MASS	499	Internship in Mass Communications	(8)
Broadcast Concentration (23 credits)*			
MASS	221	Radio Production and Announcing	(3)
MASS	335	Public Relations Concepts	(3)
MASS	321	Broadcast Writing	(3)
MASS	361	Television Production	(3)
MASS	421	Journalism Law and Ethics	(3)
MASS	499	Internship in Mass Communications	(8)
Public Relations Concentration (26 credits)*			
MASS	321	Broadcast Writing	(3)
MASS	335	Public Relations Concepts	(3)
MASS	341	Copy Editing and Make Up	(3)
MASS	351	Public Affairs and Feature Reporting	(3)
MASS	421	Journalism Law and Ethics	(3)
MASS	435	Public Relations Campaigns	(3)
MASS	499	Internship in Mass Communications	(8)

In addition, general education and related studies core requirements (described above) must be met, and 12-18 hours of electives chosen in consultation with the adviser.

*Prerequisites normally required.

SUGGESTED COURSE SEQUENCE:

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 112 English Composition	3
*MASS 101 Mass Media in America	3	*MASS 121 Intro to Broadcasting	3
PE Activity	1	MASS 231 News Writing & Reporting	3
General Education	9	PE Activity	1
		General Education	6

*Freshmen normally complete either MASS 101 or 121. They are encouraged to take both.

Second Year:

Fall Semester		*Spring Semester*	
MASS Course (See adviser)	3	(PRINT)	
PE Activity	1	MASS Course (see adviser)	3
General Education	12	PE Activity	1
		General Education	12
		(BROADCAST)	
		MASS 221 Radio Production	3
		PE Activity	1
		General Education	12

ARTS ADMINISTRATION:

While Mesa State College has no formally designated curriculum in Arts Administration, the Fine Arts departments have a carefully selected sequence of recommended courses which can prepare students in the arts with knowledge and experience critical to the field of Arts Administration. Recommendations include an Internship (8 to 15 credits) in an off-campus organization dedicated to some aspect of the Arts. Interested students should contact their department chair for the information sheet with recommended courses.

ASSOCIATE OF ARTS

DEGREE REQUIREMENTS:

Study directed toward the Associate of Arts degree will serve as a basis for the Bachelor of Arts in Liberal Arts and also for programs offered in other academic schools at Mesa State College and at other colleges. Faculty advisers will assist students in planning programs to meet requirements.

Minimum Semester Hours Required: 64

1. *General Education:* (34 hrs. plus 4 hrs. physical education) Students seeking an Associate of Arts degree must satisfy the general education requirements on pp. 53-55.

COURSE REQUIREMENTS BY EMPHASIS:

ART

ARTE 101 — Two-Dimensional Design	(3)
102 — Three-Dimensional Design	(3)
151 — Basic Drawing	(3)
211, 212 — Art History	(6)
Process and Media Studio	(6)

Plus General education requirements (listed above) *and* nine hours of electives chosen in consultation with art adviser.

ENGLISH

ENLI 131, 132	— World Literature	(6)
134 or 135	— Mythology	(3)
141 or 142	— Introduction to Literature	(3)
254	— English Literature	(3)
261	— U.S. Literature	(3)

Plus general education requirements (listed above) *and* nine hours of electives chosen in consultation with English adviser.

HUMANITIES

Twenty-seven credits must be earned in a balanced program drawn from at least three of the following areas, but with not more than 12 credits from any single area (other allied or supporting areas may also be drawn upon):

Literature, Philosophy, Foreign Languages, Mass Communications, Speech, The Arts, and History of the Arts.

Plus general education requirements as listed above. This program must be carefully designed in consultation with the adviser.

MUSIC

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

*NOTE: MUSA 110 (Standard Notation) must be taken if the student is not ready for 114.

Plus general education requirements as listed above. Eight hours of approved electives also must be chosen in consultation with the adviser.

THEATRE

THEA 141	— Theatre Appreciation	(3)
142	— Makeup	(2)
143	— Costuming	(2)
243	— Scene Construction, Painting, and Design	(3)
	or	
244	— Beginning Lighting	(3)
251	Beginning Acting	(3)
	or	
252	— Stage Movement	(3)
Four credits from: Drama Performance 147, 148, 247, 248 and/or Play Production 117, 118, 217, 218		(4)

Plus general education requirements as listed above. Ten hours of electives also must be chosen in consultation with the adviser.

SPECIALIZED STUDY PROGAMS

RELIGIOUS STUDIES

A number of courses from various disciplines have been identified as pertinent to religious studies students.

SUGGESTED COURSES
Philosophy
PHIL 251, 252, 352, 353, 354
Social Sciences and Literature
ANTH 230, SOCO 310, ENLI 335

Allied Courses
Literature
ENLI 131, 132, 134, 135, 145, 340, 341
General
ANTH 232

INTERNSHIPS
Off-campus student work in a professional setting related to the emphasis is available in all areas of Humanities and Fine Arts for variable credit. In Mass Communications internships are required.

SCHOLARSHIPS
Music, art, and drama students may apply directly to their respective departments for scholarship consideration. Auditions or portfolio of work may be required. Major awards are available in Music (Krey and Zeigel), and in Humanities, Theatre, and Mass Communications (Howell, Herr, Nagatomo, Fletcher, Robinson, and Zeigel).

General scholarships and grants are available through the Office of Financial Aid.

TEACHER CERTIFICATION

This program is under the jurisdiction of the School of Humanities and Fine Arts. However, because of the disciplinary nature of the program, Teacher Certification is listed under a separate section entitled "Teacher Certification" at the end of this "Program" section.

SCHOOL OF TECHNOLOGY

A.Ray Greb, Acting Dean

Departments and Faculties	B. Beden, W. Branton (Chair), B. Buchholz, D. Duff, C. Fetters, E. Fresquez, F. Holgate, G. Looft, D. Marsh, K. McDonald, E. Romero, P. Wells (Chair), R. Wilcox
Campus Sites	Main Campus (Medesy Vocational-Technical Center) South Campus (29 and D Road) Unified Technical Education Center - UTEC (Foresight Park)

Each student seeking a degree or certificate must obtain a program sheet from his or her faculty adviser or from the Office of the Dean of the School of Technology listing specific requirements for the degree sought. The school offers a variety of associate degrees or certificates with training directed toward employment opportunities. Applications from women and minorities are encouraged. Training and work in the following program areas requires performing in places where dust, fumes, noise and other conditions may have an influence on personal health. Regular lifting of up to 50 pounds may be necessary. Prospective students should check further about specific physical requirements. All programs are offered as approved by the State Board for Community Colleges and Occupational Education.

ASSOCIATE OF APPLIED SCIENCE

Automotive Collision Repair
Automotive Technology
Commercial Art
Electronics Technology
Machining Technology
Printing Technology
Welding

ASSOCIATE OF SCIENCE

Areas of Emphasis: Electronic Engineering Technology
Manufacturing Technology

CERTIFICATE OF OCCUPATIONAL PROFICIENCY

Automotive Collision Repair
Automotive Service
Computer Drafting Technology
Electric Lineworker
Electronics Technology
Heavy Equipment — Diesel Mechanics
Machine and Manufacturing Trades
Welding

ASSOCIATE OF APPLIED SCIENCE

DEGREE REQUIREMENTS

Course work required for a degree consists of general education, technical courses, physical education and, in some cases, electives. Programs are designed to provide preparation for initial employment as well as career advancement opportunities.

ASSOCIATE OF SCIENCE

DEGREE REQUIREMENTS

Associate of Science degrees are designed primarily for transferring to bachelor degree programs in similar fields of study. Emphasis is on technical knowledge and skill as well as mathematics and laboratory sciences. Variations of general education requirements, English Composition, Social Science, Humanities, Mathematics, and Literature, may be possible with the approval of the student's faculty adviser.

CERTIFICATE OF OCCUPATIONAL PROFICIENCY

COMPLETION REQUIREMENTS

All coursework specified must be successfully completed before the Certificate of Occupational Proficiency is awarded. Content of certificate programs has been developed to prepare persons for beginning level employment opportunities in as short a time as possible. Certain coursework in the field of specialization must be completed with a grade of "C" or above to count toward graduation.

All students should work closely with their faculty advisers while completing their programs of study. The student alone is ultimately responsible for knowing the requirements of a program and for fulfilling those requirements.

The following is a list of the areas of study available (together with the degrees or certificates offered and reference to the catalog page on which detailed information can be found):

Areas of Study Emphasis Available	*Degrees/Certificates*	*Details*
Automotive Collision Repair	AAS, Certificate	p. 104
Automotive Technology	AAS	p. 106
Automotive Service	Certificate	p. 107
Commercial Art	AAS	p. 108
Computer Drafting Technology	Certificate	p. 107
Electric Lineworker	Certificate	p. 109
Electronic Engineering Technology	AS	p. 110
Electronics Technology	AAS, Certificate	p. 112
Heavy Equipment — Diesel Mechanics	Certificate	p. 117
Machine and Manufacturing Trades	AAS, Certificate	p. 114, 117
Machining Technology	AAS	p. 114
Manufacturing Technology	AS	p. 115
Printing Technology	AAS	p. 118
Welding	AAS, Certificate	p. 120

AUTOMOTIVE COLLISION REPAIR

(Associate of Applied Science)

Practical application covers all phases of painting, metal working, and collision repair. The training includes learning necessary shop skills, theory, principles and related subjects needed to enter and then progress competitively in the collision repair career fields. The curriculum follows ICAR and NAISE national competency standards. Students may enter the program any semester.

DEGREE REQUIREMENTS

Students seeking an Associate of Applied Science degree must obtain a minimum of 2.00 ("C") in each required AUBF course and must satisfy all other graduation requirements (see pp. 57-58).

Minimum Semester Hours Required (76)

1. Six (6) semester hours of English satisfied by completing any one of the following sequences: (6)
   ENGW 086 and 087, or 121
   or
   ENGW 090 and 111
   or
   ENGW 111 and 112, 115, 121, or 129
2. Plus six (6) semester hours selected from the following: (6)

ANTH 101, 102, 222	HIST 101, 102, 131, 132, 136,137
ECON 201, 202	POLS 101, 256 261, 262
ENLI 131, 132, 134, 135, 141, 142, 145	PSYC 121, 122
GEOG 103	SOCO 144, 260

3. Mathematics
   MATH 015 or higher
4. Collision Repair Required Courses: (54)

AUBF 108,108L	(4)	AUBF 140,140L	(2)	AUBF 228,228L	(3)
AUBF 109,109L	(4)	AUBF 150,150L	(3)	AUBF 229,229L	(3)
AUBF 118,118L	(4)	AUBF 200,200L	(6)	AUBF 238,238L	(4)
AUBF 119,119L	(4)	AUBF 210,210L	(4)	AUBF 239,239L	(4)
AUBF 130,130L	(3)	AUBF 220	(3)	AUBF 250	(3)

5. Electives: (3)
6. Physical Education: (4)
   Courses numbered PHYE 100-199 (See general graduation requirements)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Con Hrs*	*Spring Semester*	*Sem Hrs*	*Con Hrs*
AUBF 108 Int to Auto Body Repair	1	15	AUBF 118 Intro to Painting/Prep	1	15
AUBF 108L Int/Auto Body Rep. Lab	3	85	AUBF 118L Intro/Painting/Prep Lab	3	85
AUBF 109 A B Repair & Prep	1	15	AUBF 119 Complete Auto Painting	1	15
AUBF 109L A B Repair & Prep Lab	3	85	AUBF 119L Compl Auto Paint Lab	3	85
AUBF 150 A B Welding	1	17	AUBF 130 Auto Reconditioning	1	15
AUBF 150L A B Welding Lab	2	60	AUBF 130L Auto Recond. Lab	2	62
PE Activity	2	48	AUBF 140 A.B Suspension/Align	1	17
Vocational Comm/English	3	47	AUBF 140L A B Suspen/Align Lab	1	30
MATH 015 minimum	3	47	Vocational Comm/English	3	47
	19	419	PE Activity	2	48
				18	419

	Second Year:	
Fall Semester		
AUBF 200 Panel/Spot Painting	2	32
AUBF 200L Panel/Spot Painting Lab	4	120
AUBF 210 Unibody & Frame Repair	2	32
AUBF 210L Unibody/Frame Rpr Lab	2	60
AUBF 228 Bolt-on Body Service	1	15
AUBF 228L Bolt-on Body Service Lab	2	60
AUBF 229 Extensive Damage Repair	1	15
AUBF 229L Ext Damage Rpr Lab	2	60
Social Behavioral Science	3	47
	19	441
Spring Semester		
AUBF 220 Shop Management	3	47
AUBF 238 Weld-on Body Service	1	15
AUBF 238L Weld-on Body Serv Lab	3	98
AUBF 239 Complete Collision Repair	1	15
AUBF 239L Complete Coll/ Repair Lab	3	90
AUBF 250 Estimating	3	47
Social Behavioral Science	3	47
Elective	3	47
	20	406

AUTOMOTIVE COLLISION REPAIR

(Certificate of Occupational Proficiency)

This program of study may begin in either a fall or spring semester.

COMPLETION REQUIREMENTS

Students seeking a Certificate of Occupational Proficiency must obtain a minimum of 2.00 ("C") in each listed AUBF course and must satisfy all other graduation requirements.

Minimum Semester Hours Required (34)

SUGGESTED COURSE SEQUENCING:

	Sem Hrs	*Con Hrs*
Fall Semester		
MATH Mathematics Requirement	3	47
AUBF 108 Intro to Auto Body Repair	1	15
AUBF 108L Intro A B Repair Lab	3	85
AUBF 109 A B Repair & Prep	1	15
AUBF 109L A B Repair & Prep Lab	3	85
AUBF 150 A B Welding	1	17
AUBF 150L A B Welding Lab	2	60
AUBF 228 Bolt-on Service	1	15
AUBF 228L Bolt-on Service Lab	2	60
AUBF 229 Extensive Damage Repair	1	15
AUBF 229L Ext Damage Repair Lab	2	60
	20	474
Spring Semester		
AUBF 118 Intro to Painting/Prep	1	15
AUBF 118L Intro to Paint/ Prep Lab	3	85
AUBF 119 Complete Auto Painting	1	15
AUBF 119L Complete Auto Paint Lab	3	85
AUBF 130 Auto Reconditioning	1	15
AUBF 130L Auto Reconditioning Lab	2	62
AUBF 295 Independent Study	2	70
AUBF 296 Topics/Competency Based Lab	1	35
	14	382

Students may enroll in additional auto body repair courses and receive a Certificate of Occupational Proficiency as long as the above requirements are met. Veteran's benefits will be based on the above only.

AUTOMOTIVE TECHNOLOGY

(Associate of Applied Science)

The Automotive Technology program covers general domestic and foreign car repair. Students learn theory and applications of maintenance and repair procedures for components of an automobile including the proper uses of tools and specialized equipment. Diagnosis and troubleshooting receive special emphasis throughout the program. Instruction includes combination lecture/laboratory situations. Extensive lab work on both mockups and live units is part of the training. Mesa State College is a regional training center for Ford, GMC, Chrysler, and Subaru.

DEGREE REQUIREMENTS:

Students seeking an Associate of Applied Science degree must obtain a minimum of 2.00 ("C") in each listed MECA and MECH course, except MECH 105, and must satisfy all other graduation requirements (see pp. 57-58).

Minimum semester hours (75)

1. Six (6) semester hours of English satisfied by completing any one of the following sequences: (6)
   ENGW 086 and 087, or 121
   or
   ENGW 090 and 111
   or
   ENGW 111 and 112, 115, 121, or 129
2. Plus six (6) semester hours selected from the following: (6)

ANTH 101, 102, 222	HIST 101, 102, 131, 132, 136, 137
ECON 201, 202	POLS 101, 256, 261
ENLI 131, 132, 134, 135, 141, 142, 145	PSYC 121, 122
GEOG 103	SOCO 144, 260

3. Mathematics (3)
   MATH 020 minimum
4. Required Related Courses: (10)
   INSA 110 110L (4) MECH 105 (3)
   MANG 121 (3)
5. Mechanics Courses (43)
   Forty-three (43) credit hours minimum from the following:

	Sem Hrs	*Con Hrs*
MECA 116, 116L Transaxles and Driveaxles	3	60
MECA 121, 121L Clutches & Std Transmissions	4	75
MECA 130, 130L Auto Ignition Systems	3	55
MECA 142, 142L Suspension and Alignment	7	137
MECA 222, 222L 4x4 Components and Repair	5	97
MECA 223, 223L Engine Tuneup/Performance	5	97
MECA 227, 227L Automatic Transmissions	4	75
MECA 239, 239L Fuel & Emission Control	6	105
MECA 254, 254L Auto Electronics	6	105
MECA 299 Automotive COOP	2	90
MECH 113, 113L Internal Combustion Engines	7	135
MECH 125, 125L Light Duty Brakes	4	75
MECH 133, 133L Climate Control Systems	4	68

6. Electives: (3)
7. Physical Education Activities: (4)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Con Hrs*	*Spring Semester*	*Sem Hrs*	*Con Hrs*
Voc/Comm/English Requirement	3	47	MANG 121 Hum Relations/Bus	3	47
MATH 020 or higher	3	47	INSA 110, 110L Basic Electronics	4	69
MECH 105 Intro/Shop Practice	3	77	MECA or MECH (from list above)	11	Varies
MECA or MECH (from list above)	10	Varies			
	19	Varies		18	Varies

Second Year:

Fall Semester			*Spring Semester*		
Voc Comm/English Requirement	3	47	Social/Behav. Science Require	3	47
Social/Behav Science Require	3	47	PE Activity	2	48
PE Activity	2	48	Electives	3	32
MECA or MECH (from list above)	11	Varies	MECA or MECH (from list above)	11	Varies
	19	Varies		19	Varies

AUTOMOTIVE SERVICE

(Certificate of Occupational Proficiency)

Offers students a shortened training period with the opportunity to take selected essential courses to prepare for beginning jobs in less technical, basic skill areas. Completion is applicable into the second year Associate of Applied Science program.

COMPLETION REQUIREMENTS:
Students seeking a Certificate of Occupational Proficiency must obtain a minimum of 2.00 ("C") in each course, except ENGW and MANG 121 and must satisfy all other graduation requirements.

Minimum Semester Hours Required (50)

Fall Semester	*Sem Hrs*	*Con Hrs*	*Spring Semester*	*Sem Hrs*	*Con Hrs*
English Requirement	3	47	MECH 113 Internal Comb Eng	3	45
MECH 105 Intro/Shop Practice	2	30	MECH 113L Int Comb Engn Lab	4	90
MECH 105L Intro/Shop Practice Lab	1	22	MECH 133 Climate Control Systems	3	45
MECH 116 Transaxles and Drivaxles	1	15	MECH 133L Climate Contr Syst Lab	1	23
MECA 116L Trans & Driveaxles Lab	2	45	MECA 142 Suspension/Alignment	3	47
MECA 121 Clutches & Std Trans	2	30	MECA 142L Suspension/Align Lab	4	90
MECA 121L Clutches/Std Trans Lab	2	45	INSA 110 Basic Electronics	3	47
MECA 125 Light Duty Brakes	2	30	INSA 110L Basic Electronics Lab	1	30
MECA 125L Light Duty Brakes Lab	2	45	MANG 121 Human Relations/Bus *or* AUBF 220 Shop Management	3	47
MECA 222 4×4 Comp & Repair	2	30			
MECA 222L 4×4 Comp & Repair Lab	3	67			
MATH 020 or higher	3	47			
	25	453		25	464

COMPUTER DRAFTING TECHNOLOGY

(Certificate of Occupational Proficiency)

The program is designed to give the student a general approach to Computer Aided Drafting (CAD) with the use of computers and CAD software as a tool (some courses available only through Continuing Education).

COMPLETION REQUIREMENTS:
Students seeking a Certificate of Occupational Proficiency must obtain a minimum of 2.00 ("C") in each course and must satisfy all other graduation requirements.

Minimum Semester Hours Required (29)

SUGGESTED COURSE SEQUENCING

Fall Semester	*Sem Hrs*	*Con Hrs*
MAMT 107 Machine Shop Math	2	30
CSCI 100 Computers in our Society	3	45
ENGR 105 Basic Engr Drawing	3	45
ENGR 105L Basic Engr Drawing Lab	1	25
ENGR 106 Beginning Computer Aided Drafting	2	30
ENGR 106L Beg Comp Aid Draft Lab	2	45
MAMT 106 Geometric Tolerancing	1	15
	15	235

Spring Semester	*Sem Hrs*	*Con Hrs*
CADT 107 Computer Aided Draft	2	30
CADT 107L Comp Aided Draft Lab	2	45
CADT 110 CAD Application	2	30
CADT 110L CAD Application Lab	2	45
Electives**	4	
ENGW 087 Vocational Comm	3	45
	15	195

+ electives

*Approval of this program is pending.
**Four semester hours of electives with approval of adviser or CADT 100 Basic CAD/CAM.

COMMERCIAL ART

(Associate of Applied Science)

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

DEGREE REQUIREMENTS:
Students seeking an Associate of Applied Science degree must obtain a minimum of 2.00 ("C") in each GRCO course and must satisfy all other graduation requirements (see pp. 57-58).

Minimum Semester Hours Required (73)

1. Nine (9) semester hours of English satisfied by completing any one of the following sequences: (9)
   ENGW 111 and 112, or 115
   and
   ENGW 251

2. Plus six (6) semester hours selected from the following: (6)

ANTH 101, 102, 222	HIST 101, 102, 131, 132
ECON 201, 202	POLS 101, 256, 261
ENLI 131, 132, 134, 135	PSYC 121, 122
141, 142, 145	SOCI 210
GEOG 103	SOCO 144, 260

3. Required Art and Commercial Art Courses: (54)

ARTE 101	(3)	GRCO 115, 115L	(2)	GRCO 220	(3)
ARTE 102	(3)	GRCO 120	(2)	GRCO 221	(3)
ARTE 151	(3)	GRCO 121	(2)	GRCO 230, 230L	(4)
ARTE 154	(1)	GRCO 130	(1)	GRCO 242, 242L	(4)
ARTE 190	(1)	GRCO 131	(1)	GRCO 243, 243L	(3)
ARTE 193	(2)	GRCO 132	(1)	GRCO 270	(1)
ARTE 251	(3)	GRCO 142, 142L	(3)	GRCO 299	(4)
GRCO 110	(1)	GRCO 143, 143L	(3)		

4. Physical Education Activities: (4)
Complete four (4) credit hours from courses numbered PHYE 100-199 (See Associate Degree Requirements)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Con Hrs*	*Spring Semester*	*Sem Hrs*	*Con Hrs*
ENGW 111 English Composition	3	47	ENGW 112 or ENGW 115 English	3	47
ARTE 101 Two Dimensional Design	3	70	ARTE 154 Ink Drawing	1	32
ARTE 151 Basic Drawing	3	92	ARTE 102 3-Dimensional Design	3	70
GRCO 110 Surv/Comm Art/ Print Proc	1	17	GRCO 121 Basic Layout & Design	2	32
GRCO 115 Intro/Computer Graphics	1	17	GRCO 142 Mech Image Production	1	17
GRCO 115L Intro/Comp Graphics Lab	1	30	GRCO 142L Mech Image Prod Lab	2	30
GRCO 120 Typography/ Type Design	2	32	GRCO 143 Computer Composition	1	17
GRCO 130 Basic Photography	1	17	GRCO 143L Comp Composition Lab	2	30
GRCO 132 Darkroom Techniques	1	24	PE Activity	2	48
PE Activity	2	48		17	323
	18	394			

Second Year:

Fall Semester			*Spring Semester*		
ARTE 190 Mixed Media	2	32	ARTE 251 Figure Drawing	3	92
ARTE 193 Airbrush	2	62	ENGW 251 Creative Writing	3	47
GRCO 220 Design & Illustration I	3	47	GRCO 131 Photo Finishing	1	17
GRCO 230 Process Photo I	1	17	GRCO 221 Design & Illustration II	3	47
GRCO 230L Process Photo I Lab	3	60	GRCO 243 Computer Illustration	1	17
GRCO 242 Desktop Imaging	1	17	GRCO 243L Comp Illustratn II Lab	2	30
GRCO 242L Desktop Imaging Lab	3	67	GRCO 270 Portfolio	1	17
Soc/Behavior Sci requirement (from "b" above)	3	47	Soc/Behavior Sci requirement (from "b" above)	3	47
	18	349		17	314

Any Semester, Fall, Spring or Summer
GRCO 299 Internship 4

ELECTRIC LINEWORKER

(Certificate of Occupational Proficiency)

Students receive field training and practical theory in all phases of powerline installation and maintenance. An outdoor school laboratory covers climbing, setting and removing various sizes of poles; guy work; conductors; transformers; street lights; installation of services; and the use and care of safety equipment. Climbing and working on poles and towers is required. Prospective students are encouraged to contact the college about physical requirements. This program begins **only** in the fall semester of each year.

COMPLETION REQUIREMENTS:
Students seeking a Certificate of Occupational Proficiency must obtain a minimum of 2.00 ("C") in each listed courses, except ELCL 111 and ELCL 120, and must satisfy all other graduation requirements.

Students will also 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 PHYA 265 offered by Mesa State College.

Minimum Semester Hours Required (39)

Fall Semester	*Sem Hrs*	*Con Hrs*
ELCL 111 Math Basic Electricity	5	77
ELCL 120 Fundamentals/Elect I	5	77
ELCL 131 Elect Distrib Theory I	4	77
ELCL 136L Related Fundamentals I	4	190
Standard First Aid & CPR Require		
	18	421

Spring Semester	*Sem Hrs*	*Con Hrs*
ELCL 132 Elect Distrib Theory II	4	62
ELCL 132L Elect Dist Theory II Lab	2	47
ELCL 137 Related Fundamentals II	2	32
ELCL 137L Related Fund II Lab	4	120
ELCL 140 Underground Procedure	4	75
ELCL 140L Undergrnd Proced Lab	2	60
ELCL 145 Hotline Procedure	1	16
ELCL 145L Hotline Procedure Lab	2	48
	21	460

Summer and/or Fall Semester
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 V.A. benefits.

ELCL 199 Internship	6	640

ELECTRONIC ENGINEERING TECHNOLOGY

(Associate of Science)

Engineering technology has become very important in the fields of electronics and computer hardware. The engineering technologist works closely with engineers and technicians to assure proper installation and optimum operation of electronic systems. The Associate of Science program is designed specifically to transfer to a four-year baccalaureate degree program in the same field. It, by itself, is not designed for specific employment preparation after only two years of study. Ten specified electronics courses are the same as would be taken as a part of the Certificate or A.A.S. degree program in Electronics Technology and will apply toward the completion of this degree. The curriculum is in compliance with State agency policy governing the subject matter content and purpose of Associate of Science degrees.

DEGREE REQUIREMENTS: (68 credit hours, minimum)

Note: Students wishing to do so may enroll for from 3-6 additional credit hours to complete the program as outlined. However, all general education credits must be completed to receive the Associate of Science degree (see pp. 55-57). Students should consult with their faculty advisers.

1. *General Education:* (35 credit hours minimum)
   a. English (6)
      ENGW 111 and 112
   b. Speech (3)
      SPCH 102
   c. Social and Behavioral Sciences (6)
      One or two different disciplines from the following:

ANTH 101, 102	POLS 101
ECON 201, 202	PSYC 121, 122
GEOG 103	SOCO 260, 264
HIST 101, 102, 131, 132	

d. Humanities (6)
Select one or two disciplines of the following:

ARTE 211, 212	ENLI 131, 132, 141, 142
FLAF 111, 112, 251, 252	MUSA 220
FLAG 111, 112, 251, 252	PHIL 275
FLAS 111, 112, 251, 252	

e. Mathematics (4-5 credit hours) and Science (5 credit hours)
MATH Requirement (4)
PHYS 111, 111L (5)

2. *Additional Minimum Program Requirements*
a. Mathematics (5 credit hours)
MATH 151 (5)

b. Computer Science
Pascal, FORTRAN, or other approved language (4)
Consult with adviser

c. Electronics Technology (20)

ELCT 117, 117L	(4)	ELCL 246, 246L	(4)
ELCL 118, 118L	(4)	ELCL 270, 270L	(4)
ELCL 244, 244L	(4)		

d. Physical Education Activities (4)
Complete four (4) credit hours from courses numbered PHYE 100-199 (See Associate Degree Requirements)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 112 English Composition	3
MATH Math (see above)	4	ELCT 118 AC Passive Circuits	3
ELCT 117 DC Passive Circuits	3	ELCT 118L AC Passive Circuits Lab	1
ELCT 117L DC Passive Circuits Lab	1	CSCI Approved Computer Language	4
Social/Behav Science Requirement	3	Social/Behav Science Requirement	3
SPCH 102 Speechmaking	3	PHYE Physical Ed Activity	1
PHYE Physical Ed Activity	1		

Second Year:

ELCT 244 Electronic Circuits I	3	ELCT 246 Applied Digital Circuits	2
ELCT 244L Elect. Circuits I Lab	1	ELCT 246L Applied Digital Circ Lab	2
PHYS 111 General Physics I	4	ELCT 270 Linear Integrated Circuits	3
PHYS 111L General Physics I Lab	1	ELCT 270L Linear Integrated Cic Lab	1
MATH Mathematics (See above)	5	PHYS 112 General Physics II	4
Humanities Requirements	3	PHYS 112L General Physics II Lab	1
PHYE Physical Ed Activity	1	Humanities Requirement	3
		PHYE Physical Ed Activity	1

ELECTRONICS TECHNOLOGY

(Associate of Applied Science)

Electronic science and applied electronics with emphasis areas in computers (hardware/software concepts and applications), industrial control circuits (automation and robotics) and communications. With approval of an instructor, a student may enter the program at any time (open entry) and study at his own pace. This is especially beneficial to a non-traditional student and those who must work and can only attend classes at night.

DEGREE REQUIREMENTS:
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 (see pp. 57-58).

Minimum Semester Hours Required (77-78 hrs.)

1. Six (6) semester hours of English satisfied by completing any one of the following sequences: (6)
   ENGW 086 and 087, or 121
   or
   ENGW 090 and 111
   or
   ENGW 111 and 112, 115, 121, or 129

2. Plus six (6) semester hours selected from the following: (6)

ANTH 101, 102, 222	HIST 101, 102, 131,
ECON 201, 202	132, 136, 137
ENLI 131, 132, 134, 135,	POLS 101, 256, 261
141, 142, 145	PSYC 121, 122
GEOG 103	SOCO 144, 260

3. Mathematics (7-8)
   ENGT 101, 102
   or
   MATH 113, 130

4. Electronics Courses: (49)

ELCT 117, 117L	(4)	ELCT 256, 256L	(4)
ELCT 118, 118L	(4)	ELCT 262, 262L	(4)
ELCT 232, 232L	(4)	ELCT 264, 264L	(4)
ELCT 244, 244L	(4)	ELCT 270, 270L	(4)
ELCT 246, 246L	(4)	ELCT 272, 272L	(5)
ELCT 254, 254L	(4)	ELCT 280, 280L	(4)

5. Required Related Courses: (3)
   a. Computer Science
      CSCI 100 or 120
      or
      3 credit hours from CISB 102, 103, 104, 105

6. Approved Electives: (2)

7. Physical Education: (4)
   Complete four (4) credit hours from courses numbered PHYE 100-199 (See Associate Degree Requirements)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Con Hrs*	*Spring Semester*	*Sem Hrs*	*Con Hrs*
Voc Comm/English Requirement	3	45	Voc Comm/English Requirement	3	45
ELCT 117 DC Passive Circuits	3	45	ELCT 232 Personal Computers I	2	30
ELCT 117L DC Passive Circuits Lab	1	30	ELCT 232L Personal Comp I Lab	2	60
ELCT 118 AC Passive Circuits	3	45	ELCT 244 Electronic Circuits I	3	45
ELCT 118L AC Passive Circuits Lab	1	30	ELCT 244L Electronic Circ I Lab	1	30
MATH 113 College Algebra or			ELCT 264 Electronic Circuits II	3	45
ENGT 101 Technical Math I	4	60	ELCT 264L Electronic Circ II Lab	1	30
CISB 102, 103, 105 or			MATH 130 Trigonometry or		
CSCI 120 Computer Software	3	45	ENGT 102 Technical Math II	3-4	60
PE Activity	2	48		18-19	345
	20	348			

Second Year:

Fall Semester			*Spring Semester*		
ELCT 246 Applied Digital Circuits	2	30	ELCT 254 Industrial Circuits	3	47
ELCT 246L Appl. Digital Circ Lab	2	60	ELCT 254L Industrial Circuits Lab	1	30
ELCT 256 Electronic Commun	3	45	ELCT 272 Personal Computers III	3	45
ELCT 256L Elect Commun Lab	1	30	ELCT 272L Personal Comp III Lab	2	60
ELCT 262 Personal Computers II	2	30	ELCT 280 Project Design	2	32
ELCT 262L Personal Comp II Lab	2	60	ELCT 280L Project Design Lab	2	60
ELCT 270 Linear Integrated Circ	3	45	Approved Elective	2	30
ELCT 270L Linear Integ Circ Lab	1	30	General Education	3	45
General Education	3	45	PE Activity	2	45
	19	375		20	394

ELECTRONICS TECHNOLOGY

(Certificate of Occupational Proficiency)

COMPLETION REQUIREMENTS:
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.

Minimum Semester Hours Required (57 hrs.)

First Year:

First Semester	*Sem Hrs*	*Con Hrs*	*Second Semester*	*Sem Hrs*	*Con Hrs*
ELCT 117 DC Passive Circuits	3	45	ELCT 244 Electronic Circuits I	3	45
ELCT 117L DC Passive Circ Lab	1	30	ELCT 244L Elec Circuits I Lab	1	30
ELCT 118 AC Passive Circuits	3	45	ELCT 264 Electronic Circuits II	3	45
ELCT 118L AC Passive Circ Lab	1	30	ELCT 264L Elect Circuits II Lab	1	30
CISB 102, 103 & 105 or			ELCT 232 Personal Computers I	2	32
CSCI 120 Computer Software	3	45	ELCT 232L Pers. Computers I Lab	2	60
MATH 020 Beginning Algebra	3	45		12	242
	14	240			

Second Year:

Third Semester			*Fourth Semester*		
ELCT 246 Applied Digital Circuits	2	30	ELCT 254 Industrial Circuits	3	47
ELCT 246L Appl Digital Circ Lab	2	60	ELCT 254L Industrial Circuits Lab	1	30
ELCT 256 Electronic Communication	3	45	ELCT 272 Personal Computers III	3	47
ELCT 256L Elect Comm Lab	1	30	ELCT 272L Personal Comp III Lab	2	60
ELCT 262 Personal Computers II	2	30	ELCT 280 Project Design	2	32
ELCT 262L Personal Comp II Lab	2	60	ELCT 280L Project Design Lab	2	60
ELCT 270 Linear Integrated Circ	3	45	Approved Elective*	2	32
ELCT 270L Linear Integ Circ Lab	1	30		15	308
	16	330			

*Approved elective may be chosen from an electronics independent study, computer science, business, or mathematics.

Students should check with an Electronics instructor/adviser about various other possible certificate options.

MACHINE TRADES AND MANUFACTURING TECHNOLOGY

Machining and machining technology careers involve the skillful operation of lathes, milling machines, specialized grinders, and other technical equipment to make precision fit metal parts and components such as gears, shafts, cylinders, pump housings and certain tools as well as parts for aircraft, ships, engines, rockets, and others. Virtually every metal part that has to have close fitting tolerance is manufactured by some machining process. Traditional lathes and milling machines as well as computerized metal working machines are used by manufacturing companies.

Three program options are available to students. These include a two semester Certificate of Occupational Proficiency program available to students desiring preparation for immediate employment in machining/machine shop occupations. A two-year Associate of Applied Science degree is offered in Machining Technology. This program is designed to prepare students for machining requiring a higher level of technical expertise. The emphasis is on operating machines such as numerical controlled lathes, mills or machining centers, but related mathematics and sciences are included. The third option, the Associate of Science degree, is designed for students who wish to pursue a four-year degree in Manufacturing Technology or Manufacturing Engineering. Certain courses in machining will apply to all three programs.

MACHINING TECHNOLOGY
(Associate of Applied Science)

The Associate of Applied Science degree program includes many of the same technical courses as the Certificate of Occupational Proficiency. Also included are mathematics, science, electronics and management courses which are essential for job advancement to more technical levels after employment.

DEGREE REQUIREMENTS:
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 (see pp. 57-58).

Minimum Semester Hours Required (77)

1. English (6 credit hours from the following) (6)
   ENGW 090 and 111
   or
   ENGW 111 and 112 or 115

2. Social and Behavioral Sciences (6 credit hours from the following) (6)
   ANTH 101, 102, 222
   ECON 201, 202
   ENLI 131, 132, 134, 135, 141, 142, 145
   GEOG 103
   HIST 101, 102, 131, 132
   POLS 101
   PSYC 121, 122
   SOCO 144, 260, 264

3. PHYS 100 (3)

4. Mathematics (8)
   ENGT 101, 102

5. Required Related Courses: (11)
   INSA 110, 110L Basic Electronics and Lab (4)
   ENGR 106, 106L Beginning Computer Aided Drafting and Lab (4)
   BUGB or MANG course to be selected in consultation with adviser (3)

6. Machining Courses: (39)

MAMT 105	(2)	MAMT 125, 125L	(4)	MAMT 151, 151L	(4)
MAMT 106	(1)	MAMT 130, 130L	(4)	MAMT 155, 155L	(4)
MAMT 110	(1)	MAMT 135, 135L	(3)	MAMT 160, 160L	(2)
MAMT 115, 115L	(3)	MAMT 140, 140L	(3)	MAMT 165	(2)
MAMT 120, 120L	(4)				

   Plus either MAMT 145 and 145L (2) or MAMT 207 (2)

7. Physical Education Activities: (4)
   Completion of four credit hours selected from courses numbered PHYE 100-199. See "Associate Degree Requirements," page 52.

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Con Hrs*	*Spring Semester*	*Sem Hrs*	*Con Hrs*
MAMT (from above list)	9	Varies	MAMT (from above list)	11	Varies
ENGW English Requirement	3	47	ENGW English Requirement	3	47
ENGT 101 Technical Math I	4	60	ENGT 102 Technical Math II	4	60
Soc/Behavioral Sci Requirement	3	47	PE Activity	1	24
PE Activity	1	24		19	Varies
	20	Varies			

Second Year:

Fall Semester			*Spring Semester*		
MAMT (from above list)	9	Varies	MAMT (from above list)	10	Varies
INSA 110 Basic Electronics	3	47	ENGR 106 Comp Aided Drafting	2	32
INSA 110L Basic Electronics Lab	1	25	ENGR 106L Comp Aided Draft Lab	2	64
PHYS 100 Concepts of Physics	3	47	MANG 201 Prin of Management	3	47
Soc/Behavioral Sci Requirement	3	47	PE Activity	1	24
PE Activity	1	24		18	Varies
	20	Varies			

MANUFACTURING TECHNOLOGY

(Associate of Science)

The Manufacturing Technology emphasis is designed primarily to transfer to a four-year baccalaureate degree program in one of several manufacturing fields such as Manufacturing Engineering or Manufacturing Engineering Technology. It, by itself, is not designed for specific employment preparation after only two years of study. Six specified courses are the same as would be taken in the Certificate program in Machine Trades and will apply toward the completion of this degree. The curriculum is in compliance with state agency policy governing the subject matter content and purpose of Associate of Science degrees. Students seeking only fast track employment skills are referred to the certificate or AAS degree programs.

DEGREE REQUIREMENTS:
Minimum Semester Hours Required (68)

1. *General Education:* (35 credit hours minimum)
   a. English (six credit hours) (6)
      ENGW 111 and 112

b. Speech (three credit hours) (3)
SPCH 102

c. Social and Behavioral Sciences (six credit hours) (6)

ANTH 101, 102,	POLS 101
ECON 201, 202	PSYC 121, 122
GEOG 103	SOCO 260, 264
HIST 101, 102, 131, 132	

d. Humanities (six credit hours selected from the following) (6)

ARTE 211, 212	ENLI 131, 132, 141, 142
FLAF 111, 112, 251, 252	MUSA 220
FLAG 111, 112, 251, 252	PHIL 275
FLAS 111, 112, 251, 252	

e. Mathematics (four credit hours) and Science (five credit hours) (9-10)
i. MATH 113 or 151 (4-5)
Note: Either of the above will satisfy the general education core requirement. Students are also required to complete additional Math coursework; see "Additional Minimum Program Requirements."

ii. PHYS 111, 111L (5)

2. *Additional Minimum Program Requirements* (38)

a. Mathematics (8 credit hours)
MATH 130 and 151 (with MATH 113 above)
or
MATH 152 and 253 (with MATH 151 above)

b. Engineering Technology (4 credit hours)
ENGR 105, 105L, or 106, 106L

c. Machining and Manufacturing (19 credit hours)
The following courses are required:

MAMT 105	MAMT 125, 125L
MAMT 115, 115L	MAMT 151, 151L
MAMR 120, 120L	MAMT 165

d. Computer science (3 credit hours)
CSCI 100 recommended

e. Physical Education Activities (4 credit hours)
Completion of 4 credit hours selected from courses numbered PHYE 100-199

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 112 English Composition	3
MATH Mathematics (see above)	4	MATH Mathematics (see above)	3
CSCI Computer course	3	Soc/Behavioral Sci Requirement	3
Soc/Behavioral Sci Requirement	3	ENGR 105 Eng Tech (See 2b above)	4
MAMT 105 Blueprint-Machinist	2	MAMT Machine-Mfg. Requirement	4
MAMT 115 Intro to Mach Shop	1		
MAMT 115L Intro to Mach Shop Lab	2		
PHYE Physical Ed Activity	1		

Second Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
PHYS 111 General Physics I	4	Math/Sci electives with consent of instructor	6
PHYS 111L General Physics I Lab	1	Soc/Behaviorial Sci Requirement	3
Soc/Behaviorial Sci Requirement	3	MAMT 151 Numerical Control I	2
MATH Mathematics Requirement	5	MAMT 151L Numerical Control I Lab	2
MAMT Machine-Mfg requirement	4	MAMT 165 Manufacturing Processes	2
PHYE Physical Ed Activity	1	PHYE Physical Ed Activity	2

MACHINE AND MANUFACTURING TRADES

(Certificate of Occupational Proficiency)

The Machine and Manufacturing Trades certificate program is designed to give students an opportunity to develop knowledge and competency considered essential for employment as entry level or "apprentice" level machinists. Persons not having an adequate background in mathematics or three dimensional perception skill will be encouraged to enroll in preparatory courses either as prerequisites or co-requisites. Open entry and flexible scheduling is possible in this program.

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.

COMPLETION REQUIREMENTS:
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.

Minimum Semester Hours Required (43)

Fall Semester	*Sem Hrs*	*Con Hrs*	*Spring Semester*	*Sem Hrs*	*Con Hrs*
MAMT 105 Blueprint Reading	2	30	MAMT 130 Machine Technology III	1	20
MAMT 106 Geometric Tolerance	1	15	MAMT 130L Machine Tech III Lab	.3	70
MAMT 107 Machine Shop Math	2	30	MAMT 135 Job Shop Machining I	1	15
MAMT 110 Gauging/Meas Tools	1	15	MAMT 135L Job Shop Mach I Lab	.2	45
MAMT 115 Intro to Machine Shop	1	15	MAMT 140 Job Shop Machining II	1	15
MAMT 115L Intro to Machine Shop	2	45	MAMT 140L Job Shop Mach II Lab	.2	45
MAMT 120 Machine Technology I	1	20	MAMT 151 Num Control-Mach I	2	30
MAMT 120L Machine Tech I Lab	.3	70	MAMT 151L Num Cont-Mach I Lab	.2	45
MAMT 125 Machine Tech II	1	20	MAMT 155 Num Cont-Mach II	2	30
MAMT 125L Machine Tech II Lab	.3	70	MAMT 155L Num Cont-Mach II Lab	2	45
MAMT 160 Properties of Materials	.1	15	MAMG 165 Manufact Processes	2	30
MAMT 160L Properties of Mat Lab	1	15	ENGW English Requirement	3	47
	19	360		23	437

HEAVY EQUIPMENT-DIESEL MECHANICS

(Certificate of Occupational Proficiency)

The program is designed to provide a wide range of training in the field of heavy equipment/diesel mechanics maintenance. The longer the student stays in training, the more advanced skill and job potential is possible. Students may enter employment at any lesser skill level or continue through the entire program. The complete two-year program includes training in internal combustion engines, diesel engines, clutches and transmissions, hydraulics, electrical systems, industrial welding and other related areas.

COMPLETION REQUIREMENTS:
Students seeking a Certificate of Occupational Proficiency must obtain a minimum grade of 2.00 ("C") in each required MECD course, in MECH 125, and INSA 220 and must satisfy all other graduation requirements.

Minimum Semester Hours Required (76)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Con Hrs*	*Spring Semester*	*Sem Hrs*	*Con Hrs*
MECD 115 Heavy Equipment Maint	.2	30	MECD 150 Fluid Power	.4	60
MECD 115L Heavy Equip Maint Lab	.1	22	MECD 150L Fluid Power Lab	.3	68
MECD 132 Heavy Equip Drvtr I	.3	45	MECH 113 Internal Combust Eng	.3	45
MECD 132L Hvy Equip Drvtr I Lab	.3	67	MECH 113L Intern Comb Eng Lab	.4	90
MECH 105 Intro/Shop Practices	.2	30	MECH 133 Climate Control Systems	.3	45
MECH 105L Intro/Shop Pract Lab	.1	22	MECH 133L Climate Cont Sys Lab	.1	23
MECH 125 Light Duty Brakes	.2	30	INSA 110 Basic Electronics	.3	47
MECH 125L Light Duty Brakes Lab	.2	45	INSA 110L Basic Electronics Lab	.1	30
MATH 015 Basic Mathematics	.3	47		22	408
	19	338			

Second Year:

Fall Semester			*Spring Semester*		
MECD 232 Hvy Equip Drivetrain II	.3	45	MECD 222 Fuel Systems	.3	45
MECD 232L Hvy Eq Drvtrn II Lab	.3	67	MECD 223L Diesel Eng Perform Lab	.3	67
MECD 275L Heavy Equip Repair	.3	67	MECD 225 Diesel Eng Recondition	.3	45
INSA 220 Industrial Safety Pract	.4	62	MECD 225L Diesel Eng Recond Lab	.4	90
WELD 151 Industrial Welding	.1	17	Human Relation/Business or		
WELD 151L Industrial Welding Lab	.2	45	AUBF 220 Shop Management	.3	47
ENGW 086 minimum	.3	45		16	294
	19	348			

PRINTING TECHNOLOGY

(Associate of Applied Science)

A two-year technical program designed to prepare a student for employment with business, industry, and printing reproduction systems. The program develops the student's basic skills in visual information design; visual information reproduction; and visual information recording, storage, and retrieval.

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

Minimum Semester Hours Required (72-73)

1. Six semester hours of English satisfied by completing any one of the following sequences: (6)
   ENGW 086 and 087, or 121
   or
   ENGW 087 and 090 and 111
   or
   ENGW 111 and 112, 115, 121, or 129

2. Plus nine semester hours selected from the following: (9)

ANTH 101, 102, 222	HIST 101, 102, 131, 132
ECON 201, 202	POLS 101, 256
ENLI 131, 132, 134, 135, 141, 142, 145	PSYC 121, 122
GEOG 103	SOCO 144, 260

3. Required Art, Printing, and Safety Courses: (48)

ARTE 101	(3)	GRCO 130	(1)	GRCO 231,231L	(4)
INSA 220	(4)	GRCO 132	(1)	GRCO 242,242L	(4)
GRCO 110	(1)	GRCO 142,142L	(3)	GRCO 251,251L	(4)
GRCO 115,115L	(2)	GRCO 143,143L	(3)	GRCO 260	(3)
GRCO 120	(2)	GRCO 150,150L	(3)	GRCO 281	(4)
GRCO 121	(2)	GRCO 230,230L	(4)		

4. Mathematics (3)
MATH 015 or higher

5. Electives (3)

6. Physical Education Activities (4)
Complete four (4) credit hours from courses numbered PHYE 100-199 (See Associate Degree Requirements)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Con Hrs*	*Spring Semester*	*Sem Hrs*	*Con Hrs*
ARTE 101 Two Dimensional Design	3	70	ENGW Voc/Comm Requirement	3	47
INSA 220 Industrial Safety Pract	4	62	GRCO 121 Basic Layout/Design	2	32
GRCO 110 Surv/Comm Art/Print Proc	1	17	GRCO 142 Mechanical Image Prod	1	17
GRCO 115 Intro/Computer Graphics	1	17	GRCO 142L Mech Image Prod Lab	2	30
GRCO 115L Intro/Comp Graphics Lab	1	30	GRCO 143 Computer Composition	1	17
GRCO 120 Typography/Type Design	2	32	GRCO 143L Comp Composition Lab	2	30
GRCO 130 Basic Photography	1	17	GRCO 150 Offset Press I	1	17
GRCO 132 Darkroom Techniques	1	24	GRCO 150L Offset Press I Lab	2	68
Soc/Behavioral Science (from "2" above	3	47	Soc/Behavioral Science (from "2" above)	3	47
PE Activity	2	48	PE Activity	2	48
	19	364		19	353

Second Year:

Fall Semester			*Spring Semester*		
MATH 015 Basic Math or higher	3	47	GRCO 231 Process Photo II	1	17
ENGW Voc/Comm Requirement	3	47	GRCO 231L Process Photo II Lab	3	68
GRCO 230 Process Photo I	1	17	GRCO 260 Cost Estimating	3	47
GRCO 230L Process Photo I Lab	3	68	GRCO 281L Production	4	122
GRCO 241 Desktop Imaging	1	17	General Education Elective	3	47
GRCO 241L Desktop Imaging Lab	3	68	Open Elective	3	47
GRCO 251 Offset Press II	1	17		17	348
GRCO 251L Offset Press II Lab	3	68			
	18	349			

WELDING

(Associate of Applied Science)

Courses are designed to give students an adequate knowledge of metals, layout work, and welding processes, along with an opportunity to gain manipulative skills and the related information needed to enter and progress in various welding occupations. Instruction and shop practice is offered in SMAW, GMAW, FCAW, and GTAW of mild steel in all positions as well as pipe and specialty welding. Various cutting and fabrication methods are included. Students can arrange work experience as an elective part of the regular program after completing two semesters or more.

COMPLETION REQUIREMENTS:
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.

Minimum Semester Hours Required (76)

1. English (six semester hours of English satisfied by completing any one of the following sequence: (6)
   ENGW 086 and 087, or 121
   or
   ENGW 090 and 111
   or
   ENGW 111 and 112, 115, 121, or 129

2. Six semester hours selected from the following: (6)

ANTH 101, 102, 222	HIST 101, 102, 131, 132
ECON 201, 202	POLS 101, 256, 261
ENLI 131, 132, 134, 135, 141, 142, 145	PSYC 121, 122
GEOG 103	SOCO 144, 260, 264

3. Mathematics (3)
   MATH 015 or higher

4. Required Courses: (54 hrs.)

WELD 110,110L	(8)	WELD 122	(2)	WELD 210,210L	(3)
WELD 112	(4)	WELD 131	(2)	WELD 220,220L	(3)
WELD 117,117L	(2)	WELD 132	(2)	WELD 230,230L	(3)
WELD 120,120L	(8)	WELD 141	(4)	WELD 240,240L	(8)
WELD 121	(2)	WELD 145	(3)		

5. Physical Education Activities (4)
   Complete four credit hours selected from courses numbered PHYE 100-199 (See Associate Degree Requirements)

6. Electives (3 hrs) (3)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Con Hrs*	*Spring Semester*	*Sem Hrs*	*Con Hrs*
ENGW English Requirement	3	47	ENGW English Requirement	3	47
WELD 110 Shield/Metal Arc Weld I	1	17	WELD 120 Shielded Met Art Weld II	1	17
WELD 110L S/Metal Arc Weld I Lab	7	165	WELD 120L S/Metal Arc Weld II Lab	7	165
WELD 112 Weld Theory	4	62	WELD 121 Blueprint Reading I	2	30
WELD 117 Oxy-Fuel Weld/Cutting I	1	17	WELD 131 Fabrication Layout I	2	30
WELD 117L Oxy-Fuel Weld/Cut I Lab	1	22	PE Activity	2	48
MATH 015 or higher	3	47		17	337
	20	377			

Second Year:

Fall Semester	*Sem Hrs*	*Con Hrs*	*Spring Semester*	*Sem Hrs*	*Con Hrs*
WELD 122 Blueprint Reading II	2	30	WELD 141 Shop Mgmt/Struct Theory	4	62
WELD 132 Fabrication Layout II	2	30	WELD 145 Metallurgy	3	47
WELD 210 Gas Metal Arc Welding	1	17	WELD 240 S/Metal Arc Weld III	1	17
WELD 210L Gas Metal Arc Welding	2	45	WELD 240L S/Metal Arc Weld III Lab	7	165
WELD 220 Flux Core Arc Welding	1	17	Soc/Behavioral Science Requirement	3	47
WELD 220L Flux Core Arc Weld Lab	2	45	Elective	3	47
WELD 230 Gas Tungsten Arc Weld	1	17		21	385
WELD 230L Gas Tungst Arc Weld Lab	2	45			
Soc/Behavioral Science Requirement	3	47			
PE Activity	2	48			
	18	341			

WELDING

(Certificate of Occupational Proficiency)

Certificate programs are designed for beginning level employment. Students should check with a Welding instructor/adviser about options for specialized employment training requiring a shorter period of training.

Minimum Semester Hours Required (39)

COMPLETION REQUIREMENTS:

First Semester	*Sem Hrs*	*Con Hrs*	*Second Semester*	*Sem Hrs*	*Con Hrs*
WELD 110 S/Metal Arc Welding I	1	17	MATH 015 Basic Mathematics	3	47
WELD 110L S/Metal Arc Weld I Lab	7	165	WELD 120 S/Metal Arc Welding II	1	17
WELD 112 Welding Theory	4	62	WELD 120L S/Metal Arc Weld II Lab	7	165
WELD 117 Oxy-Fuel Weld/Cutting I	1	17	WELD 122 Blueprint Reading II	2	30
WELD 117L Oxy-Fuel Weld/Cut I Lab	1	22	WELD 132 Fabrication Layout II	2	30
WELD 121 Blueprint Reading I	2	30	WELD 210 Gas Metal Arc Welding	1	17
WELD 131 Fabrication Layout I	2	30	WELD 210L Gas Metal Arc Weld Lab	2	45
	18	343	WELD 220 Flux Core Arc Welding	1	17
			WELD 220L Flux Core Arc Weld Lab	2	45
				21	413

SCHOOL OF NATURAL SCIENCES AND MATHEMATICS

James B. Johnson, Acting Dean

Departments and Faculties

Agriculture and Home Economics
B. Keefer, R. Moran, (Chair)
Biological Sciences
R. Ballard, B. Bauerle, P. Chowdry (Chair)
E. Huribut, W. Kelley,
G. McCallister, S. Werman
Chemistry and Physics
O. Boge, G. Gilbert (Chair), L. Madsen,
J. Marshall, P. Misra, W. Putnam
Computer Science, Mathematics and Engineering
C. Bailey, C. Barkley, C. Britton, J. Brock,
C. Childers, W. Davenport, A. Ektare, D. Fuquay,
D. Hafner, E. Hawkins (Chair), J. Henson,
C. Kerns, J. Kramer, D. Mottram, T. Mourey,
T. Novotny, L. Payne, J. Reuszer, J. Rybak,
L. Tooke, K. Topper, J. Wethington, Z. Wu
Geology
D. Foutz (Chair), J. Johnson, V. Johnson, J. Roadifer

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

The School of Natural Sciences and Mathematics offers academic programs leading to baccalaureate (4-year) degrees, associate (2-year) degrees, and certificates (9-month) with areas of study emphasis 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 emphasis must satisfy all of the requirements for each emphasis and indicate both on the Petition to Graduate.

BACHELOR OF SCIENCE IN BIOLOGICAL AND AGRICULTURAL SCIENCES

(A four-year emphasis in agriculture is not being offered currently.)

Area of Emphasis:
Biological Sciences
Biology

BACHELOR OF SCIENCE IN PHYSICAL AND MATHEMATICAL SCIENCES

Areas of Emphasis:
Mathematical Sciences
Computer Science
Computer Science Business Software
Mathematics
Physical Sciences
Geology
Physics

ASSOCIATE OF SCIENCE

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

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

ASSOCIATE OF APPLIED SCIENCE

Environmental Restoration Engineering Technology

CERTIFICATE OF OCCUPATIONAL PROFICIENCY

Farm and Ranch Business Management

ADDITIONAL AREAS OF STUDY — Preprofessional preparation for transfer to other institutions.

Areas of Emphasis:
- Preforestry
- Medical Technology
- Pharmacy
- Physical Therapy

Areas of Study

The following is a list of the areas of study emphasis available (together with the degrees or certificates offered and reference to the catalog page on which detailed information can be found):

Areas of Study Emphasis Available	*Degrees/Certificates*	*Details*
Agriculture	AS	p. 125
Biology*	BS, AS	p. 125, 127
Computer Science	BS, AS	p. 129, 131
Computer Science Business Software	BS	p. 130
Engineering	AS	p. 131
Environmental Restoration Engineering Technology	AAS	p. 132
Farm and Ranch Business Management	Certificate	p. 133
Geology*	BS, AS	p. 133
Mathematics*	BS, AS	p. 136
Physics*	BS, AS	p. 138

*Teacher certification is available. See pp. 124, 127, 134, 136, 139.

General Information

Preprofessional Preparation

- Predentistry
- Premedicine
- Preoptometry
- Preveterinary Medicine
- Prephysical Therapy

Some of the health professions require graduate study (postbaccalaureate). Admission to the study of dentistry, medicine, optometry, or veterinary medicine in a graduate school is usually obtained by an applicant with a bachelors' degree. Competition for these limited spaces is keen. Since no preprofessional study is an academic emphasis in itself, a student expecting to seek admission to one of these schools should plan to earn a Bachelor of Science degree with one of the designated emphases. This provides not only a competitive background in the quest for professional school admission but also a different career path alternative in the event of rejection. Interested students should plan their programs carefully in consultation with an adviser.

Health Related Studies

Premedical Technology Prepharmacy

Some health professions can be entered after baccalaureate studies only. Preparation to complete baccalaureate programs such as medical technology, pharmacy, or physical therapy can begin with two years of study at Mesa State College. After that a student may transfer to an institution offering one of those specific majors. Alternatively the student may continue studies at Mesa State College, earn a bachelor's degree, and then enter a special program in one of these fields specifically provided for possessors of bachelors' degrees. Students interested in these studies should consult an adviser in planning their programs.

Engineering and Forestry

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

Teacher Certification

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

Certification to teach mathematics is obtained with a mathematics emphasis as described in the section on mathematics of this catalog. Certification to teach science, however, is somewhat complicated by the fact that science is not an academic emphasis in itself. A student wishing such certification should plan to earn a Bachelor of Science in Biological and Agricultural Sciences degree with an emphasis in biology or a Bachelor of Science in Physical and Mathematical Sciences degree with an emphasis in geology or physics as described in the appropriate sections of this catalog. For information about elementary certification and additional information about secondary certification the student should see the Director of Teacher Education and Certification.

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.

Degree Requirements

Following are the course requirements for the certificate, associate degree, and bachelor degree programs in the School of Natural Sciences and Mathematics. Also listed are suggested course sequences for full-time study in the programs. Advisers should be consulted regarding the third and fourth year course sequences in baccalaureate programs. The arrangement is alphabetical by emphasis discipline.

AGRICULTURE

(Associate of Science)

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

Minimum semester hours required: 64 hrs.

1. *General Education:* (33 hrs. plus 4 hrs. physical education) Must satisfy the general education requirements for the Associate of Science degree listed in the "Graduation Requirements" section of this catalog.

2. *Course requirements in discipline:*

AGRI 110, 110L	Crop Production and Laboratory	(4)
AGRI 113, 113L	Introduction to Animal Science and Laboratory	(4)
AGRI 142	Agricultural Economics	(3)
AGRI 202, 202L	Soils and Laboratory	(4)
AGRI 205	Farm and Ranch Management	(5)
AGRI 254, 254L	Livestock Feeding and Laboratory	(4)

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

BIOLOGY

(Bachelor of Science in Biological and Agricultural Sciences)

DEGREE REQUIREMENTS

1. *General Education:* (40 hrs. plus 4 hrs. physical education)

ENGW 111,112 English Composition	(6)
BIOL 105, 105L Attributes of Living Systems	(5)
*Psychology	(3)
*Social Science	(9)
*Arts	(3)
*Literature	(3)
*Humanities	(3)

Physical Sciences and Mathematics selected from:

CHEM 121, 121L, 122, 122L	(10)	MATH 113	(4)
CHEM 131, 131L, 132, 132L	(10)	MATH 130	(3)
GEOL 111, 111L, 112, 112L	(10)	MATH 146	(5)
PHYS 111, 111L, 112, 112L	(10)	MATH 151, 152	(10)
		STAT 200	(3)

2. *Required Core Courses:* (40 hrs.)

BIOL 106, 106L	(5)	Courses generating 19 to 21	
BIOL 107, 107L	(5)	hours credit selected from:	
BIOL 301, 301L	(5)	MATH 113	(4)
BIOL 482	(2)	MATH 130	(3)
BIOL 483	(2)	MATH 146	(5)
or		MATH 151, 152	(10)
BIOL 499	(4)	STAT 200	(3)
		CHEM 121, 121L, 122, 122L	(10)
		or CHEM 131, 131L, 132, 132L	(10)
		or CHEM 311, 311L, 312, 312L	(10)
		PHYS 111, 111L, 112, 112L	

3. *Required Emphasis Courses:* (22 hrs.)
Courses generating 22 semester hours of credit selected from groups a-f listed below. At least four of the groups must be represented in the aggregate.

a. Cellular, Developmental, and Molecular Biology:

BIOL 201, 201L	(5)	BIOL 343, 343L	(3)
BIOl 202, 202L	(4)	BIOL 425	(3)

b. Organismal Biology:

BIOL 221, 221L	(3)	BIOL 411, 411L	(3)
BIOL 231, 231L	(4)	BIOL 412, 412L	(3)
BIOL 250, 250L	(5)	BIOL 416, 416L	(4)
BIOL 331, 331L	(4)	BIOL 450, 450L	(4)

c. Anatomical and Physiological Biology:

BIOL 141, 141L	(5)	BIOL 421, 421L	(5)
BIOL 341, 341L	(4)	BIOL 423, 423L	(3)
BIOL 342, 342L	(4)	BIOL 441, 441L	(4)

d. Ecological Biology:

BIOL 111	(2)	BIOL 414, 414L	(3)
BIOL 211, 211L	(5)	BIOL 415	(2)

e. Evolutionary and Systematic Biology:

BIOL 320	(3)	BIOL 403	(3)
BIOL 321, 321L	(3)		

f. Medical Biology:

BIOL 241	(4)	BIOL 431, 431L	(4)
BIOL 315	(3)	BIOL 442	(3)

4. *Electives:* (18 hrs.)

SUGGESTED COURSE SEQUENCING: (first two of the four years)

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 112 English Composition	3
BIOL 105,105L Attributes Liv Sys	5	BIOL 106,106L Prin Animal Biology	5
MATH 113 College Algebra	4	MATH 130 Trigonometry	3
*Social Science	3	*Social Science	3
PE Activity	1	PE Activity	1

Second Year:

Fall Semester	*Spring Semester*
BIOL 107,107L Prin Plant Biology 5	BIOL 201,201L Devopmental Biology or BIOL 202,202L Cellular Biology or BIOL 211,211L Ecosystem Biol 4-5
CHEM 131,131L General Chemistry 5	CHEM 132,132L General Chemistry 5
*Psychology 3	*Social Science 3
*Literature 3	*Arts 3
PE Activity 1	PE Activity 1

*See pp. 49-52 for listing of approved general education courses.

BIOLOGY EMPHASIS WITH TEACHER CERTIFICATION

(Bachelor of Science in Biological and Agricultural Sciences)

Any student interested in this program should see an adviser in *both* the Biology Department and the Teacher Certification Department as soon as possible (no later than the sophomore year).

DEGREE REQUIREMENTS:

1. *General Education:* (40 hrs. plus 4 hrs. physical education)

ENGW 111, 112 English Composition	(6)
BIOL 105, 105L Attributes of Living Systems	(5)
*Psychology	(3)
*Social Science	(9)
*Art	(3)
*Literature	(3)
*Humanities	(3)
Physical Sciences	(8)

*See pp. 49-52 for listing of approved general education courses.

2. *Required Core Courses:* (46 hrs.)

*BIOL 105, 105L	(5)		
BIOL 106, 106L	(5)	Either	
BIOL 107, 107L	(5)	a. BIOL 483	(2)
BIOL 301, 301L	(5)	or	
BIOL 482	(2)	b. BIOL 499	(4)

*If not taken for General Education requirements

Additional biology courses generating (22) semester hours of credit selected from courses listed below.

BIOL 141, 141L	(5)	BIOL 330, 330L	(3)
BIOL 211, 211L	(5)	BIOL Upper Division	
BIOL 250, 250L	(5)	Biology Course	(3)

3. *Related Study Area Requirements:* (19 hrs.)
At least one class must be taken from each subject matter area (chemistry, physics, and math) listed below:

a. *Degree Requirements*

i. Chemistry:

CHEM 121, 121L	(5)	CHEM 132, 132L	(5)
CHEM 122, 122L	(5)	CHEM 311, 311L	(5)
CHEM 131, 131L	(5)	CHEM 312, 312L	(5)

ii. Physics

PHYS 100	(3)	PHYS 111, 111L	(5)
PHYS 101	(3)	PHYS 112, 112L	(5)

iii. Mathematics and Statistics:

MATH 113	(4)	MATH 151, 152	(10)
MATH 130	(3)*	STAT 200	(3)
MATH 146	(5)		

*Prerequisite for Physics 111, 112

b. *Secondary Certification*
One course in Geology and one course in Computer Science required from the following:

CSCI 100	(3)	GEOL 103	(3)
CSCI 111	(3)	GEOL 105	(3)
CSCI 112	(3)	GEOL 111, 111L	(5)
CSCI Computer Language		GEOL 112, 112L	(5)

4. *Education Courses* (27 hours)

BIOL 393	(3)	EDUC 360	(4)
EDUC 220	(3)	EDUC 370	(3)
EDUC 260	(2)	EDUC 405	(4)
EDUC 320	(3)	EDUC 494	(2)
EDUC 350	(3)		

After fulfilling the Bachelor of Science degree requirements specified in the above program, the following may be taken:
EDUC 499g (12)

BIOLOGY

(Associate of Science)

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

Minimum semester hours required: 64 hrs.

1. *General Education:* (33 hrs. plus 4 hrs. physical education) Must satisfy the general education requirements for the Associate of Science degree.

2. *Course requirements in discipline:*

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)

Additional courses in biology specialization should be selected in consultation with adviser.

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

COMPUTER SCIENCE

(Bachelor of Science in Physical and Mathematical Sciences)

DEGREE REQUIREMENTS:

1. *General Education:* (43 hrs. plus 4 hrs. physical education)

ENGW 111 English Composition	(3)
ENGW 115 Technical Writing	(3)
*Biology and Psychology	(9)
*Social Sciences	(9)
*Arts/Literature/Humanities	(9)
MATH 151, 152	(10)

2. *Required Core Courses:* (35 hrs.)

CSCI 111,112	(6)	MATH 369	(4)
CSCI 131,131L	(4)	MATH 370	(3)
CSCI 250	(3)	PHYS 121	(4)
MATH 265	(3)	PHYS 122,122L	(5)
MATH 361	(4)		

3. *Required Emphasis Courses:* (21 hrs.)

CSCI 241	(3)	CSCI 373	(3)
CSCI 242	(3)	CSCI 450	(3)
CSCI 321	(3)	CSCI 470	(3)
CSCI 330	(3)		

4. *Restricted Electives:* (18 hrs.)
Three courses from each of the following lists:

MATH 253	(4)	STAT 200	(3)
MATH 310	(3)	STAT 311	(3)
MATH 390	(3)	STAT 312	(3)
MATH 450	(3)	STAT 313	(3)
MATH 452	(3)		

5. *Unrestricted electives:* (7 upper division hrs.)

SUGGESTED COURSE SEQUENCING: (first two of the four years)

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Comp	3	ENGW 115 Technical Writing	3
CSCI 111 Computer Science I	3	CSCI 112 Computer Science II	3
CSCI 131,131L FORTRAN Prog	4	MATH 152 Calculus II	5
MATH 151 Calculus I	5	PHYS 121 Classical Phys I	4
PE Activities	2	PE Activities	2

Second Year:

Fall Semester		*Spring Semester*	
CSCI 241 Computer Architecture I	3	CSCI 242 Computer Architecture II	3
CSCI 250 Data Structures	3	MATH 253 Calculus III	4
MATH 369 Math Logic/Discrete Struc	3	MATH 265 Linear Algebra	3
PHYS 122 Classical Physics II	4	STAT 200 Probability & Statistics	3
PHYS 122L Experimental Mech Lab	1	*Arts	3
*Humanities	3	*Biology or Psychology	3

*See pp. 49-52 for listing of approved general education courses.

COMPUTER SCIENCE BUSINESS SOFTWARE

(Bachelor of Science in Physical and Mathematical Sciences)

DEGREE REQUIREMENTS:

1. *General Education:* (43 hrs. plus 4 hrs. physical education)
   - ENGW 111 English Composition (3)
   - ENGW 115 Technical Writing (3)
   - *Biology and Psychology (9)
   - *Social Sciences (9)
   - *Arts/Literature/Humanities (9)
   - MATH 151, 152 (10)

2. *Required Core Courses:* (38-39 hrs.)

CSCI 111,112	(6)	STAT 200 or 214	(3)
CSCI 131,131L	(4)	MATH 265	(3)
CSCI 250	(3)	MATH 369	(4)
CSCI 321	(3)	MATH 361	(3)
CHEM 131,131L,132,132L	(10)		
or GEOL 111,111L,112,112L	(10)		
or PHYS 121,122,122L	(9)		

3. *Required Emphasis Courses:* (21 hrs.)

CSCI 330	(3)	CISB 131	(3)
CSCI 373	(3)	CISB 231	(3)
CSCI 460	(3)	CISB 442	(3)
CSCI 470	(3)		

4. *Restricted Electives:* (12 hrs.)
   Two courses from each of the following lists:

BUGB 231	(3)	ACCT 201	(3)
MANG 201	(3)	ACCT 202	(3)
FINA 339	(3)	ACCT 311	(3)
STAT 311	(3)	ACCT 331	(3)

5. *Electives:* (5-6 hrs.)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 115 Technical Writing	3
CSCI 111 Computer Science I	3	CSCI 112 Computer Science II	3
MANG 201 Prin of Management	3	*Social Science	6
MATH 151 Calculus I	5	MATH 152 Calculus II	5
CISB 131 COBOL Programming I	3	PE Activity	1
PE Activity	1		

Fall Semester		*Spring Semester*	
CSCI 250 Data Structures	3	CSCI 131,131L FORTRAN Prog	4
BUGB 231 Survey of Business Law	3	STAT 214 Business Statistics	3
ACCT 201 Prin of Accounting I	3	ACCT 202 Principles of Acct II	3
MANG 270 Prin. of Mgmt	3	*Biology	3
MATH 369 Math Logic/Discrete Struc	3	*Arts	3
PE Activity	1	PE Activity	1

*See pp. 49-52 for listing of approved general education courses.

COMPUTER SCIENCE

(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 emphasis and also for other programs at Mesa State College and at other colleges. Faculty advisers will assist students in planning programs to meet requirements. Programs of study in the sciences are very sequential and advanced planning for the transition from an associate program to a baccalaureate program is imperative for economy of time and effort.

Minimum semester hours required: 64 hrs.

1. *General Education:* (33 hrs. plus 4 hrs. physical education) Must satisfy the general education requirements for the Associate of Science degree.

CSCI 111 Computer Science I	(3)
CSCI 112 Computer Science II	(3)
CSCI 241 Computer Architecture I	(3)
CSCI 242 Computer Architecture II	(3)
CSCI 250 Data Structures	(3)

It is recommended that a strong background in mathematics (at least calculus sequence) be completed simultaneously.

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

ENGINEERING

(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 emphasis and also for other programs at Mesa State College and at other colleges. Faculty advisers will assist students in planning programs to meet requirements. Programs of study in the sciences are very

sequential and advanced planning for the transition from an associate program to a baccalaureate program is imperative for economy of time and effort.

Minimum semester hours required: 64 hrs.

1. *General Education:* (33 hrs. plus 4 hrs. physical education) Must satisfy the general education requirements for the Associate of Science degree.

2. *Course requirements in disciplines:*

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

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

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

ENVIRONMENTAL RESTORATION ENGINEERING TECHNOLOGY

(Associate of Applied Science)

DEGREE REQUIREMENTS:

1. *General Education:*

English	(6)*
Social or Behavioral Science or Literature	(6)*

2. *Required Courses:* (77 hrs.)

BIOL 105, 105L	(5)	ENGS 214	(3)
CHEM 121,121L,122,122L	(10)	ENGS 215	(4)
CSCI 120	(3)	ENGS 216	(4)
ENGW 111	(3)	ENGS 217	(2)
ENGW 115	(3)	ENGS 218	(2)
ENGR 105, 105L	(4)	GEOL 111, 111L	(5)
ENGS 110	(3)	MATH 130	(3)
ENGS 111	(3)	MATH 141	(3)
ENGS 211	(3)	A.A.S. General Ed*	(6)
ENGS 213	(4)	PE Activity	(4)

SUGGESTED COURSE SEQUENCING:

First Year:

	Sem Hrs	*Con Hrs*		*Sem Hrs*	*Con Hrs*
CSCI 120 Technical Software	3	45	BIOL 105, 105L Attrib/Living Sys	5	90
ENGS 110 Survey/Env Restoration	3	45	ENGS 111 Environ Health and Safety	3	45
ENGW 111 English Composition	3	45	ENGS 211 Hazard/Radioactive Waste	3	45
GEOL 111, 111L Physical Geology	5	90	ENGS 217 Environ Law and Regs	2	30
MATH 130 Trigonometry	3	45	ENGW 115 Technical Writing	3	45
PE Activities	2	48	MATH 141 Analytical Geometry	3	45
	19	318		19	300

Second Year:

Fall Semester			*Spring Semester*		
CHEM 121,121L Intro/Inorgan Chem.	.5	90	CHEM 122,122L Intro/Inorgan Chem.	.5	90
ENGR 105,105L Basic Engr Drg	.4	75	ENGS 215 Instrumentation/Lab Tech.	.4	75
ENGS 213 Site Characterization	.4	75	ENGS 216 SARA Training	.4	60
ENGS 214 Documents/Quality Assur.	.3	45	ENGS 218 Capstone/Environ Restor.	.2	30
*A.A.S. Gen Educ Requirements	.3	45	*A.A.S. Gen Educ Requirements	.3	45
PE Activities	.2	48		18	300
	21	378			

NOTE: Two-hour final examinations are required in addition to the contact hours shown above.

*See Associate of Applied Science Degree requirements under the "Graduation Requirements" section of this catalog for general education listing.

FARM AND RANCH BUSINESS MANAGEMENT

(Certificate of Occupational Proficiency)

The certificate program in Farm and Ranch Business Management is undergoing revision. Students who are interested in this certificate should request advice from the Chairperson of the Department of Agriculture and Home Economics.

GEOLOGY

(Bachelor of Science and Mathematical Sciences)

DEGREE REQUIREMENTS:

1. *General Education:* (40 hrs. plus 4 hrs. physical education)

ENGW 111 English Composition	(3)
ENGW 112 or 115 English Composition or Technical Writing	(3)
SPCH 101 or 102 Interpersonal Communications or Speechmaking	(3)
BIOL 105, 105L Attributes of Living Systems, Lab	(5)
*Literature	(6)
ECON 201, 202 Macro/Microeconomics	(6)
*Psychology	(3)
*Social Science	(3)
MATH 113	(4)
CSCI 131, 131L	(4)

2. *Required Core Courses:* (35-36 hrs.)

GEOL 111, 111L,112,112L	(10)	CHEM 131,131L,132,132L	(10)
GEOL 201,201L	(3)	PHYS 111,111L,112,112L	
GEOL 203	(3)	or PHYS 121,122,122L	(9-10)

3. *Required Emphasis Courses:* (21 hrs.)

GEOL 301,301L	(4)	GEOL 380	(6)
GEOL 331,331L	(4)	GEOL 496	(3)
GEOL 340,340L	(4)		

4. *Restricted Electives:* (8 hrs.)

BIOL 106,106L		MATH 130	(3)
or BIOL 107,107L	(5)		

SUGGESTED COURSE SEQUENCING: (first two of the four years)

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 112 English Composition	3
GEOL 111,111L Prin Physical Geol	5	GEOL 112,112L Prin Historical Geol	5
MATH 113 College Algebra	4	MATH 130 Trigonometry	3
BIOL 105,105L Attributes Liv Sys	5	BIOL 106,106L Prin Animal Biology	5
PE Activity	1	PE Activity	1

Second Year:

Fall Semester		*Spring Semester*	
GEOL 201,201L Stratigraphy	3	GEOL 203 Intro to Environ Geol	3
CHEM 131,131L General Chemistry	5	CHEM 132,132L General Chemistry	5
PHYS 111,111L Gen Physics	5	PHYS 112,112L Gen Physics	5
ECON 201 Prin Macroeconomics	3	ECON 202 Prin Microeconomics	3
PE Activity	1	PE Activity	1

*See pp. 49-52 for listing of approved general education courses.

GEOLOGY EMPHASIS WITH SECONDARY TEACHER CERTIFICATION

(Bachelor of Science in Physical and Mathematical Sciences)

DEGREE REQUIREMENTS:

1. *General Education:* (40-42 hours plus 4 hrs. of physical education activities)
   - ENGW 111 English Composition (3)
   - ENGW 112 English Composition (3)
   - *Biology and Psychology electives (6)
   - PSYC 233 Human Growth and Development (3)
   - *Humanities and Fine Arts electives (6)
   - SPCH 102 Speechmaking (3)
   - MATH 113 College Algebra (4)
   - MATH 130 Trigonometry (3)
   - ECON 201 Principles of Macroeconomics (3)
   - ECON 202 Principles of Microeconomics (3)
   - GEOG 103 World Regional Geography (3)
   - PHYE Physical Education Activities (4)

2. *Required Geological Sciences* (46 hrs.)

GEOL 103	(3)	GEOL 340, 340L	(4)
GEOL 111, 111L	(4)	GEOL 380	(6)
GEOL 112, 112L	(4)	GEOL 390	(3)
GEOL 203	(3)	GEOL 402, 402L	(4)
GEOL 301, 301L	(4)	GEOL 444, 444L	(4)
GEOL 331, 331L	(4)	GEOL 496	(3)

3. *Related Study Area Requirements* (13 hrs.)

CHEM 131, 131L	(5)	PHYS 111, 111L	(5)
PHYS 101	(3)		

4. *Education Requirements* (27 hrs.)

BIOL 393	(3)	EDUC 360	(4)
EDUC 220	(3)	EDUC 370	(3)
EDUC 260	(2)	EDUC 405	(4)
EDUC 320	(3)	EDUC 494	(2)
EDUC 350	(3)		

A fifteen-week experience is required after all other coursework outlined above has been completed and approved:

EDUC 499G (12)

*See pp. 49-52 for listing of approved general education courses.

SUGGESTED COURSE SEQUENCING: (first two of the four years)

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 112 English Composition	3
GEOL 111, 111L Prin. Phys. Geol & Lab	5	GEOL 112, 112L Prin. Hist. Geol. & Lab	5
MATH 113 College Algebra	4	PSYC 233 Human Growth & Devel.	3
GEOL 103 Weather & Climate	3	MATH 130 Trigonometry	3
PE Activity	1	SPCH 102 Speechmaking	3
		PE Activity	1

Second Year:

Fall Semester		*Spring Semester*	
EDUC 220 Found/Legal Aspects/Educ	3	EDUC 260 Teach. Diverse Populations	2
CHEM 131, 131L Gen. Chem. & Lab	5	GEOL 203 Intro. Environmental Geology	3
GEOG 103 World Regional Geography	3	CSCI 131, 131L FORTRAN Prog. & Lab	4
PHYS 111, 111L Gen. Physics & Lab	5	BIOL 105, 105L Attrib. Liv. Syst. & Lab	5
PE Activity	1	Humanities General Education	3
		PE Activity	1

GEOLOGY

(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 emphasis and also for other programs at Mesa State College and at other colleges. Faculty advisers will assist students in planning programs to meet requirements. Programs of study in the sciences are very sequential and advanced planning for the transition from an associate program to a baccalaureate program is imperative for economy of time and effort.

Minimum semester hours required: 64 hrs.

1. *General Education:* (33 hrs. plus 4 hrs. physical education) Must satisfy the general education requirements for the Associate of Science degree.

2. *Course requirements in discipline:*

GEOL 111, 111L Principles of Physical Geology and Laboratory	(5)
GEOL 112, 112L Principles of Historical Geology and Laboratory	(5)
GEOL 201, 201L Stratigraphy	(3)
GEOL 203 Introduction to Environmental Geology	(3)

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

MATHEMATICS

(Bachelor of Science in Physical and Mathematical Sciences)

DEGREE REQUIREMENTS:

1. *General Education:* (43 hrs. plus 4 hrs. physical education)
   - ENGW 111 English Composition (3)
   - ENGW 115 Technical Writing (3)
   - *Biology and Psychology (9)
   - *Social Sciences (9)
   - *Arts/Literature/Humanities (9)
   - CSCI 111,112,131,131L (10)
2. *Required Core Courses:* (35 hrs.)

CSCI 241,242	(6)	MATH 253	(4)
CSCI 250	(3)	PHYS 121	(4)
CSCI 380	(3)	PHYS 122,122L	(5)
MATH 151,152	(10)		

3. *Required Emphasis Courses:* (25 hrs.)

MATH 260	(3)	MATH 370	(3)
MATH 265	(3)	MATH 390	(3)
MATH 310	(3)	MATH 450	(3)
MATH 361	(4)	MATH 452	(3)

4. *Restricted Electives:* (9 hrs.)
   Three courses from the following list:

STAT 200	(3)	STAT 313	(3)
STAT 311	(3)	CSCI 445	(3)

5. *Unrestricted Electives:* (12 upper division hrs.)

SUGGESTED COURSE SEQUENCING: (first two of the four years)

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 115 Technical Writing	3
CSCI 111 Computer Science I	3	CSCI 112 Computer Science II	3
CSCI 131,131L FORTRAN Programming	4	MATH 152 Calculus II	5
MATH 151 Calculus I	5	PHYS 121 Classical Physics I	4
PE Activities	2	PE Activities	2

Second Year:

Fall Semester		*Spring Semester*	
CSCI 241 Architecture I	3	CSCI 242 Architecture II	3
CSCI 250 Data Structures	3	MATH 260 Differential Equations	3
MATH 253 Calculus III	4	MATH 265 Linear Algebra	3
MATH 369 Math Logic/Discrete Struc	3	*STAT 200 Probability & Statistics	3
PHYS 122 Classical Physics II	4	*Arts	3
PHYS 122L Experimental Mech Lab	1	*Literature	3

*See pp. 49-52 for listing of approved general education courses.

MATHEMATICS EMPHASIS WITH TEACHER CERTIFICATION

(Bachelor of Science in Physical and Mathematical Sciences)

DEGREE REQUIREMENTS:

1. *General Education:* (42 hrs. plus 4 hrs. physical education)
   - ENGW 111 English Composition (3)
   - ENGW 115 Technical Writing (3)
   - *Biology and Psychology (9)
   - *Social Sciences (9)
   - *Arts/Literature/Humanities (9)
   - *Physical Sciences (9)

2. *Required Core Courses:* (35-37 hrs)

CSCI 111,112	(6)	CHEM 131,131L	
CSCI 120	(3)	132,132L	(10)
CSCI 131,131L	(4)	or GEOL 111,111L	
MATH 151,152	(10)	112,112L	(10)
MATH 253	(4)	or PHYS 121,122,122L	(9)
or MATH 260	(3)		

3. *Required Emphasis Courses:* (24 hrs.)

MATH 265	(3)	MATH 385	(3)
MATH 310 or 390	(3)	MATH 450 or 452	(3)
MATH 347	(3)	STAT 200	(3)
MATH 380	(3)	STAT 311	(3)

4. *Electives:* (36 hrs.)

The student must elect the following required courses for teacher certification:

EDUC 220	(3)	EDUC 370	(3)
EDUC 260	(2)	EDUC 405	(4)
EDUC 320	(3)	EDUC 494	(2)
EDUC 350	(3)	EDUC 499g	(12)
EDUC 360	(4)		

SUGGESTED COURSE SEQUENCING: (first two of the four years)

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 112 English Composition	3
CSCI 111 Computer Science I	3	or	
MATH 151 Calculus I	5	ENGW 115 Technical Writing	3
*General Education Elective	3	CSCI 112 Computer Science II	3
*General Education Elective	3	MATH 152 Calculus II	5
PHYE (2 different PE Activities)	2	PSYC 233 Human Growth & Develop	3
		*General Education Elective	3
		PHYE (2 different PE Activities)	2

Second Year:

Fall Semester	*Spring Semester*	
MATH 253 Calculus III	CSCI 120 Technical Software	3
or	MATH 265 Linear Algebra	3
MATH 260 Diff Equations	3-4	MATH 305 Euclidean Geom/Teachers	3
EDUC 220 Foundations of Educ	3	EDUC 260 Teaching Diverse Pop	2
SPCH 102 Speechmaking	3	STAT 200 Prob and Statistics	3
#Lab Science Elective	5	*Lab Science Elective	5
*General Education Elective	3		

*See pp. 49-52 for listing of approved general education courses.
#Restricted to choice of CHEM, GEOL or PHYS series as listed under "Required Core Courses" above.

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 emphasis and also for other programs at Mesa State College and at other colleges. Faculty advisers will assist students in planning programs to meet requirements. Programs of study in the sciences are very sequential and advanced planning for the transition from an associate program to a baccalaureate program is imperative for economy of time and effort.

Minimum semester hours required: 64 hrs.

1. *General Education:* (33 hrs. plus 4 hrs. physical education) Must satisfy the general education requirements for the Associate of Science degree.

2. *Course requirements in discipline:*

MATH 151	(5)	MATH 260	(3)
MATH 152	(5)	MATH 265	(3)
MATH 253	(4)		

CSCI 120 and STAT 200 are highly recommended to be included.

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

PHYSICS

(Bachelor of Science in Physical and Mathematical Sciences)

DEGREE REQUIREMENTS:

1. *General Education:* (42 hrs. plus 4 hrs. physical education)

ENGW 111,112 English Composition	(6)
BIOL 105,105L Attributes of Living Systems	(5)
*Psychology	(3)
*Arts/Literature/Humanities	(9)
MATH 151,152 Calculus I,II	(10)
HIST 101,102 Western Civilizations	(6)
*Social Science	(3)

2. *Core Requirements:* (42 hrs.)

PHYS 121,122,122L,223,223L	(13)	MATH 360	(3)
PHYS 224	(3)	CHEM 131,131L,132,132L	(10)
PHYS 482	(1)	or GEOL 111,111L,112,112L	
PHYS 494	(2)	or Computer Science courses,	
MATH 253	(4)	CSCI 111 and higher, yielding	
MATH 260	(3)	10 hours credit	
MATH 265	(3)		

3. *Emphasis Requirements:* (19 hrs.)

PHYS 311	(3)	PHYS 362	(3)
PHYS 321,322	(6)	PHYS 421	(3)
PHYS 331,332	(4)		

4. *Restricted Electives:* (12 hrs.)

Two courses from the following list:

PHYS 352	(3)	PHYS 432	(3)
PHYS 396	(3)	PHYS 441	(3)

Two courses from the following list:

MATH 361	(4)	MATH 452	(3)
MATH 390	(3)	CSCI course	(3)
MATH 450	(3)		

5. *Electives:* (7-8 hrs.)

SUGGESTED COURSE SEQUENCING: (first two of the four years)

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 112 English Composition	3
PHYS 121 Classical Physics I	4	PHYS 122 Classical Physics II	4
MATH 151 Calculus I	5	PHYS 122L Experimental Mech Lab	1
HIST 101 Western Civilizations	3	MATH 152 Calculus II	5
PE Activities	2	HIST 102 Western Civilizations	3

Second Year:

Fall Semester		*Spring Semester*	
MATH 253 Calculus III	4	PHYS 223 Classical Physics III	3
PHYS 224 Modern Physics	3	PHYS 223L Exper Electromag Lab	1
BIOL 105,105L Attib. of Liv Sys	5	MATH 260 Differential Equations	3
PSYC 121 Gen Psychology	3	PSYC 122 General Psychology	3
		*Literature	3
		PE Activities	2

*See pp. 49-52 for listing of approved general education courses.

PHYSICS EMPHASIS WITH TEACHER CERTIFICATION

(Bachelor of Science in Physical and Mathematical Sciences)

DEGREE REQUIREMENTS:

1. *General Education:* (40-42 hrs. plus 4 hrs. physical education)

ENGW 111	(3)
ENGW 112 or ENGW 115	(3)
BIOl 105, 105L	(5)
PSYC 233	(3)
SPCH 102	(3)
Humanities and Fine Arts (see general education requirements)	(5-6)
MATH 151, 152	(10)
HIST 101, 102	(6)
Social Science (see general education requirement)	(2-3)
Physical Education Activities	(4)

2. *Core Requirements:* (34-40 hrs.)

PHYS 121,122,122L 223,223L	(13)	CHEM 131,131L,132,132L or CHEM 151,151L	(5-10)
PHYS 482	(1)	CSCI 111	
PHYS 494	(2)	or CSCI 120	
MATH 253	(4)	or CSCI 131,131L	
MATH 260	(3)	or CSCI 133,133L	(3-4)
MATH 360	(3)		

3. *Emphasis Requirements:* (25 hrs.)

PHYS 224	(3)	PHYS 331,332	(4)
PHYS 311	(3)	PHYS 352	(3)
PHYS 321	(3)	PHYS 362	(3)
PHYS 322	(3)	PHYS 421	(3)

4. *Restricted Electives* (3-5 hrs.)

One course from the following list:

GEOL 100	(3)	GEOL 111, 111L	(5)
FEOL 105	(3)		

5. *Electives:* (39 hrs.)
   The student must elect the following required courses for teacher certification:

BIOL 393	(3)	EDUC 360	(4)
EDUC 220	(3)	EDUC 370	(3)
EDUC 260	(2)	EDUC 405	(4)
EDUC 320	(3)	EDUC 494	(2)
EDUC 350	(3)		

   After fulfilling the Bachelor of Science degree requirements specified in the above program, the following may be taken:
   EDUC 499g (12)

SUGGESTED COURSE SEQUENCING: (first two of the four years)

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 112 English Composition	3
BIOL 105, 105L Attrib/Living Sys	5	PHYS 121 Classical Physics I	4
MATH 151 Calculus I	5	MATH 152 Calculus II	5
HIST 101 Western Civilizations	3	HIST 102 Western Civilizations	3
PE Activities	2	SPCH 102 Speechmaking	3

Second Year:

Fall Semester		*Spring Semester*	
EDUC 220 Found/Legal/Aspects/Ed	3	EDUC 260 Teach Diverse Populations	2
MATH 253 Calculus III	4	ENLI 132 World Literature II	3
PSYC 233 Human Growth/Develop	3	MATH 260 Differential Equations	3
PHYS 122 Classical Physics II	4	PHIL 275 Intro to Logic	3
PHYS 122L Experimental Mech Lab	1	PHYS 223L Exper Electromag Lab	1
PE Activities	1	PE Activities	1

*See pp. 49-52 for listing of approved general education courses.

PHYSICS

(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 emphasis and also for other programs at Mesa State College and at other colleges. Faculty advisers will assist students in planning programs to meet requirements. Programs of study in the sciences are very sequential and advanced planning for the transition from an associate program to a baccalaureate program is imperative for economy of time and effort.

Minimum semester hours required: 64 hrs.

1. *General Education:* (33 hrs. plus 4 hrs. physical education) Must satisfy the general education requirements for the Associate of Science degree.

2. *Course requirements in discipline:*

PHYS 121	(4)	PHYS 223, 223L	(4)
PHYS 122, 122L	(5)	PHYS 224	(3)

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

SCHOOL OF NURSING AND ALLIED HEALTH

Mary A. Turley, Dean

Departments and Faculties

Nursing
H. Covington, S. Dickson, M. Forrest, A. Goley, J. Goodhart (BSN Chair), A. Lambeth, G. Reichlin, K. Reuss, L. Stahl, M. Suedekum, E. Williams B. Winter

Radiologic Technology
C. Clark-Sorensen (Director), P. Feely, C. Hines

The School of Nursing and Allied Health offers academic programs leading to the following: a baccalaurate (4-year) degree and two associate (2-year) degrees. Each program requires a separate admission application; deadlines vary according to the degree sought. For more specific information than is shown here, contact the School of Nursing and Allied Health.

Each new applicant must obtain from the School of Nursing and Allied Health written guidelines explaining any specific program requirements. All programs are fully accredited by the appropriate source including the National League for Nursing, and the Committee of Allied Health Education and Accreditation of the American Medical Association.

Students in most programs offered through the School of Nursing and Allied Health will be required to participate in clinical situtations, 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.

BACHELOR OF SCIENCE IN NURSING (BSN)

ASSOCIATE OF APPLIED SCIENCE (ADN)

Nursing
Radiologic Technology

The following is a list of the areas of study emphasis available (together with the degrees or certificates offered and reference to the catalog page on which detailed information can be found):

Areas of Study Available	*Degrees/Certificates*	*Details*
Nursing (ADN)	*AAS*	*p. 142*
Nursing (BSN)	*BSN*	*p. 143*
Radiologic Technology	*AAS*	*p. 145*

NURSING (ADN)

(Associate of Applied Science — Nursing)

This program is highly structured with specific prerequisite courses as well as specialized admission requirements. Admission materials must be on file in the Dean's office by March 1 for consideration the following fall semester. Enrollment is limited.

Graduates are eligible to take the examination for licensure as registered nurses who may serve in first level (staff nurse) positions in hospitals, nursing homes, physicians' offices, and other health agencies where adequate direction is provided.

Admission requirements include a composite ACT score of 18 or above, a composite Enhanced ACT of 20 or above, or combined SAT score of 810 or above. A high school diploma or G.E.D. is required. High school courses in biology, chemistry, and algebra or their college equivalent are recommended. An admissions committee selects students from applicants who best meet requirements. *All nursing courses must be completed in sequence.*

All students seeking credit for prior nursing learning experiences will follow "The Colorado Nursing Articulation Model" and will be required to take and successfully complete a nursing "bridge course" specifically designed for an LPN entering the program for degree completion or take and achieve a grade of 45 or better on the ACT-PEP examinations 403, 453, and 554. Contact the Mesa State College Testing Center to schedule these examinations. Please check with your adviser for further information.

Students transferring in credit for Human Anatomy and Physiology and/or Microbiology courses taken at other accredited colleges/universities must provide evidence that these courses had separate laboratory components before the course can be accepted to fulfill program requirements.

Progression: Students must have a 2.0 ("C") on a 4.0 scale or higher grade for *all* courses required for completion of the Associate 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.

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. 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.

Retention: A student will not be retained in the program if she/he receives a grade in any course in the ADN curriculum below a 2.0. Faculty members of a program may withdraw a student due to unsafe clinical practice or behavior jeopardizing professional practice.

DEGREE REQUIREMENTS:

1. *General Education:* (14 hrs. plus 4 hrs. physical education) Must satisfy the general education requirements for the Associate of Applied Science degree.
2. *Required Core Courses:* (40 hrs.)

NURS 113,113L	(9)	NURS 230,230L	(10)
NURS 123,123L	(9)	NURS 273	(2)
NURS 210,210L	(10)		

3. *Related Study Area Requirements:* (14 hrs.)

BIOL 141,141L	(5)
BIOL 241	(4)
BIOL 250,250L	(5)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Con Hrs*	*Spring Semester*	*Sem Hrs*	*Con Hrs*
BIOL 141,141L Human Anatomy	5	107	BIOL 250,250L Microbiology	5	107
CSCI 100 Comp in Our Society	3	47	NURS 123,123L Nurs Concepts II	9	257
NURS 113,113L Nurs Concepts I	9	197	PSYC 122 General Psychology	3	47
+PE Activities	2	48	+PE Activities	2	48
	19	399		19	459

Second Year:

Fall Semester			*Spring Semester*		
ENGW 111 English Composition	3	47	ENGW 112 English Composition	3	47
BIOL 241 Pathophysiology	4	47	NURS 230,230L Nurs Concp IV	10	302
NURS 210,210L Nurs Concepts III	10	287	NURS 273 Issues in Nursing	2	32
	17	381	*Social Science	3	47
				18	428

*See pp. 57-58 for listing of approved general education courses.
+ No more than two PHYE courses per semester, one per module.

NURSING (BSN)

(Bachelor of Science in Nursing)

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

Admission requirements include: satisfactory scores on the Scholastic Aptitude Test (SAT), 850 or above, or a composite American College Testing (ACT) score of 21 or better (scores of SAT 810 and ACT 19 will be accepted if the test is taken before October, 1989); high school diploma or GED; and a cumulative GPA of 2.00 or higher. High school courses in biology, chemistry and algebra are recommended. All first year college courses must be completed or in progress before a student can be admitted to the BSN program. An admissions committee selects students from applicants who best meet requirements. All admission materials must be on file in the dean's office March 1 for consideration the following fall semester.

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

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

Any RN who desired 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.

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

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.

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. 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.

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.

DEGREE REQUIREMENTS:

1. *General Education:* (42 hrs. plus 4 hrs. physical education)

ENGW 111,112 English Composition	(6)
BIOL 141,141L Human Anatomy/Physiology, Lab	(5)
PSYC 121 or 122 General Psychology	(3)
PSYC 233 Human Growth and Development	(3)
CSCI 100 Computers in Our Society	(3)
STAT 200 Statistics	(3)
*Physical Science or Math	(3)
*Social Sciences	(8-9)
*Arts	(3)
*Humanities	(6)

2. *Nursing (BSN) Course Requirements:* (54 hrs.)

NURS 225	(2)	NURS 425,425L	(5)
NURS 245,245L	(5)	NURS 435,435L	(5)
NURS 325	(2)	NURS 445,445L	(7)
NURS 335	(3)	NURS 455,455L	(5)
NURS 345,345L	(8)	NURS 475	(2)
NURS 355,355L	(4)	NURS 485	(2)
NURS 365,365L	(4)		

3. *Related Study Area Requirements:* (12 hrs.)

BIOL 241	(4)	HMEC 211	(3)
BIOL 250,250L	(5)		

4. *Electives:* (10 hrs.)

Upper division courses	(6)
Nursing electives	(4)

5. *Additional Nursing Courses Required for Advanced Placements:*

NURS 315	(3)	NURS 335L (RN only)	(1)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 112 English Composition	3
PSYC 233 Human Growth/Development	3	PSYC 121 or 122 General Psychology	3
*Social Sciences	3	*Social Sciences	3
*Humanities	3	*Phys. Science or Math	3
PE Activities	2	PE Activities	2

Second Year:

Fall Semester		*Spring Semester*	
BIOL 141,141L Human Anat/Physiol	5	BIOL 250,250L Microbiology	5
CSCI 100 Computers	3	NURS 245,245L Fund of Nursing	5
HMEC 211 Nutrition	3	*Arts	3
NURS 225 Intro to Nursing	2	*Humanities	3
*Social Sciences	3		

Third Year:

Fall Semester		*Spring Semester*	
BIOL 241 Pathophysiology	4	NURS 345,345L Nurs Process I	8
NURS 325 Pharmacology	2	or	
NURS 335 Health Assessment	3	NURS 355,355L Nurs Process II	4
NURS 345,345L Nurs Process I	8	and	
or		NURS 365,365L Nurs Process III	4
NURS 355,355L Nurs Process II	4	STAT 200 Statistics	3
and		Electives Upper Division	3
NURS 365,365L Nurs Process III	4	Electives (Nursing)	2
NURS 335L Health Assess (for RNs only)	1		

Fourth Year:

Fall Semester		*Spring Semester*	
NURS 425,425L Nurs Process IV and	5	NURS 425,425L Nurs Process IV and	5
NURS 435,435L Nurs Process V	5	NURS 435,435L Nurs Process V	5
or		or	
NURS 445,445L Nurs Proccess VI	7	NURS 445,445L Nurs Process VI	7
and		and	
NURS 455,455L Leadership	5	NURS 455,455L Leadership	5
NURS 475 Research	2	NURS 485 Professional Perspective	2
Electives Upper Division	3	Electives (Nursing)	2

*See pp. 49-52 for listing of approved general education courses.

RADIOLOGIC TECHNOLOGY

(Associate of Applied Science)

The Radiologic Technology graduate is eligible to take the examination administered by the American Registry of Radiologic Technologists. Applications must be received by September 1 for spring session. Admissions are limited and a pre-admission interview with the program director is required. Students are selected on the basis of academic preparation, ACT scores, aptitude for service within the field, and positions available in the program. Applicants should complete high school courses in biology, physics, chemistry, algebra, geometry, or their college equivalents. Students must have a 2.00 ("C") or higher for *all* courses required for completion of the Radiologic Technology Program. A "D" grade or lower in any required course is not acceptable. A grade point average of at least 2.00 ("C") must be maintained each semester and a grade no lower than 2.00 ("C") in any radiologic technology course may be received to continue in the program. Radiology classes must be completed in sequence

and may only be taken after being accepted to the program. General education requirements may be taken previously or simultaneously with programs courses.

DEGREE REQUIREMENTS:

1. *General Education:* (12 hrs. plus 4 hrs. physical education)
   ENGW 111, 112 English Composition (6)
   Social Science/Behavioral Psychology/Literature (6)

2. *Radiologic Technology Course Requirements* (63 hrs.)

RADT 110	(3)	RADT 133	(4)
RADT 121,121L	(3)	RADT 135	(2)
RADT 122,122L	(3)	RADT 243	(10)
RADT 123	(4)	RADT 251	(3)
RADT 125	(2)	RADT 253	(10)
RADT 131,131L	(3)	RADT 261	(3)
RADT 132,132L	(3)	RADT 263	(10)

3. *Related Study Area Requirements:* (8 hrs.)
   BIOL 141,141L (5)
   CSCI 100 (3)

SUGGESTED COURSE SEQUENCING:

First Year:

Spring Semester	*Sem Hrs*	*Con Hrs*
ENGW 111 English	3	47
CSCI 100 Computers in Our Society	3	47
RADT 110 Radiologic Introduction	3	47
Social Science or Psychology	3	47
PE Activities	2	48
	14	236

Fall Semester	*Sem Hrs*	*Con Hrs*
BIOL 141,141L Hum Anat/Physiol&L	5	107
RADT 121,121L Rad Tech I, Lab	3	64
RADT 122,122L Rad Prin I, Lab	3	62
RADT 123 Clinical Exp I	4	180
RADT 125 Radiologic Science I	2	32
PE Activity	1	24
	18	469

Spring Semester	*Sem Hrs*	*Con Hrs*
ENGW 112 English	3	47
Social Science or Psychology	3	47
RADT 131,131L Rad Tech II, Lab	3	64
RADT 132,132L Rad Prin II, Lab	3	62
RADT 133 Clinical Experience II	4	180
RADT 135 Radiologic Science II	2	32
PE Activity	1	24
	19	456

Second Year:

Summer Session		
RADT 243 Clinical Experience III	10	480

Fall Semester			*Spring Semester*		
RADT 251 Radiologic Technique III	3	47	RADT 261 Radiologic Technique VI	3	47
RADT 253 Clinical Experience IV	10	512	RADT 263 Clinical Experience V	10	512
	13	559		13	559

*See pp. 57-58 for listing of approved AAS for general education courses.

SCHOOL OF SOCIAL AND BEHAVIORAL SCIENCES

Daniel Arosteguy, Acting Dean

Departments and Faculties

Behavioral Sciences
C. Buys, J. Dorris, K. Ford, T. Graves, M. Heinrich, W. Meeker, G. Starbuck, H. Tiemann (Chair)

Physical Education and Recreation
S. Clough, R. Crick, S. Kirkham, J. Paronto, J. Perrin, K. Perrin, A. Sanders, D. Schakel, T. Swanson (Chair), E. Tooker, B. Wiehe, S. Yeager

Social Sciences
D. Arosteguy, L. Chere, J. Curtsinger, T. Inman, B. Michrina, L. Morton (Chair), J. Peer, P. Reddin, D. Rees, S. Schulte, J. Tomlinson, C. Wignall

Each student seeking a degree or certificate must obtain a program sheet from his or her faculty adviser or from the office of the Dean of the School of Social and Behavioral Sciences listing specific requirements for the degree sought. The School of Social and Behavioral Sciences offers academic programs leading to the following baccalaureate (4-year) degrees, associate (2-year) degrees, and certificate (9-month) programs with the areas of study emphasis indicated:

BACHELOR OF ARTS IN SOCIAL AND BEHAVIORAL SCIENCES

The degree has an interdisciplinary curriculum designed around a general core of courses with several disciplinary options. The core of each emphasis contains from 30 to 39 semester hours including one year-long social science series (selected from ECON 201 and 202; HIST 101 and 102; HIST 131 and 132; or POLS 101 and 102) and one year-long behavioral science series (selected from ANTH 101 and 102; PSYC 121 and 122; or SOCO 260 and 264). In addition, each emphasis includes 16-20 semester hours of coursework in the emphasis discipline mainly at the upper division level.

Areas of Emphasis:

Social Science
- Criminal Justice
- Economics
- General Social Science
- History
- Political Science

Behavioral Science
- Career Counseling and Guidance
- Counseling Psychology
- Human Services
- Psychology
- Sociology

BACHELOR OF ARTS IN RECREATION AND LEISURE SERVICES

Area of Emphasis: Municipal Parks and Recreation Management
Outdoor Recreation

ASSOCIATE OF ARTS (See Social Science - General, p. 160)

Areas of Emphasis: Anthropology
Criminal Justice
History
Physical Education
Political Science
Psychology

The following is a list of the areas of study emphasis available (together with the degrees or certificates offered and reference to the catalog page on which detailed information can be found):

Areas of Study Emphasis Available	*Degrees*	*Details*
Career Counseling and Guidance	BA	pp. 148
Counseling Psychology	BA	pp. 149
Criminal Justice	BA	pp. 150
Economics	BA	pp. 151
History	BA	pp. 152
Human Services	BA	pp. 154
Municipal Parks, Recreation Mgmt.	BA	pp. 155
Outdoor Recreation	BA	pp. 156
Political Science	BA	pp. 157
Psychology	BA	pp. 158
Selected Studies	BA	pp. 162
Sociology	BA	pp. 160
Social Science (General)	AA, BA	pp. 159
Teacher Certification		
Physical Education		pp. 157

CAREER COUNSELING AND GUIDANCE

(Bachelor of Arts in Social and Behavioral Sciences)

DEGREE REQUIREMENTS:

1. *General Education:* (41 hrs. plus 4 hrs. physical education)

ENGW 111 and 112	(6)
PSYC 121 and 122	(6)
*Biology	(3)
*Humanities/Fine Arts	(3)
*Literature	(3)
*Lit/Philosophy/Foreign Lang	(3)
#MATH 110	(2)
STAT 200 or STAT 214	(3)
*Comp Sci/Math/Phys Sci	(3)
*Social Science	(9)
Physical Education	(4)

2. *Required Core and Emphasis Courses:* (55-59 hrs.)

+Social Sciences	(9)	+ECON 201,201	(6)
+PSYC 340	(3)	+PCGU 320	(3)
+PSYC 400	(3)	PCGU 324	(3)
+PSYC 420	(3)	PCGU 420	(3)
+SOCO 260,264	(6)	PCGU 422	(3)
+HSER 301	(3)	PCGU 424	(3)
+EDUC 350	(3)	PCGU 497	(4)
		and/or PCGU 499	(4)

3. *Electives:* (open, 8-9; restricted, 15)

SUGGESTED COURSE SEQUENCING (first two of the four years)

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 112 English Composition	3
PSYC 121 General Psychology	3	PSYC 122 General Psychology	3
MATH 110 Finite Math	2	STAT 200 Probability/Statistics or STAT 214 Business Statistics	3
*Literature	3	*Humanities/Fine Arts	3
Elective	3	*Lit/Philosophy/Foreign Language	3
PE Activity	2	PE Activity	1

Second Year:

Fall Semester	*Spring Semester*
SOCO 260 General Sociology 3	SOCO 264 Social Problems 3
ECON 201 Prin of Macroeconomics 3	ECON 202 Prin of Microeconomics 3
*Biology 3	*Comp Sci/Math/Phys Sci 3
Electives 6	Electives 6
PE Activity 1	

*See pp. 49-52 for listing of approved general education courses.
+Core Courses
#Unless student has completed two years of high school algebra; if so, take another Computer Science, Math or Physical Science course.

COUNSELING PSYCHOLOGY

(Bachelor of Arts in Social and Behavioral Sciences)

DEGREE REQUIREMENTS:

1. *General Education:* (41 hrs. plus 4 hrs. physical education)

ENGW 111 and 112	(6)
PSYC 121 and 122	(6)
*Biology	(3)
*Fine Arts	(3)
*Literature	(3)
*Literature/Philosophy/Foreign Language	(3)
#MATH 110	(2)
STAT 200 or STAT 214	(3)
*Computer Science/Math/Physical Science	(3)
*Social Science	(9)
Physical Education	(4)

2. *Required Core and Emphasis Courses:* (52-59 hrs.)

+PSYC 340	(3)	PCGU 422	(3)
+PSYC 400	(3)	PCGU 424	(3)
PSYC 420	(3)	PCGU 497 and/or	
+ PCGU 320 and/or		PCGU 499	(4-8)
PCGU 324	(3-6)	+SOCO 260,264	(6)
PCGU 420	(3)		

+Six additional hours of upper division psychology courses (6)
+A social science core series (6)
+Additional social sciences (9)

3. *Electives:* (23-30 hrs.)

SUGGESTED COURSE SEQUENCING (first two of the four years):

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 112 English Composition	3
PSYC 121 General Psychology	3	PSYC 122 General Psychology	3
MATH 110 Finite Math	2	STAT 200 Probability/Statistics or	
*Literature	3	STAT 214 Business Statistics	3
Elective	3	*Humanities/Fine Arts	3
PE Activity	2	*Literature/Philosophy/F. Language	3
		PE Activity	1

Second Year:

Fall Semester		*Spring Semester*	
SOCO 260 General Sociology	3	SOCO 264 Social Problems	3
*Biology	3	*Computer Sci/Math/Physical Sci	3
*Social Science	3	Electives	9
Electives	6		
PE Activity	1		

*See pp. 49-52 for listing of approved general education courses.
#Unless student has completed two years of high school algebra; if so, take another Computer Science, Math, or Physical Science course.
+Core courses

CRIMINAL JUSTICE

(Bachelor of Arts in Social and Behavioral Sciences)

DEGREE REQUIREMENTS: 120 Hrs

1. *General Education* (41 hrs. plus 4 hrs. physical education)

ENGW 111 and 112	(6)
PSYC 121 and 122	(6)
*Biology	(3)
SPCH 101 or 102	(3)
*Literature	(3)
*Literature/Philosophy/Foreign Language	(3)
CSCI 100	(3)
#MATH 110	(2)
STAT 200	(3)
*POLS 101 and 102	(6)
*POLS 256	(3)
Physical Education Activity	(4)

2. *Required Core and Emphasis Courses* (54 hrs.)

+CSJU 111	(3)	+POLS 312	(3)
+CSJU 222	(3)	POLS 420	(3)
+CSJU 251	(3)	+SOCO 260	(3)
+CSJU 304	(3)	+SOCO 264	(3)
+CSJU 401	(3)	+SOCO 330	(3)
PCGU 420	(3)	+SOCI 310	(3)
+POLS 310	(3)	PSYC 320	(3)
+Additional upper division behavioral science		PSYC 330	(3)
		PSYC 420	(3)

3. *Electives:* (open, 19 hrs.; restricted, 6 hrs.)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 112 English Composition	3
CSJU 111 Intro to Admin of Justice	3	POLS 110 Dev/American Constitution	3
POLS 101 American Government	3	PSYC 122 General Psychology	3
PSYC 121 General Psychology	3	SPCH 101 Interpersonal Communication or SPCH 102 Speechmaking	3
CSCI 100 Computers/Society	3	PE Activity	2
PE Activity	2		

Second Year:

Fall Semester		*Spring Semester*	
*Humanities/Fine Arts/Literature	3	*Computer Sci/Math/Physical Science	3
CSJU 222 Police Patrol Operations	3	CSJU 251 Law Enforcement Procedure	3
POLS 256 State and Local Govt	3	SOCO 264 Social Problems	3
SOCO 260 General Sociology	3	Elective	6
Elective	3		

*See pp. 49-52 for listing of approved general education courses.
#Unless student has completed two years of high school algebra; if so, take another Computer Science, Math, Statistics, or Physical Science course.
+Core courses.

ECONOMICS

(Bachelor of Arts in Social and Behavioral Sciences)

DEGREE REQUIREMENTS:

1. *General Education:* (41-42 hrs. plus 4 hrs. physical education)

ENGW 111 and 112	(6)
#MATH 110 or MATH 221	(2-3)
*Biology and Psychology	(9)
*Computer Science/Math/Physical Science	(3)
STAT 200 or 214	(3)
*Literature	(3)
*Fine Arts	(3)
*Literature/Philosophy/Foreign Language	(3)
*Social Sciences	(9)
Physical Education	(4)

2. *Required Core and Emphasis Courses:* (48 hrs.)

+ECON 201 and 202	(6)	+ECON 342	(3)
+ECON 320	(3)	+ECON 343	(3)
+Additional Behavioral Sciences	(9)		
+A behavioral science core series	(6)		
Eighteen (18) hours selected from:			
ECON 301	(3)	ECON 410	(3)
ECON 310	(3)	ECON 420	(3)
ECON 312	(3)	ECON 496	(3)
ECON 401	(3)		

3. *Electives:* (30-31 hrs.)

SUGGESTED COURSE SEQUENCING: (first two of the four years):

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 112 English Composition	3
*Psychology/Biology	3	*Psychology/Biology	3
MATH 110 Finite Math or MATH 121 Math Foundations of Business	3	STAT 200 Probability/Statistics	3
*Literature	3	*Fine Arts	3
*Social Science	3	*Social Science	3
PE Activity	2	PE Activity	2

Second Year:

Fall Semester		*Spring Semester*	
ECON 201 Prin of Macroeconomics	3	ECON 202 Prin of Microeconomics	3
ANTH 101 Physical Anthropology or SOCO 260 General Sociology	3	ANTH 102 Cultural Anthropology or SOCO 264 Social Problems	3
*Psychology/Biology	3	*Comp Sci/Math/Physical Science	3
*Lit/Philosophy/Foreign Language	3	*Social Sciences	2-3
Elective	3	Elective	3

*See pp. 49-52 for listing of approved general education courses.
#Unless student has completed two years of high school algebra; if so, take another course in Computer Science, Math, or Physical Science.
+Core courses

HISTORY

(Bachelor of Arts in Social and Behavioral Sciences)

DEGREE REQUIREMENTS:

1. *General Education:* (40-42 hrs. plus 4 hrs. physical education)

ENGW 111 and 112	(6)
*Psychology and Biology	(8-9)
*Literature	(3)
*Fine Arts	(3)
*ENLI/PHIL/Foreign Lang	(3)
*CSCI/MATH/Phys Sci	(8-9)
*Social Science	(9)
Physical Education	(4)

2. *Required Core and Emphasis Courses:* (54 hrs.)

+ANTH 101 and 102	(6)	+HIST 131 and 132	(6)
+ECON 201 and 202	(6)	HIST 404	(3)
+GEOG 103	(3)	+SOCO 260	(3)
+HIST 101 and 102	(6)		
+Three additional hours of behavioral science			(3)
6 hours of European History selected from:			
HIST 300	(3)	HIST 332	(3)
HIST 301	(3)	HIST 400	(3)
HIST 330	(3)	HIST 430	(3)
HIST 331	(3)		
6 hours of United States History selected from:			
HIST 320	(3)	HIST 346	(3)
HIST 342	(3)	HIST 410	(3)
HIST 344	(3)	HIST 420	(3)
6 hours of Asian, African, Latin American History selected from:			
HIST 306	(3)	HIST 401	(3)
HIST 310	(3)	HIST 403	(3)
HIST 340	(3)		

3. *Electives:* (24-26 hrs.)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 112 English Composition	3
HIST 101 Western Civilizations	3	HIST 102 Western Civilizations	3
*Psychology/Biology	3	*Psychology/Biology	3
*Literature	3	*Fine Arts	3
Elective	3	*Comp Sci/Math/Physical Science	3
PE Activity	2	PE Activity	2

Second Year:

Fall Semester		*Spring Semester*	
HIST 131 U.S. History	3	HIST 132 U.S. History	3
*Literature/Philosophy/F.Language	3	*Comp Sci/Math/Physical Science	3
*Comp Sci/Math/Physical Sci	3	*Psychology/Biology	3
POLS 101 American Government	3	GEOG 103 World Regional Geography	3
SOCO 260 General Sociology	3	Elective	3

*See pp. 49-52 for listing of approved general education courses.
+Core courses

HUMAN SERVICES

(Bachelor of Arts in Social and Behavioral Sciences)

DEGREE REQUIREMENTS:

1. *General Education:* (41 hrs. plus 4 hrs. physical education)

ENGW 111 and 112	(6)
PSYC 121 and 122	(6)
#MATH 110	(2)
STAT 200	(3)
*Social Science	(9)
*Literature	(3)
*Fine Arts	(3)
*ENLI/PHIL/Foreign Language	(3)
*CSCI/MATH/Physical Science/STAT	(3)
*Biology	(3)
Physical Education	(4)

2. *Required Core and Emphasis Courses:* (52 hrs.)

+A social science core series	(6)		
+PCGU 420	(3)	+HSER 499	(4)
+HSER 301	(3)	+SOCO 410 or SOCI 310	(3)
+Nine additional hours of social science	(9)	+SOCO 260 and 264	(6)

Eighteen hours selected from:

PCGU 320 (3)
HSER 310 (3), 320 (3),
PSYC 310 (3), 320 (3), 340 (3), 350 (3)
SOCO 314 (3), 316 (3), 330 (3), 350 (3), 360 (3).

3. *Electives:* (27 hrs.)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 112 English Composition	3
PSYC 121 General Psychology	3	PSYC 122 General Psychology	3
*Literature	3	*Fine Arts	3
*Social Science	3	*Biology	3
Elective	3	Elective	3
PE Activity	2	PE Activity	2

Second Year:

Fall Semester	*Spring Semester*
SOCO 260 General Sociology 3	SOCO 264 Social Problems 3
#MATH 110 Finite Math 2	STAT 200 Probability/Statistics 3
ECON 201 Prin of Macroeconomics or HIST 101 Western Civilizations or HIST 131 U.S. History or POLS 101 American Government 3	ECON 202 Prin of Microeconomics or HIST 102 Western Civilizations or HIST 132 U.S. History or POLS American Government 3
*Literature/Philosophy/F.Lang 3	*Social Science 3
*Biology 3	Elective 3

*See pp. 49-52 for listing of approved general education courses.
#Unless student has completed 2 years of high school algebra; if so, take another Computer Science, Math, Statistics or Physical Science course.
+Core courses

MUNICIPAL PARKS AND RECREATION MANAGEMENT

(Bachelor of Arts in Recreation and Leisure Services)

DEGREE REQUIREMENTS:

1. *General Education:* (39-42 hrs. plus 4 hrs. physical education)

ENGW 111 and 112	(6)
*Psychology/Biology	(8-9)
*CSCI/MATH/Physical Science	(8-9)
*Literature	(3)
*Fine Arts	(3)
*ENLI/PHIL/Foreign Language	(3)
*Social Science	(8-9)
Physical Education	(4)

2. *Required Core and Emphasis Courses:* (58 hrs.)

AGRI 201 and 201L	(4)	RECR 425	(3)
POLS 256	(3)	RECR 470	(3)
+RECR 210	(3)	+RECR 480	(3)
+RECR 270	(3)	RECR 482	(3)
+RECR 380	(3)	+RECR 484	(3)
+RECR 384	(3)	RECR 486 and 486L	(4)
RECR 386	(3)	+RECR 490	(3)
RECR 390	(3)	+RECR 499	(12)

3. *Electives:* (16-19 hrs.)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 112 English Composition	3
*Psychology/Biology	3	*Psychology/Biology	3
POLS 101 American Government	3	POLS 110 Dev/American Constitution	3
*Literature	3	*Fine Arts	3
*Comp Sci/Math/Physical Science	3	*Comp Sci/Math/Physical Science	3
PE Activity	2	PE Activity	2

Second Year:

Fall Semester	*Spring Semester*
RECR 210 Intro/Recreation and Leisure Services 3	RECR 270 Recreation/Special Populations 3
*Psychology/Biology 3	*Literature/Philosophy/F.Language 3
POLS 256 State/Local Government 3	*Comp Sci/Math/Physical Science 3
AGRI 201 Environmental Horticulture 3	*Social Science 3
AGRI 201L Environmental Hort Lab 1	Elective 3
Elective 3	

*See pp. 49-52 for listing of approved general education courses.
+Core courses

OUTDOOR RECREATION

(Bachelor of Arts in Recreation and Leisure Services)

DEGREE REQUIREMENTS:

1. *General Education:* (39-42 hrs. plus 4 hrs. physical education)

ENGW 111 and 112	(6)
*Psychology and Biology	(8-9)
*CSCI/MATH/Physical Science	(8-9)
*Literature	(3)
*Fine Arts	(3)
*ENLI/PHIL/Foreign Language	(3)
*Social Sciences	(8-9)
Physical Education	(4)

2. *Required Core and Emphasis Courses:* (61-62 hrs.)

+RECR 210	(3)	RECR 482	(3)
+RECR 270	(3)	RECR 483	(3)
+RECR 380	(3)	+RECR 484	(3)
RECR 382	(3)	+RECR 486,486L	(4)
+RECR 384	(3)	+RECR 490	(3)
RECR 390	(3)	+RECR 499	(12)
RECR 425	(3)	BIOL 113	(3)
+RECR 480	(3)	PHYA 265	(3)

Three to four hours selected from:
ARTE 110, PHYE 101, PHYE 102, PHYE 108, PHYA 110, PHYA 112, PHYE 119, PHYE 133, PHYE 135, PHYE 137, PHYE 141, PHYE 143, PHYA 211, PHYA 250, RECR 396.

3. *Electives:* (19-23 hrs.)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 112 English Composition	3
*Psychology/Biology	3	*Psychology/Biology	3
*Social Science	3	*Social Science	3
*Literature	3	*Fine Arts	3
*Comp Sci/Math/Physical Sci	3	*Comp Sci/Math/Physical Science	3
PE Activity	2	PE Activity	2

Second Year:

Fall Semester		*Spring Semester*	
RECR 210 Intro/Recreation and Leisure Services	3	RECR 270 Recreation and Special Populations	3
*Psychology/Biology	3	*Literature/Philosophy/F.Language	3
*Social Science	3	*Comp Sci/Math/Physical Science	3
BIOL 113 Outdoor Survival	3	PHYA 265 Standard First Aid & CPR	3
Elective	3	Elective	3

*See pp. 49-52 for listing of approved general education courses.
+Core courses

PHYSICAL EDUCATION

(Teacher Certification, K-12 Level)

Students preparing to teach physical education in public schools (K-12) must confer with the Director of Teacher Certification regarding state certification requirements and with the chair of the Physical Education department regarding program requirements. The student will seek a Bachelor of Arts degree in Selected Studies. Teacher certification is a separate process.

Students will also be required to take professional courses prescribed for certification and additional courses in physical education.

POLITICAL SCIENCE

(Bachelor of Arts. Social & Behavioral Sciences)

DEGREE REQUIREMENTS:

1. *General Education:* (40-42 hrs. plus 4 hrs. physical education)

ENGW 111 and 112	(6)
*Biology and Psychology	(8-9)
SPCH 102	(3)
*Literature	(3)
*Literature/Philosophy/Foreign Language	(3)
*CSCI/MATH/Physical Science/STAT	(8-9)
*Social Science	(9)
Physical Education	(4)

2. *Required Core and Emphasis Courses:* (57 hrs.)

+HIST 131 and 132	(6)
+POLS 101 and 110	(6)
+POLS 256	(3)
+POLS 261	(3)
POLS 490	(3)
+SOCO 260 and 264	(6)
+ANTH 102	(3)
+Six additional hours of behavioral science	(6)
Eighteen hours selected from:	(18)
POLS 302 (3), 310 (3), 312 (3), 313 (3), 350 (3), 361 (3), 402 (3), 410 (3), 420 (3), 422 (3), 450 (3)	
SOCO 300	(3)
POLS 399A, 399B	(3 hours only)

3. *Electives:* (21-23 hrs.)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 112 English Composition	3
POLS 101 American Government	3	POLS 110 Dev/American Constitution	3
HIST 101 Western Civilizations	3	HIST 102 Western Civilizations	3
*Literature	3	SPCH 102 Speechmaking	3
*Computer Science/Math/Physical Science/Statistics	3	*Computer Science/Math/Physical Science/Statistics	3
PE Activity	2	PE Activity	2

Second Year:

Fall Semester		*Spring Semester*	
POLS 256 State/Local Government	3	ANTH 102 Cultural Anthropology	3
POLS 261 Comparative Politics	3	HIST 132 U.S. History	3
HIST 131 U.S. History	3	*Computer Science/Math/Physical Science/Statistics	3
*Literature/Philosophy/F.Language	3	Elective	6
*Biology	3		

*See pp. 49-52 for listing of approved general education courses.
ı Core Courses

PSYCHOLOGY

(Bachelor of Arts in Social and Behavioral Sciences)

DEGREE REQUIREMENTS:

1. *General Education:* (41 hrs. plus 4 hrs. physical education)

ENGW 111 and 112	(6)
PSYC 121 and 122	(6)
*Biology	(3)
*Fine Arts	(3)
*Literature	(3)
*ENLI/PHIL/Foreign Language	(3)
#MATH 110	(2)
*CSCI/MATH/Physical Science/STAT	(3)
STAT 200	(3)
*Social Science	(9)
Physical Education	(4)

2. *Required Core and Emphasis Courses:* (52 hrs.)

–PSYC 314 and 314L	(4)	+PSYC 414	(3)
–PSYC 320	(3)	+SOCI 310	(3)
+PSYC 322	(3)	+SOCO 260,264	(6)
+A social science core series	(6)		
+Additional social science courses	(6)		

Eighteen (18) hours selected from: (18)
HSER 301 (3), 310 (3), 320 (3)
PSYC 310 (3), 312 and 312L (4), 330 (3), 332 (3), 340 (3), 350 (3), 396 (1,2,3), 400 (3), 412 (3), 420 (3), 422 (3), 430 (3).

3. *Electives:* (33 hrs.)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 112 English Composition	3
PSYC 121 General Psychology	3	PSYC 122 General Psychology	3
#MATH 110 Finite Math	2	STAT 200 Probability/Statistics	3
*Literature	3	*Fine Arts	3
Elective	3	*Social Science	3
PE Activity	2	PE Activity	2

Second Year:

Fall Semester		*Spring Semester*	
SOCO 260 General Sociology	3	SOCO 264 Social Problems	3
*Biology	3	*Computer Sci/Math/Physical Sci.	3
*Literature/Philosophy/F.Language	3	ECON 202 Prin/Microeconomics or HIST 102 Western Civilizations or HIST 132 U.S. History or POLS 110 Dev/Amer Constitution	3
ECON 201 Prin/Macroeconomics or HIST 101 Western Civilization or HIST 131 U.S. History or POLS 101 American Government	3	*Social Science	3
*Social Science	3	Elective	3

*See pp. 49-52 for listing of approved general education courses.
#Unless student has completed 2 years of high school algebra; if so, take another Math, Statistics, Computer Science, or Physical Science course.
+Core Courses

SOCIAL SCIENCE (GENERAL)

(Bachelor of Arts in Social and Behavioral Sciences)

DEGREE REQUIREMENTS: 120 hrs

1. *General Education:* (39-42 hrs. plus 4 hrs. physical education)

ENGW 111 and 112	(6)
*Biology and Psychology	(8-9)
*Literature	(3)
*Fine Arts	(3)
*ENLI/PHIL/Foreign Language	(3)
*CSCI/MATH/Physical Science/STAT	(8-9)
*Science	(8-9)
Physical Education	(4)

2. *Required Core and Emphasis Courses:* (60 hrs.)

+ANTH 101 and 102	(6)	+SOCO 260 and 264	(6)
+ECON 201 and 202	(6)	+POLS 101, 110	(6)
+GEOG 103	(3)	+Three additional hours of behavioral science	(3)
+HIST 101 and 102 or HIST 131 and 132	(6)		

Twenty-four (24) hours upper division ANTH, ECON, HIST, POLS, SOCO, or SOCI courses from three different disciplines, at least twelve hours at the 400 level.

3. *Electives:* (18-21 hrs.)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 112 English Composition	3
PSYC 121 General Psychology	3	PSYC 122 General Psychology	3
POLS 101 American Government	3	POLS 110 Dev/American Constitution	3
*Literature	3	*Fine Arts	3
*Comp Sci/Math/Physical Science Statistics	3	*Literature/Philosophy/F.Language	3
PE Activity	2	PE Activity	2

Second Year:

Fall Semester		*Spring Semester*	
GEOG 103 World Regional Geog.	3	GEOG 102 Intro/Geography	3
ECON 201 Prin/Macroeconomics	3	ECON 202 Prin/Microeconomics	3
HIST 101 Western Civilizations or HIST 131 U.S. History	3	HIST 102 Western Civilizations or HIST 132 U.S. History	3
ANTH 101 Physical Anthropology	3	ANTH 102 Cultural Anthropology	3
*Comp Sci/Math/Physical Science/ Statistics	3	*Comp Sci/Math/Physical Science/ Statistics	3

*See pp. 49 52 for listing of approved general education courses.
+Core Courses

SOCIAL SCIENCE (GENERAL)

(Associate of Arts)

DEGREE REQUIREMENTS

Study directed toward the Associate of Arts degree will serve as a basis for the Bachelor of Arts in Social and Behavioral Sciences and also for programs offered in other schools at Mesa State College. Students should consult faculty advisers to plan specific programs that will prepare them for further study in disciplines of their choice.

Minimum semester hours required: 64 hrs.

1. *General Education:* (34 hrs. plus 4 hrs. physical education)
   Students seeking an Associate of Arts degree must satisfy the General Education Core requirements on pages 53-55.

2. *Course Requirements in Social Sciences:*
   Students must take a minimum of 18 hours of lower-division courses from one or more of the following disciplines:

Anthropology	Economics	History
Physical Education	Political Science	Sociology
Criminal Justice		

   Those students wishing to concentrate in a specific discipline should consult with an adviser in that discipline or the Chairperson of the Department of Social Sciences.

3. *Electives:* 8 hours

SOCIOLOGY

(Bachelor of Arts in Social and Behavioral Sciences)

DEGREE REQUIREMENTS:

1. *General Education:* (40-42 hrs. plus 4 hrs. physical education)

ENGW 111 and 112	(6)
*Biology and Psychology	(8-9)
*Humanities/Fine Arts	(3)
*Literature	(3)
*ENLI/PHIL/Foreign Language	(3)
#MATH 110	(2)
STAT 200	(3)
*Social Science	(9)
*CSCI/MATH/Physical Science/STAT	(3)
Physical Education	(4)

2. *Required Core and Emphasis Courses:* (51 hrs.)

+SOCI 310	(3)	+Six additional hours of social science	(6)
+SOCO 400	(3)		
+SOCO 410	(3)	+Six additional hours of behavioral science	(6)
+SOCO 260,264	(6)		
+A social science core series	(6)		

Eighteen (18) hours selected from:
HSER 301 (3), 310 (3), 320 (3)
SOCO 300 (3), 310 (3), 312 (3),
314 (3), 316 (3), 330 (3),
350 (3), 360 (3),
SOCI 351 (3), 352 (3)

3. *Electives:* (27-29 hrs.)

SUGGESTED COURSE SEQUENCING:

First Year:

Fall Semester	*Sem Hrs*	*Spring Semester*	*Sem Hrs*
ENGW 111 English Composition	3	ENGW 112 English Composition	3
PSYC 121 General Psychology	3	PSYC 122 General Psychology	3
*Literature	3	*Humanities/Fine Arts	3
*Social Science	3	*Comp Sci/Math/Physical Science or Statistics	3
Elective	3	Elective	3
PE Activity	2	PE Activity	2

Second Year:

Fall Semester		*Spring Semester*	
SOCO 260 General Sociology	3	SOCO 264 Social Problems	3
*Biology	3	*Literature/Philosophy/F.Language	3
#MATH 110 Finite Math	3	STAT 200 Probability/Statistics	3
ECON 201 Prin/Macroeconomics or HIST 101 Western Civilizations or HIST 131 U.S. History or POLS 101 American Government	3	ECON 202 Prin/Microeconomics or HIST 102 Western Civilizations or HIST 132 U.S. History or POLS 110 Dev/Amer Constitution	3
Elective	3	Elective	3

*See pp. 49-52 for listing of approved general education courses.
#Unless student has completed 2 years of high school algebra; if so, take another Math, Statistics, Computer Science, or Physical Science course.
+ Core Courses

SELECTED STUDIES

(Bachelor of Arts, Selected Studies)

Admission to Selected Studies

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

No freshman will be admitted to the program.

The minimum academic requirements for admission are:

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

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

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

All curriculum contracts are subject to the following:

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

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

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

To file an application the student must:

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

Execution of Curriculum Contracts

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

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

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

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

TEACHER CERTIFICATION

ELEMENTARY TEACHER CERTIFICATION PROGRAM

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

Following are the four components of the Mesa State College elementary teacher certification program:

I. Professional Sequence of Coursework for Elementary Teacher Certification

Required Courses		*Semester Hours*
EDUC 220	Foundations and Legal Aspects of Education	3
EDUC 260	Teaching Diverse Populations	2
EDUC 311	Creative and Physical Expression for Children	3
EDUC 320	The Developing Child in the School	3
EDUC 321	Current Issues in Curriculum Development	3
EDUC 350	Exceptionality in the Classroom	3
EDUC 370	Orientation to Education Technology	3
EDUC 390	The Comprehensive Elementary Language Program	4
EDUC 400	Learning Theories/Teaching Strategies in the Disciplines	4
EDUC 494	Pre-Internship Seminar	2
EDUC 499c	Teaching Internship and Colloquium: Elementary	12
	Total Hours Required for Teacher Certification	42

II. Academic Disciplines Approved for Teacher Certification

Science	
English	Refer to specific departments in
Social Science	this catalog, consult with the
Mathematics	Teacher Certification Department and
Psychology	with the appropriate department adviser.

III. Requirements Specific to Elementary Teacher Certification

All students are required to complete the general education requirements of Mesa State College. Following are specific courses necessary to satisfy requirements for teacher certification:

ENGW 111 English Composition
ENGW 112 English Composition
MATH 105 Elements of Mathematics I
PHYA 260 School and Personal Health
PSYC 233 Human Growth and Development
SPCH 102 Speechmaking

IV. Additional Requirements for Teacher Certification

Eligibility requirements for entry and formal admission to the Mesa State College Teacher Certification Program are prescribed by the Colorado Department of Education and Mesa State College. Such requirements are generic in that all students seeking certification and endorsement must complete them regardless of major emphasis, program area or chosen specialty. Examples of such requirements include a minimum grade point for English Composition and Speech, taking and passing the California Achievement Test, experience with youth and a letter of reference. Interested students should consult with advisers in both Teacher Education and their emphasis areas.

SECONDARY TEACHER CERTIFICATION PROGRAM

Colorado Teacher Certification at the Secondary Level (Grades Seven through Twelve)

Students may seek certification at the secondary level in the following endorsement areas: English, mathematics, science, and social studies. Consultation with advisers in both Teacher Certification and in the emphasis area is required to establish a comprehensive program.

I. Professional Sequence of Coursework for Secondary Teacher Certification Program

Required Courses		*Semester Hours*
EDUC 220	Foundations and Legal Aspects of Education	3
EDUC 260	Teaching Diverse Populations	2
EDUC 320	The Developing Child in the School	3
EDUC 350	Exceptionality in the Classroom	3
EDUC 360	Teaching and Learning in the Secondary School	4
EDUC 370	Orientation to Education Technology	3
EDUC 405	Reading and Writing in the Content Area	4
EDUC 494	Pre-Internship Seminar	2
EDUC 499g	Teaching Internship and Colloquium: Secondary	12
	Total Hours Required for Teacher Certification	36

II. Academic Course Requirements for Teacher Certification in the Emphasis Area

English	ENSS 455 Methods of Teaching Secondary English	(3)
Math	MATH 347 Methods of Teaching Secondary Math	(3)
Science	BIOL 393 Teaching Science in the Secondary School	(3)
Social Studies	SOCI 347 Methods of Teaching Social Studies: Secondary School	(3)

III. Requirements Specific to Secondary Teacher Certification

ENGW 111 English Composition
ENGW 112 English Composition
PSYC 233 Human Growth and Development
SPCH 102 Speechmaking

K-12 TEACHER CERTIFICATION PROGRAM

Colorado Teacher Certification at the K-12 Level.

Students may seek certification at the K-12 level in music and physical education. Consultation with advisers in both Teacher Certification and the emphasis area is required to establish a comprehensive program.

I. Professional Sequence of Coursework for K-12 Teacher Certification Program

Required Courses		*Semester Hours*
EDUC 220	Foundations and Legal Aspects of Education	3
EDUC 260	Teaching Diverse Populations	2
EDUC 320	The Developing Child in the School	3
EDUC 350	Exceptionality in the Classroom	3
EDUC 370	Orientation to Education Technology	3
EDUC 405	Reading and Writing in the Content Area	4
EDUC 494	Pre-Internship Seminar	2
EDUC 499d	Teaching Internship and Colloquium Elementary/Part	6
EDUC 499g	Teaching Internship and Colloquium Secondary/Part	6
	Total Hours Required for Teacher Certification	32

II. Additional Course Requirements for Teacher Certification in the Emphasis Area

MUSIC	MUSA 340 Teaching Elementary and General Music	(3)
	MUSA 440 Teaching Vocal Music, K-12	(3)
	MUSA 441 Teaching Instrumental Music, K-12	(3)
PHYS ED	PHYA 320 Elementary School Physical Education	(3)
	PHYA 408 Methods of Secondary Physical Education	(3)

III. Requirements Specific to K-12 Teacher Certification

ENGW 111 English Composition
ENGW 112 English Composition
PSYC 233 Human Growth and Development
SPCH 102 Speechmaking

COURSE DESCRIPTIONS

The course descriptions in this catalog indicate the content of the course and the prerequisites when applicable. Courses are listed in alphabetical order with a four-letter prefix code, followed by a number and title. The number in parentheses at the end of the course title indicates the credit granted, in terms of semester hours, for each course. Generally, the number of semester hours is the number of times a class will meet each week. Exceptions are noted in individual course descriptions and, in most cases, prerequisites and/or corequisites stated. In the detailed course descriptions, the course number after the prefix indicates the college year in which the courses should ordinarily be taken.

100-199 ..... Freshman year
200-299 ..... Sophomore year
300-399 ..... Junior year
400-499 ..... Senior year

Courses numbered 001-099 are preparatory in nature, not intended for transfer purposes, and may not be used to fulfill baccalaureate, associate of arts or associate of science degree requirements or electives. In some cases preparatory courses will fulfill specified requirements for associate of applied science and certificate programs; preparatory courses may not be used to meet elective requirements in associate of applied science or certificate programs.

Courses identified as "Independent Study" are those beyond the scope of the required curriculum. General restrictions and regulations may be found under the *Program* section of this catalog (see "Independent Study" in the index). Specific regulations apply in certain disciplines, as well. Arrangements and permission must be obtained from the appropriate instructor and dean well in advance.

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

Mesa State College reserves the right to withdraw any program or course which is not justified due to lack of enrollment or availability of instructors. Other courses may be added if there is sufficient demand. In some programs, certain courses may be offered on an alternate year basis or as determined by demand.

THE DESIGNATION § denotes a course that will fulfill baccalaureate general education (GE) requirements.

ACCOUNTING

School of Business

ACCT 201 Principles of Accounting I (3)
For those interested in obtaining the basic skills necessary to understand an accounting system and financial statements. (Fall/Spring)

ACCT 202 Principles of Accounting II (3)
Continuation of ACCT 201. Prerequisite: ACCT 201. (Fall/Spring)

ACCT 205 Ten-Key Operations (1)
Skill development essential to accountants in the operation of the ten-key electric calculator with emphasis on both speed and accuracy. Enrollment limited to accounting students. Prerequisite: ACCT 201. (Fall/Spring)

ACCT 221 Intermediate Accounting I (4)
Development of a foundational understanding of Generally Accepted Accounting Principles and their application to external financial statements. Prerequisite: ACCT 202. (Fall)

ACCT 222 Intermediate Accounting II (4)
Continuation of ACCT 221. Prerequisite: ACCT 221. (Spring)

ACCT 298 Related Work Experience (1,2)
Practical experience and an opportunity to apply academic knowledge in a work situation approved by the School of Business. Students must apply for this course through their advisers at least six weeks prior to end of the semester preceding the semester in which they wish to take the course. For additional requirements, see adviser. Prerequisite: nine semester hours of course work in the field chosen, cumulative GPA of 2.50 or higher, and consent of instructor. (Fall/Spring)

ACCT 311 Managerial Accounting (3)
Application of accounting information to managerial decision making for the non-accounting major. Topics include budgeting for planning and control, cost-volume-profit relationships, and capital budgeting. Prerequisite: ACCT 202. (Spring)

ACCT 331 Cost Accounting I (3)
Costs and their relationship to planning controlling, inventory valuation, and decision making. Prerequisite: ACCT 202, CISB 105. (Fall)

ACCT 332 Cost Accounting II (3)
Continuation of ACCT 331. Prerequisite: ACCT 331. (Spring)

ACCT 395 Independent Study (1-3)

ACCT 396 Topics (1-3)

ACCT 401 Governmental Accounting (3)
Accounting principles as they apply to governmental units and non-profit operations. Prerequisite: ACCT 322 or consent of instructor. (Spring)

ACCT 402 Advanced Accounting (3)
Taught in two modules. The first provides in-depth coverage of consolidated financial statements. The second module covers partnership accounting, bankruptcy, estates, trusts, and international operations. Prerequisite: ACCT 322. (Fall)

ACCT 411 Auditing (3)
Scope and purposes of the work of a certified public accountant. An in-depth study of the theory of auditing, professional ethics of the profession, legal liability of the auditor, theory of accounting systems, and internal control. Prerequisites: ACCT 322, STAT 214. (Fall)

ACCT 412 Auditing II (3)
Continuation of ACCT 411. Application of auditing theory to financial statements. Examination of audit programs, procedures, and work papers used in each phase of an audit. Prerequisite: ACCT 411. (Spring)

ACCT 421 CPA Review and Professional Preparation I (1)
Review and preparation for the CPA examination and the profession of public accounting through a study of typical CPA exam problems. Prerequisite: senior status. (Fall)

ACCT 422 CPA Review and Professional Preparation II (2)
Continuation of ACCT 421. Prerequisite: ACCT 322 and 332. (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 322. (Spring/even numbered years)

ACCT 441 Income Tax (5)
For students with an accounting emphasis. Covers the Federal Income Tax Law in depth as it deals with individual taxpayers. Introduction to the various tax reference sources that deal with the subject. Prerequisite: ACCT 322 or consent of instructor. (Fall)

ACCT 442 Advanced Tax and Tax Research (5)
Federal Income Tax Law and filing requirements for corporations, partnerships, estates, trusts, and gifts. The student will be required to participate in the Volunteer Income Tax Assistance program in order to acquire practical experience in preparing tax returns. Prerequisite: ACCT 441. (Spring)

ACCT 495 Independent Study (1-3)

ACCT 496 Topics (1-3)

AGRICULTURE

School of Natural Science and Mathematics

AGRI 101 Agricultural and Natural Resource Occupations (1)
Overview of the various branches of agricultural endeavors and their occupational opportunities. Provides guidance in the selection of further studies. (Fall)

AGRI 110 Crop Production (3)
AGRI 110L Crop Production Laboratory (1)
Principles of field-crop production with emphasis on cultural practices and botanical characteristics of crops grown in the intermountain region. Three lectures and one two-hour laboratory per week. (Alternate Spring)

AGRI 112 Farm Power (2)
AGRI 112L Farm Power Laboratory (1)
Theory and demonstrations of internal combustion engines, electrical systems, and power transfer, with special attention to operation and maintenance of farm equipment. Two lectures and one two-hour laboratory per week. (Alternate Fall)

AGRI 113 Introduction to Animal Science (3)
AGRI 113L Introduction to Animal Science Laboratory (1)
Livestock industry including production, management, and marketing of livestock products. Three lectures and one two-hour laboratory per week. (Fall)

AGRI 115 Basic Agricultural Skills (1)
AGRI 115L Basic Agricultural Skills Laboratory (2)
Principles and practices of common and economically important farm operations. Emphasis on usual fall activities. One lecture and two two-hour laboratories per week. (Alternate Fall)

AGRI 116 Basic Agricultural Skills (1)
AGRI 116L Basic Agricultural Skills Laboratory (2)
Principles and practices of common and economically important farm operations. Emphasis on usual spring activities. One lecture and two two-hour laboratories per week. (Alternate Spring)

AGRI 120 Horsemanship (2)
AGRI 120L Horsemanship Laboratory (1)
Fundamentals of descriptive identification, relationships of form to function, breeds, determination of value, selection for purchase, identification and use of tack and equipment, application of proper horse handling principles and methods, development of proper seat, hands, and use of aids. The student will be expected to provide a suitable mount and tack. Two lectures and one two-hour laboratory per week. (Alternate Fall)

AGRI 132 Equine Management (3)
The general principles of stabling, pasturing, nutrition, health, genetics, reproduction, economics, and marketing of horses. Prerequisite: AGRI 120. (Alternate Spring)

AGRI 142 Agricultural Economics (3)
Economic principles as they apply to agriculture. (Fall)

AGRI 151 Basic Landscaping (2)
AGRI 151L Basic Landscaping Laboratory (1)
Principles of home landscape design, construction, and maintenance, with an emphasis on low maintenance and water conservation. Two lectures and one two-hour laboratory per week. (On demand)

AGRI 152 Applied Animal Science — Sheep (1)
AGRI 152L Applied Animal Science — Sheep Laboratory (1)
Application of management principles and approved practices in lamb and wool production and lamb feeding enterprises. Alternative methods of production will be observed. One lecture and one two-hour laboratory per week. Prerequisite: AGRI 113. (Alternate Spring)

AGRI 153 Applied Animal Science — Swine (1)
AGRI 153L Applied Animal Science — Swine Laboratory (1)
Application of management principles and approved practices in farrowing and swine feeding enterprises. Alternative operations will be observed. One lecture and one two-hour laboratory per week. Prerequisite: AGRI 113. (Alternate Fall)

AGRI 155 Applied Animal Science — Cattle (1)
AGRI 155L Applied Animal Science — Cattle Laboratory (1)
Application of management principles and approved production practices in cow-calf, stocker and feeder beef cattle enterprises. Alternative operations will be observed. One lecture and one two-hour laboratory per week. Prerequisite: AGRI 113. (Alternate Spring)

AGRI 201 Environmental Horticulture (3)
AGRI 201L Environmental Horticulture Laboratory (1)
Horticultural science as applied to the propagation and culture of horticultural crops, landscape design, and improvement of plants. Three lectures and one two-hour laboratory per week. (Alternate Fall)

AGRI 202 Soils (3)
AGRI 202L Soils Laboratory (1)
Formation, properties and management of soils. Special attention is given to all conditions that affect crop yields. Three lectures and one two-hour laboratory per week. (Alternate Spring)

AGRI 203 Artificial Insemination (1)
AGRI 203L Artificial Insemination Laboratory (1)
Principles and practices employed in artificial insemination with emphasis on planning and conducting a successful artificial breeding program. One lecture and one two-hour laboratory per week. (Alternate Spring)

AGRI 205 Farm and Ranch Management (5)
Economics applied to farm or ranch management. Emphasizes keeping and interpreting records for management and income tax purposes. Prerequisite: AGRI 142 or consent of instructor. (Spring)

AGRI 211 Introduction to Range Science (3)
AGRI 211L Introduction to Range Science Laboratory (1)
Ecological principles and management practices required for proper utilization of rangeland. Three lectures and one two-hour laboratory per week. (Alternate Fall)

AGRI 222 Livestock Judging and Selection (1)
AGRI 222L Livestock Judging and Selection Laboratory (1)
Evaluation and selection of livestock. One lecture and one two-hour laboratory per week. (Alternate Spring)

AGRI 231 Horse Training (1)
AGRI 231L Horse Training Laboratory (2)
Fundamental principles and practices involved in handling, gentling, breaking, and training or retraining horses. Attention is given to alternative methods, intended uses, and individual differences among horses. The student will be expected to provide a suitable mount and tack. One lecture and two two-hour laboratories per week. Prerequisite: AGRI 120. (Alternate Fall)

AGRI 242 Equine Evaluation (1)
AGRI 242L Equine Evaluation Laboratory (1)
Systematic analysis of horse conformation and the relationship of conformation to function. Includes judging for selection for various uses, particularly for breeding and showing, as well as preparing and presenting justifications in written and oral form. One lecture and one two-hour laboratory per week. Prerequisite: AGRI 120. (Alternate Spring)

AGRI 251 Forage Crops (3)
AGRI 251L Forage Crops Laboratory (1)
Important aspects of forage crop production. Three lectures and one two-hour laboratory per week. (On demand)

AGRI 254 Livestock Feeding (3)
AGRI 254L Livestock Feeding Laboratory (1)
Practical application of the analysis of feeds and requirements of various classes of livestock used in the formulation of balanced rations. Three lectures and one two-hour laboratory per week. (Alternate Fall)

AGRI 260 Functional Anatomy of Livestock (3)
AGRI 260L Functional Anatomy of Livestock (2)
Systematic anatomy and physiology of domestic animals as related to production, reproduction, and health. Emphasis is placed on systems unique to domestic animals. Three lectures and two two-hour laboratory per week. (Alternate Spring)

AGRI 272 Livestock Health (2)
AGRI 272L Livestock Health Laboratory (1)
Principles of livestock sanitation, disease prevention, control, treatment, and first aid. Includes terminology needed for effective communication with veterinarians and understanding pharmaceutical labels. Two lectures and one two-hour laboratory per week. (Alternate Spring)

AGRI 299 Internship (2)
Work experience in various parts of the agricultural enterprise. Hours of work required for credit will be determined by the department. (Fall/Spring/Summer)

AGRICULTURAL MANAGEMENT

School of Natural Sciences and Mathematics

AGRM 101 Farm and Ranch Business Management I (3)
Instruction in the use of the microcomputer, establishing farm and ranch goals, understanding financial statements, and setting up and maintaining a record system. (On demand)

AGRM 102 Farm and Ranch Business Management II (3)
Utilization of the Lotus 1-2-3 spreadsheet in farm budgeting to maximize profits. (On demand)

AGRM 103 Farm and Ranch Business Management III (3)
Basic principles of agricultural economics, credit, ratio analysis, depreciation, and income tax strategies. (On demand)

AGRM 104 Farm and Ranch Business Management IV (3)
An introduction to agricultural marketing alternatives with emphasis on the futures and options markets. (On demand)

AGRM 105 Farm and Ranch Business Management V (3)
An in-depth study of the marketing of grains, livestock and specialty crops. Will include charting as a means of maximizing prices. Prerequisites: AGRM 104. (On demand)

AGRM 106 Farm and Ranch Business Management VI (3)
The use of financial ratios as indicators in business planning and profitability. (On demand)

AGRM 107 Farm and Ranch Business Management VII (3)
Designed to promote benefits of raising a family on a farm/ranch through an understanding of stress and proper business management. (On demand)

AGRM 108 Farm and Ranch Business Management VIII (3)
Designed to minimize costs and risks through insurance and business expansion. (On demand)

AGRM 109 Farm and Ranch Business Management IX (3)
Last course in the series of nine. Devoted to intensive study of proposed changes in the farm/ranch organization and operation and to the application of sound management principles. Estate planning and agricultural law will also be discussed. (On demand)

ANTHROPOLOGY

School of Social and Behavioral Sciences

§ANTH 101 Physical Anthropology (3)
Basic concepts of physical anthropology including the biological nature of man, evolution theory, evolution of primates including man, genetics, the emergence of cultural essentials, and human variation. (Fall)

§ANTH 102 Cultural Anthropology (3)
Basic concepts of cultural anthropology including the nature, development, and history of culture, cultural institutions, and the process of cultural change. (Spring)

§ANTH 222 New World Archaeology (3)
North, Middle, and South American archaeology emphasizing the origin of inhabitants, distribution, and development of prehistoric cultures. (Spring)

ANTH 230 Myth, Magic and Religion (3)
Comparative study of myth, magic, and religion from the Upper Paleolithic through the earliest civilizations using anthropological, archaeological, and psychological sources. (Fall)

ANTH 232 Primitive Science and Religion (3)
Comparative study of primitive man's attempt to understand and control the world through ritual, magic, witchcraft, and divination. Examines roles of shamans, ghosts, ancestor worship, astrology, alchemy, and the anthropological theories which explain them. (Spring)

ANTH 261, 262 Archaeological Excavation (3,6)
Archaeological field methods including excavations of prehistoric sites, record-keeping, care of artifacts, mapping, and data analysis. Prerequisite: consent of instructor. (Summers/On demand)

ANTH 301 The North American Indian (3)
Cultural systems of the North American Indian including major areas, languages, and behavior patterns through case studies of selected groups. Prerequisites: ANTH 101,102. (Spring)

ANTH 310 Qualitative Methods in Social Research (3)
Theoretical, descriptive, and instructive aspects of qualitative social research including theoretical perspectives, field journalism, participant observation, interviewing, ethics, and research design. Students will conduct and discuss brief fieldwork in the community. Prerequisite: ANTH 102. (Fall)

ANTH 322 Southwest Archaeology (3)
The archaeological record of the Colorado plateau, Utah basin and range, Mogollon rim, and desert southwest; review of literature on desert archaic, Fremont, Anasazi, Mogollon, Hohokam, and desert cultures; discussion of problems in the reconstruction of southwest prehistory. Prerequisite: ANTH 222 recommended. (Fall)

ANTH 361, 362 Archaeological Excavation II (3,6)
Archaeological excavation of prehistoric sites including administration, excavation strategy, recordation, photography, sampling, laboratory work, and report preparation. Prerequisites: upper division standing and consent of instructor. (Summers/on demand)

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 102, 310. (Spring)

ART

School of Humanities and Fine Arts

The Mesa State College Art Department maintains and displays a collection of student art work and reserves the right to retain one piece of work from each student enrolled in a studio class.

§ARTE 101 Two Dimensional Design (3)
The principles of form and function in two dimensional design with emphasis on color theory and use. (Fee charged for some of the materials used.) One and one-half hours of lecture and three hours of studio per week. (Fall/Spring)

§ARTE 102 Three Dimensional Design (3)
The principles of form and function in sculpture and other three dimensional design areas. (Fee charged for some of the materials used.) One and one-half hours of lecture and three hours of studio per week. (Fall/Spring)

§ARTE 115 Art Appreciation (3)
Some of the hows, whys, and whos of painting, sculpture, and functional design in selected periods and places. (Spring)

ART SAMPLER COURSES These courses offer brief (sometimes on modular scheduling) introductions to one art medium. (2 hours studio)

ARTE 130	Fibers (On demand)	(1)
ARTE 154	Ink Drawing Prerequisite: ARTE 151 or consent of instructor. (Spring)	(1)
ARTE 170	Printmaking (On demand)	(1)
ARTE 192	Pastels Prerequisite: ARTE 151 or consent of instructor. (Fall)	(1)
ARTE 193	Airbrush Prerequisite: ARTE 151 or consent of instructor. (Fall/Spring)	(2)

§ARTE 151 Basic Drawing (3)
Freehand drawing of figural and environmental subjects through perceptual exercises and common drawing media. (A model fee will be charged.) Six hours of studio. (Fall/Spring)

§ARTE 190 Mixed Media (2)
Water based media, such as ink, dye, watercolor (both transparent and opaque) acrylic and tempera are used in the creative process). Prerequisite: ARTE 151. (Fall)

ARTE 210 Early Childhood Art (3)
Theory and practice of art education for young children through lecture, laboratory, and practice teaching culminating in resources for teaching. Two hours of lecture and two hours of laboratory per week. (Fall)

§ARTE 211 Art History: Ancient-1300 (3)
A chronological study of the art and architecture of the prehistoric, ancient, and medieval worlds. (Fall)

§ARTE 212 Art History: Europe 1300-1900 (3)
Chronological study of European painting, sculpture, and architecture from the Italian Renaissance to the beginning of the Modernist Period. (Spring)

ART PROCESSES AND MEDIA These courses introduce traditional materials of the visual arts through studio experiences with lectures on theory and history of the media. (Fee charged for some materials.) One hour of lecture and four hours of studio per week.

ARTE 221	Metalsmithing Prerequisite: ARTE 102 or consent of instructor. (On demand)	(3)
ARTE 231	Fibers Prerequisite: ARTE 101 or consent of instructor. (On demand)	(3)
ARTE 241	Ceramics, Handbuildings Prerequisite: Consent of instructor.	(3)
ARTE 242	Ceramics, Potters' wheel Prerequisite: ARTE 241 or consent of instructor.	(3)
ARTE 271	Printmaking — Relief and Intaglio Prerequisite: ARTE 101, 151 or consent of instructor. (Fall)	(3)
ARTE 272	Printmaking — Lithography Prerequisite: ARTE 101, 151 or consent of instructor. (Spring)	(3)
ARTE 281	Sculpture — Modeling and Mold Making Prerequisite: ARTE 102 or consent of instructor.	(3)
ARTE 282	Sculpture — Foundry Prerequisite: ARTE 102 or consent of instructor.	(3)
ARTE 283	Sculpture — Carving and Construction Prerequisite: ARTE 102 or consent of instructor.	(3)
ARTE 284	Ceramic Sculpture Prerequisite: ARTE 102 or consent of instructor. (Fall)	(3)
ARTE 291	Painting Prerequisites: ARTE 101, 151, or consent of instructor. (Fall/Spring)	(3,3)
ARTE 293	Watercolor Painting Prerequisites: ARTE 101, 151, or consent of instructor. (On demand)	(3)

ARTE 251 Figure Drawing **(3)**
Emphasis on the tradition of the human figure using contemporary concepts of composition and techniques, quality drawing tools, and surfaces. Nude models, bones, and anatomy charts as well as reproductions of the work of figurative artists are utilized. (A model fee will be charged.) One hour of lecture and four hours of studio per week. Prerequisite: ARTE 151 or consent of instructor. (Spring)

ARTE 255 Visual Art Workshop **(1)**
Intensive study of a selected art medium. Thirty hours of studio work. (Summer)

ARTE 261 Introduction to Computer Art **(3)**
Basic concepts of computers as a Fine Art tool utilizing the Commodore Amiga computer. History, terminology, hardware, and hands on experience with emphasis on the creative process. Two hours lecture and two hours studio per week. Prerequisites: ARTE 101, 151 or consent of instructor. (Spring)

ARTE 300 Exhibitions and Management **(2)**
The business of art including art law, studio management, sales practices, presentation of art work, conservation practices, and gallery design. One hour of lecture and two hours of laboratory per week. (Fall)

ARTE 315 Modernist Art History **(3)**
Sequence of movements and schools of art from 1850 to 1950 including conditions and influences affecting art and the work of major artists, surveyed through slides and reading. Prerequisites: ARTE 211, 212 or consent of instructor. (Spring)

ARTE 316 Post Modern Art History **(3)**
Art of the second half of the 20th century including conditions and influences affecting art and the work of major artists, surveyed through slides and reading. Prerequisites: ARTE 211, 212, 315 or consent of instructor. (Spring)

ADVANCED STUDIOS Specific media to be studied in a structured class, or a general studio including a variety of media and individually contracted work. One hour of lecture and four hours of studio per week. Prerequisites: ARTE 101, 102, 151, 211, 212, and at least three hours of the same Processes and Media at the 200 level.

ARTE 321	Metalsmithing (On demand) Prerequisites: ARTE 151, 221	(3)
ARTE 341	Pottery Production (Fall/Spring) Prerequisites: ARTE 241 or 102 and 242	(3)
ARTE 342	Intermediate Ceramics (On demand) Prerequisites: ARTE 241, 242	(3)
ARTE 352	Drawing (Spring) Prerequisites: ARTE 101, 251	(3)
ARTE 371	Printmaking (Fall) Prerequisites: ARTE 271	(3)
ARTE 372	Printmaking (Spring) Prerequisites: ARTE 272	(3)
ARTE 381, 382	Sculpture (Fall/Spring) Prerequisites: ARTE 281 or 282	(3,3)
ARTE 384	Ceramic Sculpture (On demand) Prerequisites: ARTE 101, 102, 151, 211, 212, and at least three hours of the same process course at the 200 level.	(3)
ARTE 391, 392	Painting (Fall/Spring) Prerequisites: ARTE 291	(3,3)

ARTE 395 Independent Study **(1-3)**

ARTE 396 Topics **(1-3)**

ARTE 400 Exhibitions and Portfolio **(1)**
Theory and preparation of competitive exhibitions and presentation of the senior portfolio and exhibition. Two hours of laboratory per week. Prerequisite: ARTE 300. (Spring)

ADVANCED STUDIOS Specialized studio problems contracted by senior-level students preparing for graduate schools, culminating in a faculty examination of each student's portfolio and an exhibition of the student's work. Prerequisite: at least three hours in the same Advanced Studios at the 300 level. (6 hours studio)

ARTE 421	Metalsmithing (On demand) Prerequisites: ARTE 321	(3)
ARTE 441	Glaze Calculation (On demand) Prerequisite: ARTE 341	(3)
ARTE 442	Kiln Construction (On demand) Prerequisites: ARTE 341 or 342	(3)
ARTE 452	Drawing (Spring) Prerequisites: ARTE 352	(3)
ARTE 471	Printmaking (Fall) Prerequisites: ARTE 371	(3)
ARTE 472	Printmaking (Spring) Prerequisites: ARTE 372	(3)
ARTE 481, 482	Sculpture (Fall/Spring) Prerequisites: ARTE 381, 382	(3,3)
ARTE 484	Ceramic Sculpture (On demand) ARTE 101, 102, 151, 211, 212, 384 and at least three hours of the same process course at the 200 level.	(3)
ARTE 491, 492	Painting (Fall/Spring) Prerequisites: ARTE 391, 392 and 315 or 316	(3,3)

ARTE 455 Visual Art Workshop (1)
Advanced study of a selected art medium. Thirty hours of studio work. Prerequisite: permission of instructor. (Summer, on demand)

ARTE 494 Seminar (2)
Topics related to art criticism, history, and aesthetics. Prerequisite: senior standing. (Fall)

ARTE 495 Independent Study (1-3)

ARTE 496 Topics (1-3)

AUTOMOTIVE COLLISION REPAIR

School of Technology

AUBF 108 Introduction to Auto Body Repair (1)
AUBF 108L Introduction to Auto Body Repair Laboratory (3)
Designed to teach the use of auto body repair equipment and tools; skills, such as roughing and alignment, shrinking, grinding; and the use of body fillers. These skills will allow the student to become competent to repair auto body panels. Modular course — two hours lecture, 12 hours laboratory per week. Prerequisite: consent of the instructor. (Fall)

AUBF 109 Auto Body Repair and Preparation (1)
AUBF 109L Auto Body Repair and Preparation Laboratory (3)
Designed to teach students panel repair with the use of tools, skills and techniques acquired in AUBF 108. A student is required to repair a given number of auto body panels, such as doors, fenders, hood panels, and quarter panels to complete this course. Modular course — two hours lecture, 14 hours laboratory per week. Prerequisites: AUBF 108, 108L. (Fall)

AUBF 118 Introduction to Painting/Preparation (1)
AUBF 118L Introduction to Painting/Preparation Laboratory (3)
Training in the use of paint spraying equipment, and auto body panel paint preparation, including cleaning, sanding, masking, and spraying techniques. Other acquired skills include using primers, sealers, acrylic lacquers, acrylic enamels, polyurethane, and polyoxythane enamels. Each student is required to prepare and spray paint a given number of practice panels before painting complete automobiles. Modular course — three lecture and 12 laboratory hours per week. Prerequisite: consent of instructor. (Fall)

AUBF 119 Complete Auto Painting (1)
AUBF 119L Complete Auto Painting Laboratory (3)
Painting skills acquired in AUBF 118 will be utilized by the student to prepare and spray paint complete paint jobs on approved vehicles. Preparation and painting consists of cleaning, sanding, masking, priming, guide-coating, resanding, sealing, spray painting and detailing of automobiles. Modular course — three lecture hours and 12 laboratory hours per week. Prerequisites: AUBF 118, 118L. (Fall)

AUBF 130 Auto Reconditioning (1)
AUBF 130L Auto Reconditioning Laboratory (2)
Instruction in new car preparation, glass removal and installation, minor panel repair and refinishing, spot painting, cleaning, dyeing and repair of vinyl and upholstery, airbrush painting, exterior finish buffing and polishing, and general automotive detail procedures. One lecture hour and four laboratory hours per week (Fall)

AUBF 140 Suspension and Mechanical Components (1)
AUBF 140L Suspension and Mechanical Components Laboratory (1)
Instruction includes steering, suspension, engines, brakes, fuel systems, cooling, and air conditioning as applied to the collision repair trade. Lectures, demonstrations and laboratory. One hour lecture and two hours laboratory per week. (Spring)

AUBF 150 Auto Body Welding (1)
AUBF 150L Auto Body Welding Laboratory (2)
The student will gain skills for proficiency in basic oxy-fuel welding, cutting and brazing, and metal inert gas wire (MIG) wire feed welding as is required in auto body repair. Emphasis will be on new, lighter weight and high strength steels. Plasma arc cutting and resistance spot welding also addressed. One hour lecture and four hours laboratory per week. (Fall)

AUBF 200 Panel and Spot Painting (2)
AUBF 200L Panel and Spot Painting Laboratory (4)
Paint composition, refinishing products and their correct usage, color matching, and procedures to be used in making lacquer or acrylic spot repairs. Two hours lecture and eight hours laboratory per week. (Fall)

AUBF 210 Unibody and Frame Repair (2)
AUBF 210L Unibody and Frame Repair Laboratory (2)
Inspection, measurement, and repair methods used to repair unitized and conventional frames. Instruction will include floor systems, drive on rack and bench systems. Two hours lecture and four hours laboratory per week. (Fall)

AUBF 220 Shop Management (3)
Shop operation, expenditures, floor-plan design, and equipment for the modern shop including management of employees. Three hours per week. (Spring)

AUBF 228 Bolt-on Body Service (1)
AUBF 228L Bolt-on Body Service Laboratory (2)
Instruction and practice of replacement parts and glass to proper manufacture specifications. Special attention to fit and structural integrity without leaks and rattles. Modular course — one hour lecture and eight hours laboratory per week. (Fall/Spring)

AUBF 229 Extensive Damage Repair (1)
AUBF 229L Extensive Damage Repair Laboratory (2)
Severe collision repair procedures. Emphasis on metal work, additional painting, corrosion protection, and special events. Modular course — one hour lecture and eight hours laboratory per week. Prerequisites: AUBF 108, 108L. (Fall/Spring)

AUBF 238 Weld-on Body Service (1)
AUBF 238L Weld-on Body Service Laboratory (3)
Application of body sheet metal panels that are welded onto the vehicle. Other areas covered are body electrical, sectioning, and sheet molded compounds. One hour lecture and 13 hours laboratory per week. Prerequisites: AUBF 228, 228L, 229, 229L. (Fall/Spring)

AUBF 239 Complete Collision Repair (1)
AUBF 239L Complete Collision Repair Laboratory (3)
Provides experience with heavy damage along with production shop situations. This helps the student bring all of the two years of instruction together before going to work. Modular course — one hour lecture and thirteen hours laboratory per week. Prerequisites: AUBF 228, 228L, 229, 229L, 238, 238L. (Fall/Spring)

AUBF 250 Estimating (3)
Parts catalogs, flat rate, remove and-replace procedures, insurance appraisals, and writing collision repair bids. Three hours per week. (Spring)

AUBF 295 Independent Study (1,2)

AUBF 296 Topics (1,2)

BIOLOGY

School of Natural Sciences and Mathematics

§BIOL 101, 102 General Biology (2,2)
§BIOL 101L, 102L General Biology Laboratory (1,1)
Ecology, pollution, drugs, sex education, disease problems, body structure and function, phylum relationships, plant growth and development. A student with a biology emphasis will not receive graduation or general education credit for any of these courses. Two lectures and one two-hour laboratory per week. (Fall/Spring)

§BIOL 105 Attributes of Living Systems (4)
§BIOL 105L Attributes of Living Systems Laboratory (1)
Organization, stability, and change in living systems. Four lectures and one two-hour laboratory per week. (Fall/Spring)

§BIOL 106 Principles of Animal Biology (3)
§BIOL 106L Principles of Animal Biology Laboratory (2)
Broad morphological, physiological, and ecological features of principal phyla of animals and relationships between them. Three lectures and two two-hour laboratories per week. Prerequisite: BIOL 105 or consent of instructor. (Spring)

§BIOL 107 Principles of Plant Biology (3)
§BIOL 107L Principles of Plant Biology Laboratory (2)
Organisms traditionally assigned to the plant kingdom; bacteria, fungi, green-protists, algae, and true plants. Morphology, reproductive biology, anatomy, and phylogeny of each group. Three lectures and two two-hour laboratories per week. Prerequisite: BIOL 105 or consent of instructor. (Fall)

BIOL 111 Conservation of the Environment (2)
Natural resources including forests, range, minerals, water, and wildlife as well as national, state, and local policies and programs for the use of such resources. (Spring)

BIOL 113 Outdoor Survival (3)
Involves vigorous physical activity relating to survival in diverse situations including wilderness survival and survival of biological, nuclear, and chemical warfare. Perfect attendance is required. Three one-hour lectures per week, three overnight weekend field trips and several Saturday trips. (Fall)

§BIOL 141 Human Anatomy and Physiology (3)
§BIOL 141L Human Anatomy and Physiology Laboratory (2)
Introduction to form and function of the human body. For students in general education, physical education, nursing, paramedical students, and biology majors. Three lectures and two two-hour laboratories per week. (Fall)

BIOL 201 Developmental Biology (4)
BIOL 201L Developmental Biology Laboratory (1)
Embryonic growth and development of plants and animals. Also errors in normal development, cancer, aging, and related topics. Four lectures and one two-hour laboratory per week. (Alternate Spring)

BIOL 202 Cellular Biology (3)
BIOL 202L Cellular Biology Laboratory (1)
Form, function, and bioenergetics of the cell. Three lectures and one two-hour laboratory per week. Prerequisites: BIOL 106, 107, or consent of instructor. (Spring)

BIOL 211 Ecosystem Biology (4)
BIOL 211L Ecosystem Biology Laboratory (1)
Ecological studies utilizing the concepts of population biology: energetics, dynamics, distribution, and sociology. Over-night and/or weekend field trips may be required. Four lectures and one two-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 including plant collection and herbarium techniques. Two lectures and two two-hour laboratories per week. Prerequisite: BIOL 107. (Fall)

BIOL 231 Invertebrate Zoology (3)
BIOL 231L Invertebrate Zoology Laboratory (1)
Invertebrate phyla structure, physiology, classification, and life history. Work on an independent project is required. Three lectures and one two-hour laboratory per week. (Alternate Spring)

BIOL 241 Pathological Physiology (4)
Function of the human body with emphasis on interpretation of those functions in relation to disease processes. Prerequisite: BIOL 141 or 341. (Fall)

BIOL 250 General Microbiology (3)
BIOL 250L General Microbiology Laboratory (2)
Microorganisms, especially the procaryotic bacteria; culture techniques, biochemical identification, and infectious human diseases. Three lectures and two two-hour laboratories per week. (Spring)

BIOL 301 Principles of Genetics (3)
BIOL 301L Principles of Genetics Laboratory (2)
Principles of genetics at the organismal, cellular, and molecular level dealing with the genetics of prokaryotic and eukaryotic organisms and viruses. Three lectures and two two-hour laboratories per week. Prerequisites: BIOL 105; BIOL 202 recommended. (Fall)

BIOL 315 Epidemiology (3)
Characteristic patterns of communicable disease occurrence as related to individuals, geographic location, and time; factors affecting disease occurrence, the nature of vital statistics, sampling procedures, and study design. An independent project is required. (Alternate Fall)

BIOL 320 Plant Systematics (3)
Systematic botany encompassing principles of classification, nomenclature, and evaluation of current classifications of angiosperms. Designed to be taken concurrently with BIOL 221. (Alternate Fall)

BIOL 321 Taxonomy of Grasses (2)
BIOL 321L Taxonomy of Grasses Laboratory (2)
A study of the grass family and grass-like plants (sedges and rushes) dealing with the evolution, classification, and identification of these plants. Two lectures and two two-hour laboratories per week. Prerequisite: BIOL 107 or consent of instructor. (Alternate Spring)

BIOL 330 Biological Chemistry (3)
BIOL 330L Biological Chemistry Laboratory (1)
Molecules and chemical reactions which are the basis of living systems with emphasis on the structure and function of proteins and the generation and storage of energy. Three lectures and one two-hour laboratory per week. Prerequisites: CHEM 121, 122, or equivalent. (Alternate Spring)

BIOL 331 Insect Biology (3)
BIOL 331L Insect Biology Laboratory (1)
Insect taxonomy, structure and function, relationships, ecology, physiology, and reproduction with emphasis placed on the role of insects in the biosphere. Insect collection required. Three lectures and one two-hour laboratory per week. Prerequisite: BIOL 106. (Alternate Fall)

BIOL 341 General Physiology (3)
BIOL 341L General Physiology Laboratory (1)
Function of the circulatory, nervous, respiratory, digestive, urinary, reproductive, and endocrine systems of the human body. Three lectures and one two-hour laboratory per week. Prerequisite: BIOL 106 or consent of instructor. (Alternate Fall)

BIOL 342 Histology (2)
BIOL 342L Histology Laboratory (2)
Microscopic study of tissues and organs. Two lectures and two two-hour laboratories per week. Prerequisites: BIOL 106 or BIOL 107 and consent of instructor. (Alternate Fall)

BIOL 343 Immunology (3)
BIOL 343L Immunology Laboratory (1)
Immune system of animals with emphasis on human immune response. Includes the immune organs and both cellular and humoral responses. An independent research project is required. Three lectures and one two-hour laboratory per week. (Alternate Spring)

BIOL 393 Teaching Science in the Secondary School (3)
Methods of teaching and construction of lessons and curricula. To be taken not more than two semesters before student teaching. Lesson presentation and numerous papers required. Required for secondary certification. (Spring)

BIOL 395 Independent Study (1-3)

BIOL 396 Topics (1-3)

BIOL 403 Evolution (3)
Organismal and molecular evolution emphasizing its importance as the unifying theory in biology. Evolution of natural selection on genetic structure of populations. Prerequisites: BIOL 106, 107, 301, and senior standing. (Spring on demand)

BIOL 411 Mammalogy (2)
BIOL 411L Mammalogy Laboratory (1)
Classification, life histories, and ecology of mammals. Overnight and/or weekend field trips may be required. Two lectures and one two-hour laboratory or three-hour field trip per week. Prerequisite: 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 414 Aquatic Biology (3)
BIOL 414L Aquatic Biology Laboratory (1)
Classification, life history, and ecology of aquatic animals. Overnight and/or weekend field trips may be required. Three lectures and one two-hour laboratory or three-hour field trip per week. Prerequisite: upper division standing or permission of instructor. (Alternate Spring)

BIOL 415 Tropical Ecosystems (2)
Coral reef, rain forest, and arid desert ecosystems on Caribbean islands. Ten two-hour lectures, ten two-hour laboratories, and ten six-hour field trips conducted at the marine station and primate colony of the University of Puerto Rico. Prerequisites: one year of biological sciences and consent of instructor. (Semester break on demand)

BIOL 416 Ethology (3)
BIOL 416L Ethology Laboratory (1)
Mechanisms and evolution of behavior utilizing captive animals and field trips. Overnight field trips may be required. Three lectures and one two-hour laboratory per week and several field trips, possibly overnight. Prerequisites: BIOL 106, 107, and consent of instructor. (Alternate Spring)

BIOL 421 Plant Physiology (3)
BIOL 421L Plant Physiology Laboratory (2)
Plant growth and development at the molecular and cellular level to account for plant growth at the organismic level. Three lectures and two two-hour laboratories per week. (Alternate Spring)

BIOL 423 Plant Anatomy (3)
BIOL 423L Plant Anatomy Laboratory (2)
Form, variability, and structure of the tissues comprising the body of the higher plant. Three lectures and two two-hour laboratories per week. Prerequisites: BIOL 107, 107L. (Alternate Spring)

BIOL 425 Molecular Genetics (3)
Nature and expression of genetic information at the molecular level in prokaryotic and eukaryotic organisms. Prerequisite: BIOL 301. (Alternate Spring)

BIOL 431 Animal Parasitology (3)
BIOL 431L Animal Parasitology Laboratory (1)
Common and important parasites of domestic animals and man. Ecology, epidemiology, diagnosis, and control are discussed with examples from the Protozoa, Trematoda, Cestoda, Nematoda, and Arthropoda. An independent research project is required. Three lectures and one two-hour laboratory per week. (Alternate Fall)

BIOL 441 Endocrinology (3)
BIOL 441L Endocrinology Laboratory (1)
Anatomy and physiology of the endocrine system of vertebrates. Laboratory: emphasis on normal and abnormal endocrine functions. Three lectures and one two-hour laboratory per week. Prerequisite: BIOL 106 or consent of instructor. (Alternate Fall)

BIOL 442 Pharmacology (3)
Principles underlying absorption, distribution, metabolism, and excretion of drugs with emphasis on mechanisms of action and physiological responses. Prerequisite: BIOL 141 or consent of instructor. (Alternate Spring)

BIOL 441 Mycology (2)
BIOL 441L 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. Prerequisite: BIOL 107 or consent of instruction. (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. Required prior to enrolling in Biology 483, Senior Thesis. Two lectures per week or equivalent. Prerequisites: senior standing, 2.80 GPA, and consent of instructor. (Fall)

BIOL 483 Senior Thesis (2)
Designed to introduce students to appropriate procedures for collecting and analyzing data and preparing written and oral presentations of experimental data. Lectures, seminars and/or laboratory work as required. Prerequisites: Biology 482 and consent of instructor. (Spring)

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 495 Independent Study (1-3)

BIOL 496 Topics (1-3)

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

BUGB 101 Introduction to Business (3)
American business system operations in the economy, business functions, and interrelations between the businessman and his environment. (Fall/Spring)

BUGB 141 Business Mathematics (3)
Fundamental review of whole numbers, decimals, and fractions. Emphasis is placed on percentage applications to solving various business problems in the areas of buying and selling merchandise, inventory computations, interest computations on notes and savings, consumer credit and installment computation, home mortgage loans, and business depreciation computations. (Fall/Spring)

BUGB 211 Business Communications (3)
Development of a non defensive, supportive, communication system effectively applied to interpersonal and written transactions within the business organization. Prerequisite: ENGW 111. (Fall/Spring)

BUGB 221 Insurance (3)
Common types of protection offered by insurance, including fire, theft, comprehensive, life, automobile, accident, and health. Emphasis on application of insurance to individuals and small business firms. (Spring)

BUGB 231 Survey of Business Law (3)
Application of law as it applies to employees and individuals not dealing with legal matters of organizations. Topics include contracts, agency law, personal property, business organizations and form, and commercial paper. Especially suited for non-business majors. Students contemplating or enrolled in a four year degree program should take BUGB 351 and 352. No credit allowed if credit already established in BUGB 351. (Spring)

BUGB 241 Income Tax (3)
Personal income tax, including filling out personal tax returns, exemptions, determining taxable income, adjustments to gross income, itemized deductions, rental income, depreciation, capital gains and losses. Not for students with an accounting emphasis. (Spring)

BUGB 249 Personal Finance (3)
Personal finance management, including income, personal budgeting, taxes, securing loans, consumer credit, insurance, buying a home, and an introduction to investment. (Spring)

BUGB 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. Prerequisite: 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. Prerequisites: BUGB 351 and junior or senior standing or consent of instructor. (Spring)

BUGB 395 Independent Study (1-3)

BUGB 396 Topics (1-3)

BUGB 495 Independent Study (1-3)

BUGB 496 Topics (1-3)

CHEMISTRY

School of Natural Sciences and Mathematics

§CHEM 100 Chemistry and Society (3)
Introduction to selected topics in chemistry. Nonmathematical approach with frequent lecture demonstrations and particular attention to chemical technology and its impact on society. (Fall)

§CHEM 121 Introductory Inorganic Chemistry (4)
§CHEM 121L Introductory Inorganic Chemistry Lab (1)
Introduction to fundamental principles of chemistry. Designed for students planning an emphasis in science as well as students with a non-science emphasis. 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 Introduction to Organic Chemistry (4)
§CHEM 122L Introduction to 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. Prerequisites: 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 an emphasis in science. Topics include atomic structure, bonding, periodic law, kinetic theory, gas laws, stoichiometry, phase relationships, solutions, oxidation-reduction, electrochemistry, and equilibrium. Four lectures and one three-hour laboratory per week. Prerequisites: one year of high school chemistry and mastery of high school algebra. (Fall/Spring)

CHEM 151 Engineering Chemistry (4)
CHEM 151L Engineering Chemistry Laboratory (1)
Selected fundamentals of inorganic chemistry. Topics include stoichiometry, periodic law, bonding, gas laws, phase relations, solutions, electrochemistry, and equilibrium. Designed for students of physics and engineering (except chemical engineering.) Four lectures and one three hour laboratory per week. Corequisite: MATH 113. Prerequisites: high school chemistry and satisfactory entrance examination scores or CHEM 121. (On demand)

CHEM 311, 312 Organic Chemistry (3,3)
CHEM 311L,312L Organic Chemistry Laboratory (2,2)
Chemical and physical properties of the major classes of organic compounds. Three lectures and two three-hour laboratories per week. Prerequisite: CHEM 132 or consent of instructor. (Fall/Spring)

CHEM 321 Physical Chemistry I (3)
CHEM 322 Physical Chemistry II (3)
Application of methods of physics to chemistry. Study of equilibrium properties of bulk matter, quantum theory with applications to molecular structure. Statistical mechanics used to understand the microscopic origin of thermodynamic laws. Calculations of macroscopic thermodynamic properties made from molecular properties. Connection made in kinetics between thermodynamics, quantum theory and statistical mechanics for study of time-dependent processes. Prerequisites: PHYS 122 and CHEM 121 or CHEM 131 or CHEM 151 or consent of instructor. (Fall/Spring)

CHEM 331 Physical Chemistry Laboratory (2)
Application of the experimental methods of physics to chemical systems. Each student chooses from a list of possible experiments or works with the instructor to develop experiments. Corequisite: CHEM 322. (Spring)

CHEM 295 Independent Study (1-3)

COMPUTER DRAFTING TECHNOLOGY

School of Technology

CADT 100 Basic CAD/CAM (2)
CADT 100L Basic CAD/CAM Laboratory (2)
Designed to give the student a basic working knowledge of CAD and how to apply a CAM package for production of machine parts. Prerequisites: computer and machining experience preferred or consent of instructor.

CADT 107 Computer Aided Drafting (2)
CADT 107L Computer Aided Drafting Laboratory (2)
Advanced work in computer aided drafting principles including 2-D, 3-D, shading, etc. Prerequisites: ENGR 106, 106L or consent of instructor. (On demand)

CADT 110 CAD Application (2)
CADT 110L CAD Application Laboratory (2)
The course offers the student an opportunity to apply skills and knowledge gained in earlier courses. The student will work on computer aided drawings relating to their career field of interest and advice of faculty. Intern or Coop may be substituted with approval of adviser. Prerequisites: CADT 107, 107L. (On demand)

COMPUTER INFORMATION SYSTEMS

School of Business

CISB 102 Computer Literacy (1)
Basic concepts of computers with focus on terminology, hardware, software, and implication of computers in today's world. (Fall/Spring)

CISB 103 Business Computer Concepts (1)
Business use of computers including discussion of computer security, privacy of information, future implications, purchasing computers and software, and business application. Prerequisite: CISB 102 or equivalent. (Fall/Spring)

CISB 104 BASIC Programming (1)
Basic concepts of programming through use of BASIC language. Several BASIC programs will be written. Prerequisite: CISB 102 or equivalent. (Fall/Spring)

CISB 105 Introduction to Business Software (1)
Current business software. Electronic spread sheets, word processing, and data base software at a beginning level. (Fall/Spring)

CISB 131 COBOL Programming I (3)
Writing programs in COBOL using modern methods of top-down, structured design. Emphasis placed on traditional business applications such as payroll, accounts receivable, and inventory control. Students learn to debug and document programs. Prerequisite: CISB 104 or consent of instructor. (Fall)

CISB 205 Advanced Business Software (3)
Students become proficient through a combination of lecture, demonstration, and projects in the advanced use of electronic spread sheets, word processing, and data base management software. Prerequisites: CISB 105, ACCT 202. (Spring)

CISB 231 COBOL Programming II (3)
Continuation of CISB 131 including disk, sequential, indexed sequential random processing, and use of operating system resources for systems development. Prerequisite: CISB 131. (Spring)

CISB 295 Independent Study (1,3)

CISB 298 Related Work Experience (1,2)
See ACCT 298 course description. (Fall/Spring)

CISB 321 Assembler Language (3)
See CSCI 321 for course description.

CISB 392 Computers in Management (3)
Use of computers by management to run businesses more effectively with particular attention to the advantages of using computers, the problems associated with computerized processing, and the controls which are necessary to insure output is correct. An in-depth look at the primary applications of A/R, A/P, P/R, G/L, and Inventory Control as well as the latest concepts such as Data Base allow the student to see the practical application of data processing. Appropriate for students with an emphasis in management, accounting and data processing. Prerequisites: CISB 102, 103, 105 and MANG 201. (Fall)

CISB 395 Independent Study (1-3)

CISB 396 Topics (1-3)

CISB 442 Systems Analysis and Design (3)
Basic systems analysis tools and the procedures for conducting a systems analysis, including systems requirements, initial analysis, general feasibility study, structured analysis, detailed analysis, logical design, and the general systems proposal. Students gain practical experience through projects and/or case studies. Prerequisites: ACCT 202 and at least two programming courses or consent of instructor. (Fall)

CISB 451 Database Administration (3)
Covers design and implementation of a Database Management System from a non-technical viewpoint. Recommended for business majors with focus on business users in the design of the DBMS, control integrity, and security. DBMS implementation will be through hands-on use of an actual DBMS. Prerequisites: CISB 105, 442, ACCT 202. (Spring)

CISB 471 Management Information Systems (3)
Follows CISB 442 and will integrate management information needs, decision-making criteria, and design of manager/computer interactive systems. Computerized management control systems for all major functional modules of an organization will be investigated as well as computer simulations, data base management systems, distributed processing, and structured systems development. Prerequisites: ACCT 311 or ACCT 331 and CISB 442 or consent of instructor. (Spring)

CISB 495 Independent Study (1-3)

CISB 496 Topics (1-3)

COMPUTER SCIENCE

School of Natural Sciences and Mathematics

§CSCI 100 Computers in Our Society (3)
The impact of computers on society and individuals; purpose and use of software integrated systems. Intended for students in disciplines outside the natural sciences and mathematics. (Fall/Spring)

§CSCI 111 Computer Science I (3)
Designed to introduce students to the scope and dynamics of computer science and to lay the foundation for further study in the discipline. General principles for algorithm design and analysis are emphasized, and Pascal is used as the language of implementation. Control structures for sequencing, branching, and looping are studied, along with an introduction to data structures (including arrays and records) and program modularization. (Fall/Spring)

§CSCI 112 Computer Science II (3)
Continuation of CSCI 111 with further emphasis on algorithm design and analysis, procedural abstraction, data abstraction, and quality programming style. Topics covered include dynamic allocation of variables, recursion, and various implementations of stacks, queues, trees, and lists. Prerequisite: CSCI 111.

CSCI 120 Technical Software (3)
Microcomputer software used primarily for engineering. Introduction to computer aided design, computer aided manufacturing, word processing, spread sheet, database management, and MS DOS graphics. (Fall/Spring)

§CSCI 131 FORTRAN Programming (3)
§CSCI 131L FORTRAN Programming Laboratory (1)
FORTRAN language emphasizing structured programming. Sub-programs, sequential files, direct access files, and FORTRAN data structures are stressed in programs written. Three lectures and two one-hour laboratories per week. Prerequisite: Math 113 or consent of instructor. (Fall/Spring)

CSCI 133 PASCAL Programming (3)
CSCI 133L PASCAL Programming Laboratory (1)
PASCAL and the concepts of structured programming. Includes programming topics and techniques such as character manipulation, arrays, modular programming, searching and sorting techniques, files and records, and data structures. Three lectures and two one-hour laboratories per week. Prerequisite: MATH 113. (Fall/Spring)

CSCI 135 COBOL Programming (3)
See CISB 131. Computer science students normally enroll in CISB 131 but are offered this course upon demand when CISB 131 is not offered. (Fall/Spring)

CSCI 241 Computer Architecture I (3)
Architecture of a representative processor and its assembly language, introduction to hardware description language, register transfers and sequence control, realization of fetch, address, branch and execute cycles, start, stop and reset the computer, interrupt and memory mapped input-output, peripherals and interfacing. Prerequisite: CSCI 112. (Fall)

CSCI 242 Computer Architecture II (3)
Computer classes and description using PMS or ISPS, description of few commercial computers, computer arithmetic, binary/octal/hexadecimal number system, hardware for arithmetic operations including floating-point type, processor management, memory organization and schemes, input-output management, control unit and microprogramming, multi- and parallel processors. Prerequisite: CSCI 241. (Spring)

§CSCI 250 Data Structures (3)
Information representation, relationships between forms of representations and processing techniques, transformation between storage media, referencing of information as related to the structure of its representation, concepts of arrays, records, files, trees, list and list structure, sorting and search techniques. Prerequisite: CSCI 112. (Fall/Spring)

CSCI 321 Assembly Language Programming (3)
Introduction to assembler, creating and executing assembly language program, organization of machine under study, data definition, addressing techniques, data movement instruction, branching instructions, flag and PSW registers, arithmetic instructions, macros and their implementation, hardware and software interrupts, storing instructions, typical applications. Prerequisites: CSCI 112. (Fall)

CSCI 330 Programming Languages (3)
Algorithmic languages, declarations, storage allocation, subroutines, co-routines, and tasks. The principles and concepts which characterize various classes of high-level, computer-programming languages are covered as well as list-processing language development and use. Analyzes strengths and weaknesses of list processors: SNOBOL, IPLV, LISP, etc. Prerequisites: CSCI 250,321. (Fall/Spring)

CSCI 335 The C Programming Language (3)
Program writing in the C language with emphasis on its capabilities and limitations. Includes scientific computations and business applications equally. Prerequisite: CSCI 112. (Spring)

CSCI 350 Software Engineering-ADA (3)
CSCI 350L Software Engineering-ADA Laboratory (1)
ADA programming language with advanced concepts of the language including subprograms, packages, exceptions, tasks, generics and software engineering. Three lectures and one two-hour laboratory per week. Prerequisite: CSCI 330. (Spring)

CSCI 373 Computer Software Systems (3)
Assembly systems, macros, I/O programming, executive systems, protection techniques, generation and maintenance, priority and scheduling techniques for batch processing. Prerequisites: CSCI 241,250. (Fall/Spring)

CSCI 380 Operations Research (3)
Methods of linear and dynamic programming, inventory and replacement models, queuing theory, game theory, PERT, CPM, and simulation. Prerequisites: MATH 152, STAT 200, CSCI 111. (Spring, odd years only)

CSCI 395 Independent Study (1-3)

CSCI 396 Topics (1-3)

CSCI 445 Computer Graphics (3)
Use of the computer to produce images; one, two, and three dimensional graphics; algorithms and data structures for hidden lines and surfaces; shading; and reflections. Prerequisites: MATH 265 and CSCI 250. (Fall)

CSCI 450 Compiler Structure (3)
Structures and techniques used in compiler writing are discussed with emphasis on Scanners, Symbol Tables, Parsers and code generation. The front end of a recursive descent parser is written for the semester project. Error analysis and code optimization are discussed as time permits. Prerequisites: CSCI 330, 373. (Fall/Spring)

CSCI 460 Data Base Design (3)
Design and implementation of data base systems. The network, hierarchical, and relational approaches to design, and the problems of security and integrity will be discussed. Prerequisite: CSCI 450. (Fall/Spring)

CSCI 470 Operating Systems Design (3)
Aspects of computer operating system design and implementation including memory management, processor management, device management, information management and performance evaluation methods. Prerequisite: CSCI 321. (Fall/Spring)

CSCI 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)

CRIMINAL JUSTICE

School of Social and Behavioral Sciences

CSJU 111 Introduction to the Administration of Justice (3)
History and philosophy of the administration of justice in America. Recapitulates the system identifying the various sub-systems, ethics, education, and training for professionals in the system. (Fall)

CSJU 222 Law Enforcement Operations (3)
Analysis of the relationship between major law enforcement problems and the broader community, responsibilities, resource allocation and enforcement strategies. Prerequisites: CSJU 111. (Fall)

CSJU 251 Justice Procedures (3)
Analysis of landmark decisions which have impacted the procedural rights of the accused and justice operations. Prerequisites: CSJU 111. (Spring)

CSJU 304 Treatment of Offenders (3)
Offender treatment including the criminogenic conditions in a community contributing to criminality, the human services available to assist offenders in accommodating to community life, the history of offender treatment, and the role of probation, parole, and community treatment in the criminal justice system. Prerequisite: CSJU 111 or consent of instructor. (Fall)

CSJU 395 Independent Study (1-3)

CSJU 396 Topics (1-3)

CSJU 401 Criminal Law (3)
American criminal law in case studies. Includes an analysis of crimes against persons and property, criminal responsibility, and the law of substantive procedure. Prerequisite: junior standing and/or 12 hours of CSJU classes. (Spring)

CSJU 495 Independent Study (1-3)

CSJU 496 Topics (1-3)

CSJU 499 Internship (1-4)
Provides the student with opportunities to apply theoretical principles in a structured organizational or work environment. Student must have prior instructor and site approval at least one semester in advance of the internship. The student must complete 45 clock hours for each one hour of credit. Prerequisites: senior status in Criminal Justice, G.P.A. in Criminal Justice of 3.0, overall G.P.A. of 2.75 and consent of instructor. (Fall)

DEVELOPMENTAL COURSES

DEVL 090 College Study and Reading Skills (3)
Instruction in effective study skills needed in college such as note taking, test taking, critical reading, memory and concentration, time management, controlling math anxiety, examining individual learning styles, and goal setting. For students whose academic backgrounds need reinforcement. Three lectures and one one-hour learning laboratory per week.

ECONOMICS

School of Social and Behavioral Sciences

§ECON 201 Principles of Macroeconomics (3)
§ECON 202 Principles of Microeconomics (3)
Basic concepts of economics. Courses must be taken in sequence and are not open to freshmen. (Fall/Spring)

ECON 301 Labor-Management Relations (3)
Organized labor movement, employer labor policies, collective bargaining, wages and wage regulation, social insurance, and public labor policy. Counts as management course for BBA candidate. Prerequisites: ECON 201, 202, or equivalent. (Spring)

ECON 310 Money and Banking (3)
Monetary, credit, and banking systems in the United States. Counts as management course for BBA candidates. Prerequisites: ECON 201, 202, or equivalent. (Fall)

ECON 312 Economic History of the United States (3)
Economic development of the United States and the nation's economic institutions from the colonial period to the present. Prerequisites: ECON 201, 202 or HIST 131, 132, or consent of instructor. (On demand)

ECON 320 History of Economic Ideas (3)
Development of economic analysis, thought, theories, and doctrines from the ancient world to recent times. Prerequisites: ECON 201, 202, or equivalent. (Fall)

ECON 342 Intermediate Macroeconomic Theory (3)
Factors determining the level and rate of growth of GNP, the inflation rate, and the employment rate. Policies that have been (or may be) used to influence these variables, and empirical evidences on the relationships among variables are studied also. Prerequisite: ECON 201, 202, or equivalent, or consent of instructor. (Fall)

ECON 343 Intermediate Microeconomic Theory (3)
Problems of resource scarcity in a market economy. Emphasis is placed on an analysis of resource allocation under different forms of competition. Covers theory of the firm, theories of market structure, efficiency, equity, and the application of public policy. Prerequisite: ECON 201, 202, or equivalent, or consent of instructor. (Spring)

ECON 395 Independent Study (1-3)

ECON 396 Topics (1-3)

ECON 401 Economic Organization and Public Policy (3)
Political economy of economic organization and public policy including analysis of the structure/conduct dimensions of industry and government institutions and their effects on resource allocation, income distribution, and economic performance. Antitrust, regulation, and other policies are treated concurrently. Counts as a management course for BBA candidates. Prerequisite: ECON 201, 202 or equivalent. (Spring)

ECON 410 Public Sector Economics (3)
Political economy of government finance including analysis of the effects of government revenue and expenditure policies on resource allocation, income distribution, and economic performance. Counts as a management course for BBA candidates. Prerequisite: ECON 201, 202, or equivalent. (Fall)

ECON 420 International Economics (3)
International trade theory and policy such as balance of payments analysis, international investment flows, and the position of the dollar in foreign exchange transactions. Prerequisite: ECON 201, 202, or equivalent. (On demand)

ECON 495 Independent Study (1-3)

ECON 496 Topics (1-3)

EDUCATION, EARLY CHILDHOOD

School of Humanities and Fine Arts

EDEC 100 Parent Education and Preschool (1)
Parenting skills in a preschool situation. Enrollment of both parent and child is required. (Fall/Spring)

EDEC 110 Infant and Toddler Development and Curriculum (2)
Curriculum for the age group 0-2 1/2 years. Places emphasis on maintaining healthful, safe environmental activities to stimulate social, language, emotional, intellectual, and physical development. Should be taken in the *first* semester in which a student is enrolled in the program. (Fall)

EDEC 111 Curriculum in Early Childhood Education (3)
Philosophy and theory of preschool education, including laboratory experiences for learning about children and the philosophy, goals, and operation of the nursery school. Students spend time in assigned laboratory and participate in group meetings for discussion and evaluation. (Fall/Spring)

EDEC 121 Introduction to Early Childhood **(2)**
The field of early childhood, including the facilities and programs offered for young children, and observation of young children at work and play. Licensing and health regulations for children's centers are considered. Should be taken in the first semester in which a student is enrolled in the program. (Fall)

EDEC 196 Topics **(1)**

EDEC 252 Student Teaching **(5)**
Practice teaching experience in licensed centers under a qualified teacher, supervised by a college instructor, with conferences and evaluations of student's progress. Prerequisite: EDEC 111. (Fall/Spring)

EDEC 260 Child-Care Center Management **(3)**
Record keeping, budgeting, personal relations, and administrative techniques required in the operation of a child care center. Should be taken in the *final* semester in which a student is enrolled in the program. (Spring)

EDEC 297 Practicum **(1,2)**
Supervised experience working with children in child-care and day-care settings or in the Early Childhood Education Center. Accepted by the State Department of Social Services for licensing purposes. Scheduling is flexible. Prerequisite: consent of instructor. (Fall/Spring)

EDUCATION — TEACHER CERTIFICATION

School of Humanities and Fine Arts

EDUC 220 Foundations and Legal Aspects of Education **(3)**
An overview of history, philosophy, finance, organizational and curriculum patterns, and current and legal issues appropriate for the beginning education student. Two hours lecture per week plus five hours field experience for 10 weeks during semester. Prerequisites: Formal field experience, ENGW 111, 112, 100 hours of experience with youth and completion of California Achievement Test. (Fall/Spring)

EDUC 260 Teaching Diverse Populations **(2)**
Interdisciplinary course designed to acquaint student with socialization processes in preschool through 12th grade classrooms, historically and in a changing technological society. Prerequisites: EDUC 220, PSYC 233, SPCH 102, and successful completion of all sections of the California Achievement Test. (Fall/Spring)

EDUC 311 Creative and Physical Expression for Children **(3)**
Facilitation of children's creative and physical expression and problem solving in music, art, drama, games, movement and dance. Prerequisites: EDUC 260 and consent of Director of Teacher Certification. (Fall/Spring)

EDUC 320 The Developing Child in the School **(3)**
Coursework in applied educational psychology, preprimary through 12th grade. Prerequisites: EDUC 260 and consent of Director of Teacher Certification. (Fall/Spring)

EDUC 321 Current Issues in Curriculum Development **(3)**
Interdisciplinary curriculum course focused on the primary components of elementary level teaching. Prerequisites: EDUC 320 and consent of Teacher Certification Program Director. (Fall/Spring)

EDUC 350 Exceptionality in the Classroom **(3)**
Coursework providing information about various exceptionalities which include gifted and talented, abused children, ethnicity as it relates to exceptionalities. Prerequisites: consent of Teacher Certification Program Director; EDUC 321 for elementary certification; EDUC 320 for secondary certification. (Fall/Spring/Summer)

EDUC 360 Teaching and Learning in the Secondary School **(4)**
Comprehensive coursework in curriculum and classroom management. Requires the consolidation of skills and theories in prerequisite courses. Prerequisites: EDUC 350 and consent of Teacher Certification Program Director. (Fall/Spring)

EDUC 370 Orientation to Educational Technology **(3)**
Designed to acquaint students with the role of audio-visual media and computers in preprimary and 12th grade education. One hour lecture and four hours laboratory per week. Prerequisite: consent of Teacher Certification Program Director. (Fall/Spring)

EDUC 390 The Comprehensive Elementary Language Program (4)
Designed to provide the prospective teacher with a broad, in-depth view of the reading-language program in a changing society. Three hours lecture per week and five hours field experience per week for ten weeks during semester. Prerequisites: formal field experience and consent of the Director of Teacher Certification Program. (Fall/Spring)

EDUC 395 Independent Study (1-3)

EDUC 396 Topics (1-3)

EDUC 400 Learning Theories and Teaching Strategies in the Disciplines (4)
Coursework designed to expose students to learning theories and their applications which are pertinent to social studies, science, health, and mathematics. Prerequisites: EDUC 390, consent of Teacher Certification Program Director. (Fall/Spring)

EDUC 405 Reading and Writing in the Content Area (4)
Coursework focused on teaching developmental writing and reading at the secondary level (middle school and high school) within the content areas. Three lecture hours per week plus five hours field experience per week for ten weeks during semester. Prerequisites: formal field experience, EDUC 350, 370, and consent of the Director of Teacher Certification Program. (Fall/Spring)

EDUC 494 Pre-Internship Seminar (2)
Placed in settings in which they may research and study teaching, preservice teachers will put to use what they have already learned about teaching and learning. One hundred hours internship. Prerequisites: completion of all coursework and consent of Teacher Certification Program Director. (Fall/Spring)

EDUC 495 Independent Study (1-3)

EDUC 496 Topics (1-3)

EDUC 497 Practicum for Professional Educators: Elem/Sec/K-12 (1-6)
Designed for the practical application of previously studied theory. Credit is variable based on complexity of study agreed upon with the education adviser. Prerequisite: consent of Teacher Certification Program Director. (Fall/Spring)

EDUC 499C Teaching Internship and Colloquium: Elementary (12)
A full-time supervised teaching experience designed to allow the intern the opportunity to apply the theories and philosophies acquired in the professional education coursework. A triweekly colloquium is included during this 15-week experience. Prerequisites: completion of all coursework and consent of Teacher Certification Program Director. (Fall/Spring)

EDUC 499D Teaching Internship and Colloquium: Elementary (6)
Available for students who are pursuing K-12 certification: a seven and one-half week experience. Prerequisites: completion of all coursework and consent of Teacher Certification Program Director. (Fall/Spring)

EDUC 499G Teaching Internship and Colloquium: Secondary (12)
A full-time supervised experience designed to allow the intern the opportunity to apply the theories and philosophies acquired in the professional education coursework. A triweekly colloquium is included during this 15-week experience. Prerequisites: completion of all coursework and consent of Teacher Certification Program Director. (Fall/Spring)

EDUC 499H Teaching Internship and Colloquium: Secondary (6)
Available for students who are pursuing K-12 certification: a seven and one-half week experience. Prerequisites: completion of all coursework and consent of Teacher Certification Program Director. (Fall/Spring)

ELECTRIC LINEWORKER

School of 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, hot-stick maintenance, troubleshooting, and gloving from the pole. Four hours lecture, three hours laboratory per week. Prerequisite: ELCL 131. (Spring)

ELCL 136L Related Fundamentals I Laboratory (4)
Examination of National Electric Safety Code, truck maintenance, equipment operation, material records, electrical test meters, and introduction to transformers. Twelve hours per week. (Fall)

ELCL 137 Related Fundamentals II (2)
ELCL 137L Related Fundamentals II Laboratory (4)
Meter safety, connector installation, street lighting, rubber cover up, and public relations. Two hours lecture, eight hours laboratory per week. Prerequisites: 136L. (Spring)

ELCL 140 Underground Procedure (4)
ELCL 140L Underground Procedure Laboratory (2)
Safety practices, terminology, fault finding, cable locating, switching procedure, installation of terminal devices, splicing, and transformer application. Five hours lecture, four hours laboratory per week. (Spring)

ELCL 145 Hotline Procedures (1)
ELCL 145L Hotline Procedures Laboratory (2)
Two weeks of training by outside specialists covering current hotline maintenance and underground installation methods. Eight hours lecture, twenty-four hours laboratory per week. (Spring)

ELCL 195 Independent Study (1,2)

ELCL 196 Topics (1,2)

ELCL 199 Internship (6)
Opportunity for an individual to be employed for training by a utility company while maintaining his or her status as a Mesa State College student. Provides excellent on-the-job training benefits. Students usually selected for this course by formal interview. Eighteen hours per week, two semesters (Summer and Fall) after completion of regular program. Prerequisite: consent of instructor.

ELECTRONICS TECHNOLOGY

School of Technology

NOTE: Enrollment, with instructor approval, may occur at any time (open entry) for certain courses. Please check with the instructor.

ELCT 117 DC Passive Circuits (3)
ELCT 117L DC Passive Circuits Laboratory (1)
DC circuits including resistors, capacitors, inductors, applications of Ohm's and Kirchhoff's laws, and use of standard test equipment. Eight hours lecture (Fall)

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. Eight hours lecture, four hours laboratory per week; seven and one-half week module. (Fall)

ELCT 232 Personal Computers I (2)
ELCT 232L Personal Computers I Laboratory (2)
Basic hardware and software of the microcomputer system, including proficiency in use of MS DOS and troubleshooting problems with the peripherals and microcomputer to the board level. (Fall/Spring/Summer)

ELCT 244 Electronic Circuits I (3)
ELCT 244L Electronic Circuits I Laboratory (1)
Analysis of solid state diodes and bipolar transistor amplifier circuits. Ten hours lecture, six hours laboratory per week; seven and one-half week module. Prerequisite: ELCT 118 or consent of instructor. (Spring)

ELCT 246 Applied Digital Circuits (2)
ELCT 246L Applied Digital Circuits Laboratory (2)
Logic gates, boolean algebra, flip-flops, registers, memory, karnaugh mapping, machine programming, and construction of a microcomputer using TTL devices. Prerequisites: ELCT 244, 244L. (Fall/Spring/Summer)

ELCT 252 Data Communications (3)
ELCT 252L Data Communications Laboratory (3)
Overview of current digital data networks, communications protocols and phone circuits, as well as communications channels for both analog and digital transmissions. Prerequisites: ELCT 117, 118, and 246 or equivalent knowledge. (Fall)

ELCT 254 Industrial Circuits (3)
ELCT 254L Industrial Circuits Laboratory (2)
Solid state circuits in industrial control circuits. Three hours lecture, two hours laboratory per week. Prerequisite: ELCT 270 or consent of instructor. (Spring)

ELCT 256 Electronic Communication (3)
ELCT 256L Electronic Communication Laboratory (1)
Introduction to the field of communications. Covers am, fm, stereo, television, antennas, digital communication, radar, lasers, and fiber optics. Prerequisite: ELCT 264 or consent of instructor. (Fall)

ELCT 262 Personal Computers II (2)
ELCT 262L Personal Computers II Laboratory (2)
Theory, troubleshooting, and repairing computer peripherals to include floppy disk drives, dot-matrix and letter quality printers, and RGB and Monochrome monitors to the component level. Prerequisites: ELCT 232, 232L. (Fall/Spring/Summer)

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. Six hours lecture, four hours laboratory per week; seven and one-half week module. Prerequisite: ELCT 265 or consent of instructor. (Spring)

ELCT 270 Linear Integrated Circuit Applications (3)
ELCT 270L Linear Integrated Circuit Applications Laboratory (1)
Differential and operational amplifier circuitry, feedback configurations, opamps errors, compensations, and applications. Ten hours lecture, six hours laboratory per week; seven and one-half week module. Prerequisite: ELCT 264 or consent of instructor. (Spring)

ELCT 272 Personal Computers III (3)
ELCT 272L Personal Computers III Laboratory (2)
Detailed theory of personal computers such as the Apple II, IBM PC, Commodore 64 and Zenith Z-100; troubleshooting and repair of these systems. The 6500, 6800, and the 8080 family of microprocessors and their instruction sets are also covered. Prerequisites: ELCT 232, 232L. (Fall/Spring/Summer)

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. Prerequisite: student must be in the 4th semester of the Electronics Technology Program. (Fall/Spring/Summer)

ELCT 295 Independent Study (1,2)

ELCT 296 Topics (1,2)

ENGINEERING

School of Natural Sciences and Mathematics

ENGR 105 Basic Engineering Drawing (3)
ENGR 105L Basic Engineering Drawing Laboratory (1)
Fundamentals of drawing including instrumental and computer aided drafting. Three lectures and two one-hour labs per week. Corequisite: CSCI 120. (Fall/Spring)

ENGR 106 Beginning Computer Aided Drafting (2)
ENGR 106L Beginning Computer Aided Drafting Laboratory (2)
Basic principles of computer aided drafting through the development of practical drawing problems using a computer. Two one-hour lectures and two two-hour laboratories per week. Prerequisites: ENGR 105, 105L or consent of instructor. (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: ENGT 102 or MATH 130 and ENGR 105 or equivalents. (Fall/Spring)

ENGR 149 Introduction to Spaceflight (3)
Introduction into the science of spaceflight, primarily from a descriptive point of view with emphasis placed on obtaining understanding and appreciation of problems, rewards and excitement associated with space studies and spaceflight. Sample topics: history of spaceflight, mechanics of propulsion and of satellites, living in space, the space shuttle. Some algebra will be used. Prerequisite: MATH 113 or consent of instructor. (Spring)

ENGR 230 Topographical Surveying (2)
ENGR 230L Topographical Surveying Laboratory (1)
Fundamentals of mapmaking including the use of plane table and alidade, basic control, contour mapping, and map reading. Primarily for non-engineering students in related fields (forestry, geology, archaeology). Two lectures and one three-hour laboratory per week. Prerequisite: MATH 130 or consent of instructor. (Fall)

ENGR 231 Surveying I (2)
ENGR 231L Surveying I Laboratory (1)
Principles of surveying and mapping; familiarization with the basic instruments and their use. Includes calculations and field procedures for surveying circular, spiral, and parabolic curves and route planning. Two lectures and one three-hour laboratory per week. Prerequisite: MATH 130 or consent of instructor. (Fall)

ENGR 232 Surveying II (2)
ENGR 232L Surveying II Laboratory (1)
Location and design, measurement and computation of earthwork quantities, and slope staking. Includes celestial observations to determine latitude, true azimuth, photogrammetry, triangulation, state plane coordinate systems, and computer applications. Two lectures and one three-hour laboratory per week. Prerequisite: ENGR 231. (Spring)

ENGR 240 Statics (3)
Principles of statics, study of vectors, forces, couples, force systems and their resultants, force systems of equilibrium (truss analysis, flexible cables, cranes), static friction (pivot and belt), centroids, radii of gyration of areas and masses, and moments of inertia. Prerequisites: MATH 152 and PHYS 121. Corequisites: MATH 253 and PHYS 122. (Fall)

ENGR 241 Dynamics (3)
Angular and linear displacement, velocity and acceleration of particles, rigid bodies in motion, simple vibrations, applications of Newton's laws of motion and the laws of conservation of energy and momentum to solution of problems involving moving particles and rigid bodies subject to external forces. Prerequisites: ENGR 240 and MATH 253. (Spring)

ENGR 251, 252 Circuit Analysis I, II (3,3)
ENGR 251L, 252L Circuit Analysis I, II Laboratory (1,1)
Fundamental principles of electrical engineering, such as electronics, electromechanics, and instrumentation. Basic analysis techniques applied to linear, lumped parameter, and time invariant circuits. Three lectures and two one-hour laboratories per week. Prerequisite: MATH 152 and PHYS 121 with concurrent enrollment in MATH 253 and PHYS 122. (Fall/Spring)

ENGR 253 Electromechanical Devices (3)
Operating principles and analysis of electromechanical devices including transformers, motors, and generators. Prerequisite: ENGR 251. (Spring)

ENGR 255 Thermodynamics (3)
First and second laws of thermodynamics, properties of pure substances, energy in open systems, control volume, steady flow, engineering applications. Prerequisites: PHYS 122 and MATH 152, or consent of instructor. (Spring)

ENVIRONMENTAL RESTORATION ENGINEERING TECHNOLOGY

School of Natural Sciences and Mathematics

ENGS 110 Environmental Restoration Survey (3)
Overview of the history, philosophy, and processes germaine to environmental restoration. Topics include environmental laws, site assessment, risk analysis, site remediation techniques, mineland reclamation, and other issues pertinent to hazardous waste management. (Fall)

ENGS 111 Environmental Health and Safety (3)
Survey of environmental health and safety issues, risk assessment, control strategies, and implementation. (Spring)

ENGS 211 Hazardous Waste Management (3)
Sources and characteristics of hazardous and radioactive materials; mechanisms and pathways of pollutant transport and degradation; pollutant impact on ecosystems and human health. Corequisite: ENGS 111. Prerequisites: ENGS 110. (Fall)

ENGS 213 Site Characterization (3)
ENGS 213L Site Characterization Laboratory (1)
Development of knowledge and understanding of the site characterization process, intrusive and non-intrusive techniques, sampling procedures, strategies, and interpretation. Six to eight laboratory hours per week depending upon whether taken for vocational or baccalaureate degree. Prerequisites: ENGS 110, 111. (Fall)

ENGS 214 Quality Assurance (3)
Knowledge and understanding of the documentation requirements for reports, characterization data, commitment response and engineering design as well as knowledge and understanding of the quality assurance concept and its place in Environmental Restoration. Prerequisite: ENGS 110. (Fall)

ENGS 215 Environmental Analytical Chemistry (3)
ENGS 215L Environmental Analytical Chemistry Laboratory (1)
Provides knowledge and understanding of types of instrumentation used in environmental restoration, instrumentation calibration, maintenance, operation, procedures, and techniques. Students obtain knowledge and understanding of analytical and research laboratories in environmental restoration, procedures, and techniques. Includes field trips and hands-on experience. Three one-hour lectures and one two-hour laboratory per week. Prerequisites: ENGS 110, 111. (Spring)

ENGS 216 Site Remediation (4)
Comprehensive, hands-on course to provide knowledge and certification in occupational health and safety for CERCLA hazardous waste site remediation activities. Prerequisite: ENGS 110, 213. (Spring)

ENGS 217 Environmental Law and Regulations (2)
Comprehensive course in environmental law and regulations, regulatory agencies, and how they affect environmental restoration and the individual. Prerequisite: ENGS 110. (Spring)

ENGS 218 Capstone in Environmental Restoration (2)
Provides student with a review of the environmental restoration business and direction in seeking employment or continuing education. Prerequisites: ENGS 213, 214.

ENGINEERING TECHNOLOGY

School of Natural Sciences and Mathematics

ENGT 101 Technical Mathematics I **(4)**
Algebra review including fundamental concepts and operations, functions, graphs, systems of linear equations, determinants, factoring, fractions, quadratic equations, exponents, and radicals. Concentrated study of trigonometry and additional topics of algebra with emphasis on applications in technical fields plus logarithms, trigonometric functions of angles, radian measure, vectors, and oblique triangles. Prerequisite: MATH 020 or high school algebra. (Fall)

ENGT 102 Technical Mathematics II **(4)**
Graphs of trigonometric functions, complex numbers and the j-operator, inequalities and variation, advanced topics in algebra and trigonometry and introduction to analytic geometry. Matrix algebra, graphical solutions of non-algebraic equations of higher degree, progressions and the binomial theorem, trigonometric identities, inverse functions, straight lines, conic sections, parametric forms, statistics, and empirical curve fitting. Prerequisite: ENGT 101. (Spring)

ENGT 120 Engineering Economics **(3)**
Methods of determining, evaluating, and controlling economic factors in engineering projects and designs. Prerequisite: ENGT 102. (Fall)

ENGT 220 Specifications and Cost Estimate **(3)**
Preparation of specifications and contract documents, quantity estimating of excavation work, construction materials, and labor. Prerequisites: ENGR 105 and ENGT 102. (Spring)

ENGT 224 Materials I **(2)**
ENGT 224L Materials I Laboratory **(2)**
Materials, tests, and technician design procedures involving fluids and soils in civil engineering. Two one-hour lectures and two two-hour laboratories per week. Corequisite: ENGT 242. (Fall)

ENGT 225 Materials II **(2)**
ENGT 225L Materials II Laboratory **(2)**
Materials, tests, and technician design procedures for structures involving reinforced concrete, steel, and wood in civil engineering. Two one-hour lectures and two two-hour laboratories per week. Prerequisite: ENGT 224, 224L, and 242. (Spring)

ENGT 241 Statics and Strength of Materials I **(3)**
Basic principles of statics involving the application of equilibrium equations to coplanar, noncoplanar, concurrent and nonconcurrent force systems. Covers stress and strain of members in tension, compression, shear, and torsion, and the properties of riveted and welded joints. Prerequisite: ENGT 102. (Spring)

ENGT 242 Strength of Materials II **(3)**
Centroids, moments of inertia, beam and column deflection and design, and design of rotating shafts and couplings. Prerequisite: ENGT 241. (Fall)

ENGT 252 Civil Drafting I **(2)**
ENGT 252L Civil Drafting I Laboratory **(1)**
Principles of drafting applied to civil structural problems. Two lectures and one two-hour laboratory per week. Corequisite: ENGT 242. (Fall)

ENGT 253 Civil Drafting II **(2)**
ENGT 253L Civil Drafting II Laboratory **(1)**
History, fundamentals, and methods of mapmaking. Two lectures and two one-hour laboratories per week. Prerequisite: ENGR 105, 230, 231, or consent of instructor. (Spring)

ENGT 295 Independent Study **(1,2)**

ENGLISH

School of Humanities and Fine Arts

SKILLS AND COMMUNICATION

ENGW 086, 087 Vocational Communications I, II **(3,3)**
For students enrolled in Industry and Technology programs; emphasizes business communications, and meets requirements for the AAS degree. (Fall/Spring)

ENGW 090 English Grammar (3)
Review of English grammar and usage. (Fall/Spring)

ENGW 091, 092, 093 English Skills (Modular Concept)
For students who have specific deficiencies in one or more of the following: (On demand)
ENGW 091 Basic Grammar (Module 1).....(1)
ENGW 092 The Sentence (Module 2).....(1)
ENGW 093 Punctuation (Module 3).....(1)

§ENGW 111 English Composition (3)
Effective ways to communicate ideas through writing clear, concise, and well-planned papers. Prerequisite: ENGW 090 for students with ACT scores of 14 or below or an Enhanced ACT score of 16 or below in English. (Fall/Spring)

§ENGW 112 English Composition (3)
Theory and strategy of research, critical writing, and literature. Prerequisite: ENGW 111. (Fall/Spring)

§ENGW 115 Technical Writing (3)
Experience with writing which students may encounter in technical professions, requiring the traditional research paper, a technical report, graph with text, questionnaire, description or definition, application letter and resume, and technical speech. Prerequisite: ENGW 111. (Fall/Spring)

ENGW 121 English Spelling/Vocabulary (3)
Spelling improvement based on 600 most commonly misspelled words. Basic rules, pronunciation, and vocabulary with particular attention given to Greek and Latin roots, prefixes, and suffixes. (Spring)

§ENGW 129 Honors English (3)
Designed to fulfill the composition requirements (English 111 and 112) for students whose score is 24 or higher on the ACT English test or 28 or higher on the Enhanced ACT English test and whose writing skills are good. (This does not apply for students seeking an Associate of Arts or an Associate of Science degree.) Readings in literature serve as the basis for writing persuasive essays, research papers, and critical analysis. (Fall)

WRITING

ENGW 251 Creative Writing: Formulas in Fiction (3)
Techniques of creating major and minor Character, Routine Action, Flashback, and Retrospect paradigms in addition to studying plot plan, setting, viewpoint, and dialogue. (Fall)

ENGW 252 Creative Writing: Style in Fiction (3)
Techniques of creating the Scene Method of Narrative, Direct Character Introduction, Panorama, Detailed Description, and Sensory Detail paradigms; the study of stylistic control through psycholinguistics and review of plot plan, setting, viewpoint, and dialogue. (Spring)

ENGW 394 Seminar/Advanced Writing (3)
Professional writing of fiction, non-fiction, and analysis through the roles of writer-as-artist, scholar, freelance, editor, book reviewer, and critic.

LITERATURE

§ENLI 131 World Literature I (3)
Major works of Western literature from Classical, Medieval, and Renaissance periods including Homer and Dante. (Fall)

§ENLI 132 World Literature II (3)
Major works of Western literature from post-Renaissance through modern periods including Goethe and Cervantes. (Spring)

§ENLI 134 Mythology (Classical) (3)
Basic myths of the Greeks and Romans, the cultures that produced them, and modern concepts of the Classical tradition. (Fall)

§ENLI 135 Mythology (Medieval) (3)
Ancient, Oriental, Northern, and Medieval myths, the cultures that produced them, and concepts of them in today's society. (Spring)

§ENLI 141 Introduction to Literature-Fiction (3)
Structural approach to short stories and novels by American, English, and European authors of the 19th and 20th centuries. (Fall/Spring)

§ENLI 142 Introduction to Literature-Poetry (3)
Techniques of literature used by the poets from ancient to modern times, including denotation and connotation, imagery, figurative language, tone, pattern, and meter. Analysis of the criteria necessary for distinguishing good poetry from bad. (Fall/Spring)

§ENLI 145 Introduction to Oriental Literature (3)
Prose, poetry, and plays of early India, China, and Japan. (Spring)

ENLI 240 Children's Literature (3)
History of children's literature studied through authors and illustrators of picture books, stories, and poetry for pre-school and early primary. Field project. (Fall)

§ENLI 254 English Literature I (3)
English literature from its beginnings, including major works and writers, through the early 18th century. (Fall)

§ENLI 255 English Literature II (3)
English literature, including major writers and works from mid-18th century to present day. (Spring)

§ENLI 261 United States Literature I (3)
Beginning with the Puritans and writers of the Revolution as a background to the works of the Romantics and Transcendentalists such as Bryant, Irving, Cooper, Poe, Melville, Emerson, Thoreau, Longfellow, and Whitman. (Fall)

§ENLI 262 United States Literature II (3)
Principal modern authors such as Dickinson, Clemens, Crane, Frost, Sandburg, Anderson, Lewis, Eliot, Faulkner, Hemingway, and Stevens. (Spring)

ENLI 316 American Novel (3)
Distinctive American novels from beginning to present. (Spring)

ENLI 324 Short Story (3)
History and examples of short stories which reveal the development of plot, setting, character, symbol, point of view, theme, humor, satire, and fantasy. (Fall)

ENLI 335 The Bible as Literature (3)
The Old Testament as a literary masterpiece. (Fall)

ENLI 340 Classical Greek Literature (3)
Readings in English of outstanding Greek authors, exploring major classical genres and emphasizing the development of epic, comedy, tragedy, and lyric poetry against the background of Greek history, philosophy, and religion. (Alternate Fall)

ENLI 341 Classical Latin Literature (3)
Works by Virgil, Ovid, Lucretius, Petronius, Terence and Plautus, Horace and Catullus in English translation, considered in the light of the humane and religious tradition of Europe. (Alternate Spring)

ENLI 350 Chaucer (3)
Major works of the 14th century poet. (Spring)

ENLI 355 Shakespeare I (3)
Early and mature plays, including genres of comedy, history, tragedy, and romance, emphasizing close textual reading in conjunction with cultural and intellectual contexts. Early (Tudor) plays.

ENLI 360 Milton (3)
The thought and poetry of John Milton. (Fall)

ENLI 365 Adolescent Literature (3)
Past and present adolescent literature including analysis of fiction, non-fiction, drama, and poetry, with a focus on contemporary themes, issues, and trends. (Spring)

ENLI 369 17th Century English Literature (3)
Poetry and prose of the 17th century, including the works of Donne, Herbert, Vaughan, and Crashaw and the works of the Cavalier poets (Herrick, Carew, Suckling, and Lovelace). (Alternate Fall)

ENLI 370 18th Century English Literature (3)
Conceptual framework of the Enlightenment in England's representative essayists, poets, novelists, and playwrights; Goldsmith, Wycherley, Dryden, Congreve, Steele, Sheridan, Gay, Pope, Swift, Defoe, and Johnson. (Alternate Spring)

ENLI 380 19th Century British Literature I (3)
ENLI 381 19th Century British Literature II (3)
Nineteenth century British literature based upon representative works of major poets, novelists, and prose writers: ENLI 380 — Romantic Period writers and Early Victorians to 1850; ENLI 381 — Late Victorian writers through the 1890s. Prerequisite: six hours of literature. (Fall/Spring)

ENLI 382 The Romantics (3)
Humanity's deepest personal feelings as expressed by writers attempting to discover a higher reality than that offered by materialism or rationalism. American and British authors represented are Irving, Cooper, Bryant, Poe, Longfellow, Whittier, Blake, Coleridge, Wordsworth, Byron, Shelley, and Keats. (On demand)

ENLI 395 Independent Study (1-3)

ENLI 396 Topics (1-3)

ENLI 410 The British Novel (3)
Themes and styles of representative novelists of British literature, including the works of Defoe, Fielding, Conrad, Dickens, Lawrence, Bronte, Austen, and Huxley. (Spring)

ENLI 415 American Folklore (3)
American folklore with an emphasis on collecting Colorado and especially Western Colorado lore. (On demand)

ENLI 416 Contemporary American Poetry (3)
American poets since 1940. (On demand)

ENLI 421 History of Literary Criticism (3)
Development of literary criticism from the Classical period through the 19th Century, emphasizing the relationship between criticism and tradition in developing the art and substance of Western literature. (Fall)

ENLI 422 Forces in Contemporary Criticism (3)
Twentieth century critics, critical schools, and theories. (On demand)

ENLI 424 Literature and Science (3)
Literature's relationship with science affecting the fine arts, social thought, and human value. (On Demand)

ENLI 445 American Poetry from 1870 to 1940 (3)
Traditionalist and experimental schools in American Poetry from 1870 to 1940. Poets studied include Whitman, Robinson, Sandburg, Masters, Stevens, Frost, Williams, Cummings, Crane, Moore, Jeffers, Eliot, and MacLeish. (On Demand)

ENLI 494 Seminar in Literature (3)
Requiring an evaluation of an important literary work or works and requiring students to interpret, analyze, criticize, and present research. Prerequisites: senior standing, consent of instructor. (On demand)

ENLI 495 Independent Study (1-3)

ENLI 496 Topics (1-3)

SPECIAL STUDIES

ENSS 395 Independent Study (1-3)

ENSS 396 Topics (1-3)

ENSS 440 History of the English Language (3)
Historical development of the English language; its internal formation as shaped by external political, social, and intellectual forces. Indo-European roots and the Germanic, Norman, French, and Latin influences are considered. (Alternate Spring)

ENSS 451 Structure of the English Language (3)
Principles and facts of English phonetics, morphology, and syntax. Syntactic topics include word classes, phrase structure, grammatical relations, verbals, clauses, and types of sentences. Prerequisites: Junior or senior standing or consent of the instructor. (Spring)

ENSS 455 Methods of Teaching English (3)
Theory and practice of teaching English in the junior and senior high schools; current techniques, materials, and media for the teaching of composition, literature, and the English language. Prerequisite: senior standing in the teacher certification program. (Fall)

ENSS 495 Independent Study (1-3)

ENSS 496 Topics (1-3)

FINANCE

School of Business

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 (4)
Acquisition, allocation, and management of funds within the business enterprise. Financial goals, funds flow, valuation, capital budgeting, and financing strategies. Prerequisites: ACCT 202, MATH 121, STAT 214. (Fall)

FINA 395 Independent Study (1-3)

FINA 396 Topics (1-3)

FINA 439 Problems in Managerial Finance (3)
Case studies and readings in financial management involving concepts, practices and techniques introduced and developed in FINA 339. Prerequisite: FINA 339. (Spring)

FINA 441 Theory of Financial Management (3)
Financial theory pertaining to capital structure, dividend policy, valuation, cost of capital, and capital budgeting. Prerequisite: FINA 339. (Spring)

FINA 495 Independent Study (1-3)

FINA 496 Topics (1-3)

FINE ARTS

School of Humanities and Fine Arts

§FINE 101 Man Creates (3)
An interdisciplinary survey of human creative efforts as they relate to each other. Art, drama, and music are compared, with similarities stressed. (Fall/Spring)

FINE 395 Independent Study (1-3)

FINE 396 Topics (1-3)

FINE 494 Seminar in Critical Analysis of the Arts (3)
Theory and practice of arts criticism. (Fall)

FINE 495 Independent Study (1-3)

FINE 496 Topics (1-3)

FINE 499 Internship (8,15)
Part or full-time work in various aspects of arts management. Sites may include galleries, musical, theatrical or other performing organizations, arts centers, or other situations that meet the instructor's approval. Half-time equals eight semester hours credit; full-time equals 15 semester hours credit. Prerequisite: junior standing in visual or performing arts. May also require selected courses in business, social science, etc. as appropriate to the internship sought. (Summer/Fall/Spring)

FOREIGN LANGUAGES

School of Humanities and Fine Arts

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 I (3)

§FLAF 252 Second-Year French II (3)
Grammar review, vocabulary distinction, and readings in the French language. Prerequisites: two years of high school French, FLAF 111 and 112, or consent of instructor. (On demand)

GERMAN

§FLAG 111 First-Year German I (3)

§FLAG 112 First-Year German II (3)
Introduction to the German language. (Fall/Spring)

§FLAG 251 Second-Year German I (3)

§FLAG 252 Second-Year German II (3)
Grammar review, vocabulary distinction, and readings in the German language. Prerequisites: two years of high school German, FLAG 111 and 112, or consent of instructor. (On demand)

§FLAG 290 Special Studies: German (1,2)
Study beyond the scope of the existing curriculum.

SPANISH

§FLAS 111 First-Year Spanish I (3)

§FLAS 112 First-Year Spanish II (3)
Basic competency in understanding, speaking, reading, and writing. (Fall/Spring)

FLAS 114 Conversational Spanish I (3)

FLAS 115 Conversational Spanish II (3)
A beginning level class for adult students who wish to develop a basic vocabulary for speaking and understanding Spanish socially, on the job or south of the border. (Fall/Spring)

§FLAS 117 Career Spanish I (3)

§FLAS 118 Career Spanish II (3)
For students with or without prior knowledge of Spanish who wish to speak and understand the vocabulary and phrases most frequently encountered in the fields of air transportation, agriculture, automotive services, business, child care, education, engineering, geology, hotel, motel, restaurant and resort management, law enforcement, pre-dentistry, nursing, pre-medicine, ranching, retail sales, social work, and travel, recreation, and hospitality management. (Fall/Spring)

§FLAS 251 Second-Year Spanish I (3)

§FLAS 252 Second-Year Spanish II (3)
Reinforces and expands the four basic language skills developed in the first-year course and provides exposure to a wider variety of cultural materials and situations. Prerequisites: two years of high school Spanish, FLAS 111 and 112, or consent of instructor. (Fall/Spring)

OTHER LANGUAGES

FLAV 290, 390 Special Studies In Foreign Languages (1,2,3)
These courses are currently offered through Outreach: Ancient Greek, Latin, Advanced French, German, Spanish and other Classical and Modern Languages as permitted by interest and instructor availability.

FLAV 395 Independent Study (1-3)

FLAV 396 Topics (1-3)

FLAV 495 Independent Study (1-3)

FLAV 496 Topics (1-3)

GEOGRAPHY

School of Social and Behavioral 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. (Spring)

§GEOL 103 Weather and Climate (3)
Non-mathematical introduction to elements of local and global weather: the atmosphere, cloud formation, precipitation, seasons, optical phenomena and violent storms. Students practice making 24-hour weather forecasts. (Fall)

§GEOL 105 Geology of Colorado (3)
Introduction to minerals, rocks, geologic time scale and basic geologic terms, followed by geology of Colorado taught with the aid of movies and slides. A one-day field trip is required. (Fall/Spring)

§GEOL 111 Principles of Physical Geology (4)
§GEOL 111L Principles of Physical Geology Laboratory (1)
Materials that make up the earth and surface and interior processes that interact to produce the present features of the earth. Laboratory: minerals, rocks, topographic maps, earthquakes, and landforms. Four lectures and one two-hour laboratory per week. (Fall)

§GEOL 112 Principles of Historical Geology (4)
§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 or consent of instructor. (Spring)

§GEOL 201 Stratigraphy (2)
§GEOL 201L Stratigraphy 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. Two lectures and one two-hour laboratory per week. (Fall)

§GEOL 203 Introduction to Environmental Geology (3)
Relationship of man to the geological environment through consideration of population, pollution, waste disposal, resource depletion, land use, governmental policy and natural hazards. One field trip required. (Spring)

GEOL 301 Earth Tectonics (3)
GEOL 301L Earth Tectonic Laboratory (1)
Descriptive geometry, occurrences of rock structures, principles of rock deformation, and origin of stresses. Laboratory: stereographic and graphical solution of structural problems, the study of maps and cross sections, and some field problems. Three lectures and one two-hour laboratory per week. Prerequisites: GEOL 111 and Math 130. (Fall)

GEOL 310 Geologic Mapping and Illustration (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. (Fall)

GEOL 325 Introduction to Engineering Geology (3)
Geologic principles applied to construction problems; case histories of major projects. Field trips and term project required. Prerequisite: GEOL 111 or consent of instructor. (On demand)

GEOL 331 Mineral Studies (3)
GEOL 331L Mineral Studies Laboratory (1)
Morphology and classification of crystals; chemistry and genesis of minerals. Laboratory: identification of minerals and crystals by spectroscope, X-ray diffraction, and hand specimens. Three lectures and one two-hour laboratory per week. Prerequisite: CHEM 131 or consent of instructor. (Fall)

GEOL 333 Geology of the Grand Canyon (1)
Three two-hour evening lectures with films and slides used to preview the Grand Canyon and surrounding area. A strenuous backpacking trip is required to the bottom and out of the canyon. Prerequisites: GEOL 100, 105 or 112. (Spring break/on demand)

GEOL 340 Petrology (3)
GEOL 340L Petrology Laboratory (1)
Origin, composition, and classification of igneous, sedimentary, and metamorphic rocks. Laboratory: identification of rocks in hand specimens and some thin sections, and some analytical techniques. Three lectures and one two-hour laboratory per week. Prerequisite: GEOL 331. (Spring)

GEOL 351 Applied Geochemistry (2)
Geochemistry and its relationship to weathering and soils, geochemical surveys and prospecting techniques. Prerequisites: GEOL 112, CHEM 131, 132 or consent of instructor. (On demand)

GEOL 360 Mineral and Energy Resources (5)
Metallic "hard rock" mineral deposits, including ore genesis, alteration, metal associations, and mining methods; "soft rock" deposits including coal, uranium and petroleum; oil generation and entrapment; and economics of the minerals industry. Each student reports on two deposits. (Spring)

GEOL 380 Field Studies (6)
Techniques used by the field geologist including section measuring, use of aerial photographs, plane table and alidade, and collection of samples. Data used to prepare geologic maps and reports. Students will camp out approximately three weeks during this course. Five eight-hour days per week. Prerequisites: GEOL 111, 112, 201, 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: a background in geology and basic statistics or concurrent study. (Fall)

GEOL 395 Independent Study (1-3)

GEOL 396 Topics (1-3)

GEOL 402 Applications of Geomorphology (4)
GEOL 402L Applications of Geomorphology Laboratory (1)
Knowledge of landform genesis and shaping processes is applied to solve modern problems with emphasis on local soils, slopes, rivers, erosional surfaces, and structural framework. Laboratory and field studies used to explore frost, running water, slope movement, ground water, wind, and glaciers which have affected the local environment. Practical techniques of measurement and interpretation, including statistical and computer techniques, used to produce models of landscape development. A term project must be completed. Two major field trips are required. Four lectures and one two-hour laboratory per week. Prerequisite: consent of instructor. (Fall)

GEOL 404 Geophysical Prospecting (4)
GEOL 404L Geophysical Prospecting Laboratory (1)
Exploration for mineral and petroleum deposits and preliminary environmental investigation of sites for engineering projects with emphasis on refraction and reflection seismic, gravity, magnetic, electrical, and radioactive methods. Laboratory: interpretation of data and field trips. Four lectures and one two-hour laboratory per week. Prerequisites: GEOL 111, 112, PHYS 112 (calculus is recommended but not required) or consent of instructor. (Fall)

GEOL 405 Solid Earth Geophysics (3)
Classical physics applied to the study of the earth with emphasis on the origin of the earth, its gravitational, geomagnetic, and geothermal characteristics, seismicity, the dynamics of the earth's crust, plate tectonics, and continental drift. One field trip required. Prerequisite: GEOL 404 or consent of instructor. (On demand)

GEOL 411 Paleontology (2)
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. Prerequisites: GEOL 201 and a beginning Biology course or consent of instructor. (Spring)

GEOL 415 Introduction to Ground Water (3)
Relationships of ground water to other water sources, hydrologic cycle, water balance, hydrologic characteristics of rocks, hydraulics and equations defining flow, ground water quality, techniques of exploration, and water law. Prerequisites: CHEM 131, 132, MATH 130, and GEOL 331. (On demand)

GEOL 476 Optical Mineralogy and Petrography (2)
GEOL 476L Optical Mineralogy and Petrography Laboratory (2)
Theories and principles of optical mineralogy and the microscope descriptions of rocks are applied to their classifications. Laboratory: study of thin sections. Two lectures and two two-hour laboratories per week. Prerequisites: GEOL 331, 340, PHYS 112. (On demand)

GEOL 495 Independent Study (1-3)

GEOL 496 Topics (1-3)

GRAPHIC COMMUNICATIONS

School of Technology

GRCO 110 Survey of Commercial Art and Printing Processes (1)
Overview of job requirements, job availability, production processes, working environment and relationships, work ethics, and general safety as utilized by the commercial art and printing industries. (Fall)

GRCO 115 Introduction to Computer Graphics (1)
GRCO 115L Introduction to Computer Graphics Laboratory (1)
Basic use and operation of graphics computer, primarily MacIntosh PC, with focus on terminology, hardware, peripheral devices, systems management, software (systems and application) including establishment of operation files, job and information files, maintenance, safety, and keyboarding. One hour lecture, two hours laboratory per week. (Fall)

GRCO 120 Typography/Type Design (2)
Study of typography including terminology, type style identification and design, use of type within a design consisting of only type or as one of the elements of the design and type specifications; copyfitting; and basic principles of pattern and spatial design concepts. (Fall)

GRCO 121 Basic Layout and Design (2)
Basic principles of design and layout techniques, including thumbnail, rough, and comprehensive layouts; work planning; client presentation; and preparation of artwork in black and white and color with focus on use of markers and colored pencils. Two hours lecture per week. Prerequisite: GRCO 120 or consent of instructor. (Spring)

GRCO 130 Basic Photography (1)
Principles and techniques of photography, including the functions of camera parts and accessories. Two hours lecture per week; seven and one-half weeks. (Fall/Spring)

GRCO 131 Photo Finishing (1)
Techniques of brush and airbrush photo retouching, image intensification, reduction on negatives and photo prints, mounting, and matting. One and one-half hours per week; seven and one-half weeks. Prerequisite: GRCO 130. (Spring)

GRCO 132 Basic Darkroom Techniques (1)
Techniques and skills for darkroom procedures for black and white film processing and print making including enlarging. Two hours per week; seven and one-half weeks. (Fall/Spring)

GRCO 142 Mechanical Image Production (1)
GRCO 142L Mechanical Image Production Laboratory (2)
Basic hand prepared paste-up methods of camera-ready copy preparation for reproduction. Modular course — two hours lecture, six hours laboratory per week. (Fall)

GRCO 143 Computer Composition (1)
GRCO 143L Computer Composition Laboratory (2)
Typesetting functions with emphasis on operation of computer based systems, mainly MacIntosh PC, and production of camera-ready type. Modular course — one hour lecture, six hours laboratory per week. (Spring)

GRCO 151 Offset Press I (1)
GRCO 151L Offset Press I Laboratory (2)
Offset press operation, maintenance of presses, and principles of offset including inks, fountain solutions, and plates. One hour lecture, three hours laboratory per week. (Fall)

GRCO 220 Design and Illustration I (3)
Advanced study and production of designs and layouts with emphasis on corporate art and advertising art including computer generated images; selection of design elements with focus on color choice, image choice, and copy choice; and illustration techniques for layouts, presentations, and camera-ready images. Two and one-half hours lecture per week. Prerequisites: ARTE 151, GRCO 121. (Fall)

GRCO 221 Design and Illustration II (3)
Continuation of GRCO 220. Production of layouts and camera-ready artwork using various techniques and media. Emphasis on projects equal to the standards of the commercial art industry, and on the different aspects and areas involved in commercial design. Three hours lecture per week. Prerequisite: GRCO 220. (Spring)

GRCO 230 Process Photography I (1)
GRCO 230L Process Photography I Laboratory (3)
Basic techniques of process camera work and darkroom procedures, including calibration, line work, photo mechanical transfer, flat preparation, and platemaking. Four hours of laboratory per week. (Fall)

GRCO 231 Process Photography II (1)
GRCO 231L Process Photography II Laboratory (3)
Advanced techniques of process camera and darkroom techniques including halftone, duotone, special effects, advanced flat preparation, and an introduction to 4-color separation and mask-up. One hour lecture and four hours of laboratory per week. Prerequisite: GRCO 230. (Spring)

GRCO 242 Desktop Imaging (1)
GRCO 242L Desktop Imaging Laboratory (3)
Techniques and principles of page layout preparation utilizing computer based systems, mainly MacIntosh PC, scanner and image assembly software such as Page Maker and Quark X Press. One hour lecture and four hours of laboratory per week. Prerequisites: GRCO 143, 143L. (Fall)

GRCO 243 Computer Illustration (1)
GRCO 243L Computer Illustration Laboratory (2)
Focus on developing knowledge and skills to produce computer generated artwork, both black/white and color, including color separation camera-ready art using software application programs currently in use in the commercial art industry. One hour lecture, three and one-half hours laboratory per week. Prerequisite: GRCO 115, 115L or consent of instructor. (Spring)

GRCO 251 Offset Press II (1)
GRCO 251L Offset Press II Laboratory (3)
Advanced offset press operation, multiple-color printing, basics of paper-press relationships, and a web offset press operation. Four hours of laboratory per week. Prerequisite: GRCO 150. (Fall)

GRCO 260 Printing Cost Estimating (2)
Costs and cost-estimating techniques specifically related to the printing industry. Two hours lecture per week. Prerequisite: sophomore Printing Technology majors or consent of instructor. (Spring)

GRCO 270 Portfolio Construction (1)
Design, development, and assembly of a portfolio to be used as employment material. Two and one-half hours lecture per week. Prerequisite: sophomore Commercial Art students only. (Spring)

GRCO 281L (4)
Simulation of a print shop in which the students gain additional experience and skill in a working environment; *OR* upon application, full time placement in a printing company/inplant department. Students are expected to complete 200 hours. Application for placement must be submitted prior to admittance to this class. Eight hours per week. Corequisites: GRCO 231, 231L. Prerequisites: GRCO 230, 230L, 242, 242L, 250, 250L. (Spring)

GRCO 295 Independent Study (1,2)

GRCO 296 Topics (1,2)

GRCO 299 Internship (4)
Full-time placement in an agency or corporate department to provide an enhanced transition from the classroom to the work setting through first-hand experience. The student is expected to complete 200 clock hours. Application must be made during the prior spring semester. Credit not available through challenge testing. (Summer)

HISTORY

School of Social and Behavioral Sciences

§HIST 101, 102 Western Civilizations (3,3)
Political, social, economic, and cultural history of Western mankind from ancient times to modern times. (Fall/Spring)

§HIST 131, 132 United States History (3,3)
History of the United States from Colonial period to modern times. (Fall/Spring)

§HIST 136 Introduction to the Afro-American Experience (3)
Afro-American experience from beginnings in Africa to the present. (Fall)

§HIST 137 Introduction to the Chicano Experience (2)
Spanish and Indian backgrounds and the social, cultural, economic, and political roles of Chicanos in the United States since 1848. (On demand)

HIST 301 History of England Since 1485 (3)
England, Great Britain and the Empire/Commonwealth from the first Tudor to the present. Prerequisites: HIST 101, 102. (On demand)

HIST 304 History of Colorado (3)
History of the state from pre-historic to modern times. (Fall/Spring)

HIST 306 History of South and Southeast Asia (3)
History of those areas of Asia within the influence of Indic Civilization, with emphasis on the roles of Hindu, Buddhist, and Muslim religions. Prerequisites: HIST 101, 102. (Alternate Fall)

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 320 History of the Southwest (3)
American Southwest from pre-Columbian times to 1912 with special attention to the interrelationships among Indian, Spanish, Mexican, and Anglo-American influences. Prerequisites: HIST 131,132, or consent of instructor. (Spring)

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. (Fall)

HIST 332 History of Modern Warfare (3)
War, its causes, consequences, and impact on history from the 18th century to the present. Prerequisites: HIST 101, 102. (Fall)

HIST 340 History of the Islamic World (3)
The origins, spread, and influence of the Islamic world, including the Middle East and North Africa with emphasis on its position in modern world affairs. Prerequisites: HIST 101,102. Prerequisites: HIST 101, 102. (Spring)

HIST 342 The Age of Jefferson and Jackson (3)
The social and intellectual developments in America from 1800-1850 with special emphasis on the influences of Presidents Thomas Jefferson and Andrew Jackson. Prerequisites: HIST 131, 132, or consent of instructor. (Fall)

HIST 344 The Age of Industry in America (3)
The social, intellectual, and political events in the United States from the end of the Civil War to the beginning of the Great Depression. Prerequisites: HIST 131,132, or consent of instructor. (Fall)

HIST 346 History of Modern America (3)
The social, intellectual, and political events in the United States from the Great Depression to the present. Prerequisites: HIST 131, 132, or consent of instructor. (Spring)

HIST 395 Independent Study (1-3)

HIST 396 Topics (1-3)

HIST 400 The Soviet Union and Eastern Europe (3)
Imperial Russia, the Soviet Union, and Eastern Europe from 1900 to the present. Prerequisite: HIST 101, 102 or consent of instructor. (Spring)

HIST 401 East Asia: The Formative Period (3)
China, Japan, Korea, and Vietnam before the coming of the West. Prerequisites: HIST 101, 102. (Fall)

HIST 403 East Asia and the Modern World (3)
China, Japan, Korea, and Vietnam since 1840. Prerequisite: consent of instructor. Prerequisites: HIST 101, 102. (Spring)

HIST 404 Introduction to Historical Research (3)
History-specific research with emphasis on utilization of primary documents and practice in conducting research and reporting results. Prerequisite: twelve hours college history courses or consent of instructor. (Fall)

HIST 405 Introduction to Public History (3)
Exploration of non-academic historical skills employed in museum work, archival management, and positions with historical societies and historic preservation agencies. Career opportunities will be examined. Prerequisites: HIST 131, 132, or consent of instructor. (Spring, alternate years)

HIST 410 Environmental History of the U.S. (3)
The evolution of public attitudes and governmental policies and practices relative to the wilderness, natural-resource development, and the natural environment from colonial times to the present. Prerequisites: HIST 131, 132, or consent of instructor. (Spring)

HIST 420 Civil War and Reconstruction (3)
The causes and outcomes of the American Civil War and Reconstruction periods. Prerequisites: HIST 131, 132, or consent of instructor. (Spring)

HIST 430 The Ancient Mediterranean World (3)
The Mediterranean world from pre-classical times to the fall of the Roman Empire. Prerequisites: HIST 101, 102, or consent of instructor. (Fall)

HIST 495 Independent Study (1-3)

HIST 496 Topics (1-3)

HOME ECONOMICS

School of Natural Sciences and Mathematics

HMEC 211 Nutrition (3)
Nutrients and their relation to physical and mental health. (Fall/Spring)

HUMAN SERVICES

School of Social and Behavioral Sciences

HSER 301 Introduction to Human Services (3)
Exploration of human services agencies, programs, funding, philosophies, history, and career opportunities. Prerequisites: PSYC 121, 122 and SOCO 260, 264, or consent of instructor. (Fall)

HSER 310 Sex Role Identification and Human Sexuality (3)
Interdisciplinary study of sex role differences (stereotypes), sexual biology, cross-cultural comparisons of attitudes toward sexuality, trends in sexual moralities, sexual deviance, and sexual dysfunctions and their treatment. Prerequisites: six hours of social science or consent of instructor. (Spring)

HSER 320 Drugs in Society (3)
Pharmacological, especially the social-psychological, effects of many drugs commonly self-administered today. Emphasis on consequences of abuse and strategies for limiting abuse. Prerequisites: PSYC 121, 122, or consent of instructor. (On demand)

HSER 395 Independent Study (1-3)

HSER 396 Topics (1-3)

HSER 499 Internship (4)
Regular weekly meetings on campus with a faculty supervisor in addition to an off-campus internship. Prerequisites: senior standing in the Bachelor of Arts program in Social and Behavioral Sciences and consent of instructor. Internship must be arranged for the semester prior to enrollment. (Fall/Spring/Summer)

HSER 495 Independent Study (1-3)

HSER 496 Topics (1-3)

HUMANITIES

School of Humanities and Fine Arts

HUMA 200 History and Development of Books (2)
History and development of the book from hieroglyphic texts to the present viewed in the context of changing technologies and various social, cultural, and economic influences. (Spring)

HUMA 201 Field Studies in Humanities (1)
Study/travel tours of varying lengths in the United States and foreign countries to acquaint students in some depth with particular aspects of world culture (language, the arts, literature, etc.) both contemporary and historical. (On demand)

HUMA 301 Field Studies in Humanities (3)
Prerequisite: junior or above standing. (On demand)

HUMA 395 Independent Study (1-3)

HUMA 396 Topics (1-3)

HUMA 495 Independent Study (1-3)

HUMA 496 Topics (1-3)

HUMA 499 Internship (8)
See faculty adviser for details. (On demand)

INDUSTRIAL SCIENCE

School of Technology

INSA 100 Machine Shop Studies (3)
Concentrated and condensed overview in the areas of calculator math, blueprint reading, geometric tolerancing, inspection, gauging, safety, and employee group skills. (On demand)

INSA 102 Machine Theory (3)
Concentrated unit dealing with speeds and feeds of machines, materials, tooling, tapping, boring, and manufacturing processes. (On demand)

INSA 110 Basic Electronics (3)
INSA 110L Basic Electronics Laboratory (1)
Principles of electricity/electronics. Applicable to entry level positions in areas requiring basic understanding of DC/AC, solid state, digital, and computer operation, repair and maintenance such as auto mechanics and machine trades. Good background in arithmetic important. Three lectures and one two-hour laboratory per week. May be taught as self-paced individual study if requested or if required by class size. (Fall)

INSA 220 Industrial Safety Practices (4)
Industrial safety regulations and practices including fire, electrical, mechanical, dust, vapor, and hazardous waste. Life support trauma management and hazard recognition practice as related to student occupational area. Modular course, twelve and one-half hours lecture per week for five weeks. (Fall)

INTERDISCIPLINARY STUDY

School of Social and Behavioral Sciences

INTR 400 San Juan Symposium
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: upperdivision standing and consent of instructors. Not open to freshmen and sophomores. (Summer/on demand)

LEGAL ASSISTANT

School of Business

LEGA 198 Introduction to Legal Assistant (3)
Techniques and procedures needed by Legal Assistants nationwide. Provides a perspective of the person in the profession, seeks to develop ethical, moral, and professional standards, and enthusiasm and loyalty between employer and employee. Prerequisite: admission to the Legal Assistant Program. (Fall)

LEGA 200 Real Property (3)
Ownership and interests in land, including security interests; methods of determining who has an interest in property, such as title examination; types of interests which may attach other than complete ownership; documents relating to property interests and their preparation; and pleading, practice, and procedure. Prerequisite: admission to the Legal Assistant Program.

LEGA 202 Business Organizations (2)
Basic types or forms of businesses and advantages and disadvantages of each, including the documents and forms necessary to form each type of business organization. Organizations studied include proprietorships, partnerships, and corporations. Prerequisite: admission to the Legal Assistant Program.

LEGA 204 Decedent Estates (2)
Passage of title to property at death, by will, or otherwise. Estate planning and preparation of the basic document of transfer — the will; intestate succession, planning of estates, tax matters, probate, will contests, and the necessary pleadings, practice, and procedure. Prerequisite: admission to the Legal Assistant Program.

LEGA 206 Creditor's Rights (2)
Methods of debt collection and enforcement of judgments and basic practice in Federal Bankruptcy Court. Areas covered: bills, notes, and other debts securing judgment; enforcement of money judgments, liens, garnishments, Federal Bankruptcy, and necessary pleadings, practice, and procedure. Prerequisite: admission to the Legal Assistant Program.

LEGA 207 Introduction to Law and Legal Research (3)
Theories of law, civil and criminal, statutory, court systems, pleadings and preparation of forms; methods of research to locate written laws and court decisions; theories of tort, agency, contracts, and personal property. Preparation and pleadings for court use; legal ethics, general practice, and procedure. Prerequisite: admission to the Legal Assistant Program.

LEGA 208 Domestic Relations (2)
Interests of the State in matters of family relationships: marriage and dissolution, property rights and maintenance, child custody and visitation, no-fault and other procedures, adoption, paternity extra-marriage. Methods of procedure of enforcement of these rights, and necessary pleadings, practice and procedure. Prerequisite: admission into Legal Assistant Program.

MACHINING AND MANUFACTURING TRADES

School of 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 105 Blueprint Reading; Machinists (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 107 Machine Shop Math (2)
Basic mathematic skills and applications used in the machine shop. A handheld calculator will be required of each student; type specified by instructor. Arithmetic background important. (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. Corequisite: MAMT 110 or consent of instructor. (Fall/Spring)

MAMT 120 Machine Technology I (1)
MAMT 120L Machine Technology I Laboratory (3)
Operation of engine lathes, milling machines and surface grinders. One hour lecture and five hours laboratory per week. MAMT 115 or consent of instructor. (On demand)

MAMT 125 Machine Technology II (1)
MAMT 125L Machine Technology II Laboratory (3)
Further development of skills acquired in MAMT 120. Emphasis will be placed on technical aspects of tooling and machining tolerances. One hour lecture and five hours laboratory per week. Prerequisite: MAMT 120. (On demand)

MAMT 130 Machine Technology III (1)
MAMT 130L Machine Technology III Laboratory (3)
Advanced machine operations including O.D. grinding, cutter tool grinding, gear cutting, indexing, and rotary table work with emphasis on accuracy, inspection and workmanship. One hour lecture and five hours laboratory per week. Prerequisite: MAMT 125. (Spring, on demand)

MAMT 135 Job Shop Machining I (1)
MAMT 135L Job Shop Machining I Laboratory (2)
Production of machined parts from a shop blueprint, writing process sheets, and estimating machine time. Machining of parts may involve one or more machine operation. Machine time, paperwork, inspection, and accuracy will be emphasized. One hour lecture and three hours laboratory per week. Prerequisite: MAMT 130 or consent of instructor. (On demand)

MAMT 140 Job Shop Machining II (1)
MAMT 140L Job Shop Machining II Laboratory (2)
Further development of writing process sheets, estimating machine time, performing final inspection of finished parts and using all machines in the shop including the numerical control machines. One hour lecture, three hours laboratory per week. Prerequisite: MAMT 130 or consent of instructor. (Spring, on demand)

MAMT 145 Machine Maintenance (1)
MAMT 145L Machine Maintenance Laboratory (1)
Maintaining, lubricating, and repairing machinery including making gib adjustments, selecting and using proper lubricants and selecting or manufacturing parts for making repairs with emphasis on workmanship and inspection. One hour lecture, one and one-half hours laboratory per week. Prerequisite: consent of instructor. (On demand)

MAMT 150 Introduction to Numerical Control (1)
Numerical control/computerized numerical control machining, its advantages and how it operates. The course is designed as an informational unit for customized pre-employment training. (On demand)

MAMT 151 Numerical Control Machining I (2)
MAMT 151L Numerical Control Machining I Laboratory (2)
Computerized and numerical control machining operations, including control functions, programming format, machine setup, and operation. Prerequisite: consent of instructor. Two hours lecture and three hours laboratory per week. (On demand)

MAMT 155 Numerical Control Machining II (2)
MAMT 155L Numerical Control Machining II Laboratory (2)
Further development of concepts introduced in MAMT 151 with emphasis on set up and operation of N.C./C.N.C. machines. Two hours lecture and three hours laboratory per week. Prerequisite: MAMT 151 or consent of instructor. (Spring)

MAMT 160 Properties of Materials (1)
MAMT 160L Properties of Materials Laboratory (1)
Descriptions of smelting and refining various types of metals. Discussions and demonstrations on various methods of heat treating, hardness testing, and cutting chip theory. (Fall, on demand)

MAMT 165 Manufacturing Processes (2)
Manufacturing methods other than traditional machining methods; forming, stamping, extruding, casting, electrical discharge machining, powder metallurgy, welding and finishing of material. Economical and technical aspects of these processes are emphasized. (On demand)

MAMT 207 Introduction to Statistical Process Control (2)
Introduction to the philosophical and economic bases for statistical process control and its use; mathematical and non-mathematical SPC techniques with emphasis on application. Prerequisites: MAMT 105, 106, 107, 110, and 151, or consent of instructor. (On demand)

MAMT 295 Independent Study (1,2,3)

MAMT 296 Topics (1,2,3)

MANAGEMENT

School of Business

MANG 121 Human Relations in Business (3)
Human side of organizations: morale, motivation, human needs, minorities as working partners, leadership styles, organizational environment, and other human forces having an impact on business structures. (Fall/Spring)

MANG 201 Principles of Management (3)
Management as the process of achieving organizational goals or objectives by and through others. Emphasizes functions performed by managers and how they are influenced by forces both within and outside the organization. Managers' use of resources will be investigated. (Fall/Spring)

MANG 221 Supervisory Concepts and Practices (3)
For practicing or potential supervisors and managers who hold or will hold first-line to middle-level management positions. Focuses on the management functions of planning, organizing, staffing, directing, and controlling and their relation to the daily job of the supervisor. (On demand)

MANG 298 Related Work Experience (1,2)
See ACCT 298. (Fall/Spring)

MANG 300 Small Business Management (3)
Aspects of management uniquely important to small business firms; the economic and social environment in which they function. Prerequisite: MANG 201 or consent of instructor. (Fall)

MANG 301 Organizational Behavior (3)
Human behavior, its causes and effects in organizational settings. Description of and development of an understanding of human behavior in such settings. Prerequisite: MANG 201 or consent of instructor. (Fall)

MANG 302 Problems in Small Business Operations (3)
Analysis of managerial problems of small business; preparing a business plan, case studies, outside speakers, and individual reports of local small business enterprises. Students must have an understanding of elementary accounting, finance, and business law. Prerequisites: MANG 201, 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 121 or 127, STAT 214. (Spring)

MANG 351 Preparing for Job Placement (3)
Principles and techniques involved in a job search with emphasis on conducting career research, identification of goals, preparing a job campaign, and elements of a job interview. Preparation of a job kit including a prospect list, resume, cover letter, advertisements, prospect letters, and sales and follow-up letters which can be used in a job search. Prerequisite: junior or senior standing or consent of instructor. (Fall)

MANG 371 Human Resource Management (3)
Effective use and adaptation to the human resources of an organization through the management of people-related activities including interface activities forming the core of personnel management: work, staffing, compensation, appraisal, training, development, organizational maintenance, and unions. Prerequisites: MANG 201, junior or senior standing, or consent of instructor. (Spring/even years only)

MANG 395 Independent Study (1-3)

MANG 396 Topics (1-3)

MANG 401 Advanced Problems in Small Business Operations I (6)
A Small Business Institute program sponsored by the School of Business and Small Business Administration enables students to furnish management assistance to members of the small business community. Practical training, supplementing academic theory by handling problems in a real business environment. Students must apply at least six weeks before the end of the semester preceding the semester in which they wish to participate. Credit not available through competency or challenge. Prerequisite: MANG 302 and/or consent of instructor. (Fall)

MANG 402 Advanced Problems in Small Business Operations II (6)
Continuation of MANG 401. Prerequisites: MANG 302 and/or consent of instructor. (Spring) (Not necessary to complete MANG 401 before 402.)

MANG 421 Credit and Collection Management (3)
Consumer and commercial credit in relationship to the management of credit by business firms, legal aspects of credit extension and current legislation. Information on credit operations of business for both students of business and practicing businessmen. Prerequisites: ACCT 202, MANG 201 or consent of instructor. (Spring)

MANG 471 Production/Operations Management (3)
The use of resources in producing goods and services; concepts of planning, scheduling, and controlling productive activities and physical resources. Prerequisites: MANG 301, FINA 339. (Fall/Spring)

MANG 491 Business Policies and Management (3)
Duties and responsibilities of top management in establishing policies, objectives, and future plans for business organizations. Includes complex cases taken from actual experiences in situations involving policy decisions. Required of all BBA and BS students during the last semester of the senior year. Prerequisites: all required core and emphasis courses must be completed or concurrently enrolled and senior standing. (Fall/Spring)

MANG 495 Independent Study (1-3)

MANG 496 Topics (1-3)

MANG 498 Related Work Experience (1,2)
See ACCT 298 course profile. (Fall/Spring)

MANG 499 Internship (6-12)
Opportunity to learn more about management functions and activities through exposure to an actual business or agency environment. Observation and participation in management activities enable students to relate classroom theory to on-the-job experiences. Students must apply for this course at least six weeks prior to the end of the semester preceding the semester in which they wish to take the course. Credit not available through competency or challenge. Prerequisites: BBA major, second semester junior or senior, and consent of instructor. (Fall/Spring/Summer)

MARKETING

School of Business

MARK ~~135~~ 235 Principles of Selling (3)
The salesperson as a counselor whose role is to help buyers make better decisions. Professional salesmanship is recognized as an integral function in modern society with basic sales techniques studied and practiced in sales presentations. (Fall)

MARK 231 Principles of Marketing (3)
Use and development of marketing strategy and the effects of buyer motivation. Major functions of marketing, buying, selling, distribution, pricing, advertising, and storage are studied. A contrast is made between the two marketing institutions: wholesaling and retailing. (Fall)

MARK 232 Advertising (3)
Modern advertising principles including advertising practices, terminology, the communication process, advertising agencies, media, and methods. Advertising from the business viewpoint, its importance to the consumer and the economy. (Spring)

MARK 325 Retailing (3)
The retailing environment including retail opportunities, sales stimulation, operating policies and practices, control and service. Case studies and outside speakers supplement class lectures. Prerequisite: MARK 231. (Fall)

MARK 395 Independent Study (1-3)

MARK 396 Topics (1,3)

MARK 432 Advanced Marketing (3)
In-depth complex marketing problems confronting modern business. Development of marketing strategy to allow the firm to progress toward its corporate objectives. Prerequisite: MARK 231. (Fall)

MARK 433 Marketing Research (3)
Marketing research theory and techniques designed to educate the student in the use of the scientific method, develop analytical ability, present basic marketing research tools, and develop proficiency in the art of writing research reports. Cases and actual research projects will be utilized. Prerequisites: MANG 331, MARK 432. (Spring)

MARK 495 Independent Study (1-3)

MARK 496 Topics (1-3)

MASS COMMUNICATIONS

School of Humanities and Fine Arts

MASS 101 Mass Media in America (3)
The role played by media in the everyday lives of citizens, and the economic impact on society. (Fall)

MASS 121 Introduction to Broadcasting (3)
Radio, television, and cable; includes basic theory, history, economic aspects, and impact on society.

MASS 221 Radio Production and Announcing (3)
Theory and operation of all technical equipment in a radio control room and studio. Develops voice and reading for broadcasting. (On demand)

MASS 231 News Writing and Reporting (3)
Fundamentals of news gathering and writing, interviewing, reporting and writing of newsworthy events and personalities. Work begins on computer VDTs. Stories are submitted for publication and broadcast. Prerequisite: MASS 101 or 121 or consent of instructor.

MASS 321 Broadcast Writing (3)
Techniques and practice in writing broadcast scripts, including news, advertising and documentary. Prerequisite: MASS 231 or consent of instructor. (Spring)

MASS 335 Public Relations Concepts (3)
Historical and theoretical approach to contemporary public relations with emphasis on the persuasion process and ethics, propaganda, and advertising techniques in the mass media. Prerequisites: MASS 231, MARK 232 or consent of instructor. (Fall)

MASS 341 Editing and Layout (3)
News evaluation, copy reading, headline writing, page make-up, and similar duties of a publication copy editor using computer editing and make-up. Prerequisite: MASS 231 or consent of instructor. (Fall)

MASS 351 Public Affairs and Feature Reporting (3)
Reporting on governmental agencies, including courts, police, city and county governments, school boards, and legislatures with emphasis on interpretive skills. Includes feature reporting, sports, human interest, and series articles. Prerequisite: MASS 231 or consent of instructor. (Spring/alternate years)

MASS 361 Television Production (3)
Studio and control room operation as well as out-of-studio production, emphasizing video console equipment, cameras, microphones, and video editing. Prerequisite: MASS 221 or consent of instructor. (Spring/alternate years)

MASS 395 Independent Study (1-3)

MASS 396 Topics (1-3)

MASS 397 Practicum (1)
Experience with campus media including publications and/or radio station under faculty supervision. Prerequisite: MASS 121, or consent of instructor. (Fall/Spring)

MASS 421 Journalism Law and Ethics (3)
Ethical principles and state and federal laws affecting the reporting of news, expression of opinion, news photos, advertising, and publication of newspapers. Prerequisite: upper class standing or consent of instructor. (Fall)

MASS 435 Public Relations Campaigns (3)
Campaigns and case histories presenting the scope of PR, research methodology, and audience targeting. Practical application of PR theory. Prerequisite: MASS 335 or consent of instructor. (Spring)

MASS 461 Advanced Television Production (3)
Advanced techniques in television production with an emphasis on using ENG/EFP cameras in out-of-studio situations and in video editing. Production of short videos as well as studio productions required. Prerequisites: MASS 221, 321, 361. (Fall, on demand)

MASS 494 Seminar (3)
Major issues of the media in modern culture and media criticism. Prerequisite: Upper division standing. (Spring)

MASS 495 Independent Study (1-3)

MASS 496 Topics (1-3)

MASS 497 Practicum (1)
See MASS 397 course profile.

MASS 499 Internship (8,12,15)
Work in newspapers, radio, television, advertising or public relations positions, or other situations that meet instructor's approval. Prerequisite: MASS 231 and 421, plus either MASS 341 and 351, or 361. (Fall/Spring/Summer)

MATHEMATICS

School of Natural Sciences and Mathematics

MATH 015 Basic Mathematics (3)
Review of addition, subtraction, multiplication, and division of whole numbers, decimals, fractions; ratios, measurements and algebraic notation. For reinforcing previous knowledge or for learning the basic arithmetic process. (Fall/Spring)

MATH 020 Basic Algebra (3)
Basic algebra processes including operations with signed numbers, literal expressions, linear equations, fractions, factoring, graphs, and quadratic equations. For reinforcing previous knowledge or learning the basic algebraic processes. (Fall/Spring)

MATH 091 Intermediate Algebra (3)
Further study in topics of algebra. Includes properties of real and complex numbers; laws of exponents and radicals; factoring polynomials; solving linear and quadratic equations and inequalities; rational expressions and complex fractions; introduction to functions and relations; applications. Prerequisites: one year high school algebra or MATH 020. (Fall/Spring)

§MATH 105 Elements of Mathematics I (3)
Problem solving, sets, numeration systems, integers, number theory and rational numbers. The underlying mathematical processes and mathematical reasoning are stressed. Designed for the prospective elementary teacher. Prerequisite: interview and consent of instructor. (Fall/Spring)

§MATH 106 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 110 College Mathematics (3)
Essential concepts of mathematics for students in social sciences, psychology, nursing, etc. Topics include solving equations, graphing, sets, calculators, counting, probability, logic, geometry, summations, interest, annuities, and descriptive statistics. (Fall/Spring)

§MATH 113 College Algebra (4)
Systems of integers, rational numbers, real numbers, complex numbers, conic sections, linear and quadratic relations, exponential and logarithmic functions, functions and their graphs, systems of equations, higher-degree equations, and inequalities. Prerequisite: MATH 091 or two years of high school algebra. (Fall/Spring)

§MATH 119 Precalculus Mathematics (5)
Polynomials, exponential and circular functions, inverse functions, conditional equations, matrices, determinants, systems of equations, complex numbers, vectors, theory of equations, binomial theorem, and trigonometric functions. Prerequisite: MATH 113 or three years of high school mathematics or consent of instructor. Trigonometry recommended. (Fall/Spring)

§MATH 121 Mathematical Foundations of Business (3)
Linear and quadratic functions, graphs, linear programming, differential and integral calculus techniques as applied to administrative decision-making, providing business students with a mathematical background that includes the basic quantitative skills and methods for solving business-related quantitative problems. Prerequisite: MATH 113 or two years of high school algebra. (Fall/Spring)

§MATH 127 Mathematics of Finance (3)
Simple interest, simple discount, compound interest, continuously compounded interest, annuities, perpetuities, capitalization, determining payment size, determining outstanding principle, and constructing amortization schedules, including the derivation of mathematical formulae and the methods for solving many financial problems. Prerequisites: MATH 113 or consent of instructor. (Fall)

§MATH 130 Trigonometry (3)
Trigonometric and circular functions, their graphs, triangle solution techniques, identities, solving trigonometric equations and inequalities and vectors. Prerequisite: MATH 113 or consent of instructor. (Fall/Spring)

MATH 141 Analytical Geometry (3)
Cartesian coordinates, distances, parallels, perpendiculars, locus of an equation, general line forms, general plane forms, general quadratic forms, polar coordinates, vectors in two and three dimensions, and other selected topics. Prerequisites: MATH 130 or consent of instructor. (Spring)

§MATH 146 Calculus for Biological Sciences (5)
Sets, functions, derivatives, integrals, trigonometry, series, exponential and logarithmic functions, partial derivatives, and multiple integration taught from an intuitive point of view with many examples from the biological sciences. Prerequisite: MATH 113 or consent of instructor. (On demand)

§MATH 151 Calculus I (5)
Functions, limits of functions, derivatives, definite integral, antiderivatives, applications, trigonometric exponential and logarithmic functions. Prerequisite: MATH 119 or consent of instructor. (Fall/Spring)

§MATH 152 Calculus II (5)
Trigonometric and hyperbolic functions, techniques of integration, series, conics, polar coordinates, and parametric equations. Prerequisite: MATH 151. (Fall/Spring)

§MATH 253 Calculus III (4)
Vectors in three-dimensional space, vector functions, partial derivatives, directional derivative and multiple integrals. Prerequisite: MATH 152. (Fall/Spring)

§MATH 260 Differential Equations (3)
Techniques of solving differential equations of order one, linear differential equations, linear equations with constant coefficients, non-homogeneous equations, variation of parameter techniques, and Laplace transform methods. Prerequisite: MATH 253 or consent of instructor. (Spring)

§MATH 265 Linear Algebra (3)
Matrices, solving systems of equations, determinants, vectors, vector spaces, linear transformations and eigenvalues. Prerequisite: MATH 253 or consent of instructor. (Fall/Spring)

MATH 305 Euclidean Geometry (3)
Development of Euclidean Geometry including basic concepts of logic, axiomatic proofs, inductive reasoning, algebraic proofs in Cartesian coordinates, computer programming applications, and the van Hiele method. Intended for students seeking teacher certification. Prerequisites: Calculus II or consent of instructor. (Spring)

MATH 310 Number Theory (3)
Classical number theory including the fundamental theorem of arithmetic, congruences, and linear diophantine equations. Prerequisite: MATH 152. (On demand)

MATH 347 Methods of Teaching Secondary Mathematics (3)
Methods and techniques of teaching mathematics at the secondary education level. Presentation of short lessons by students will constitute a major part of the course. Prerequisite: consent of instructor. (Fall)

MATH 360 Methods of Applied Mathematics (3)
Selection of advanced mathematical techniques of particular use to scientists and engineers including the theory of linear spaces, transform techniques and harmonic analysis, partial differential equations, and tensor analysis on manifolds. Applications are stressed. Prerequisite: MATH 260. (Spring)

MATH 361 Numerical Analysis (4)
Elementary numerical analysis using the hand-held programmable calculator including Taylor's theorem, truncating errors, iteration processes, least squares methods, numerical solution of algebraic and transcendental equations, systems of equations, ordinary and partial differential equations, integral equations, interpolation, finite differences, eigenvalue problems, relaxation techniques, approximations, and error analysis. Prerequisites: MATH 152. (Fall)

MATH 369 Mathematical Logic and Discrete Structures (3)
Elementary logic, induction, recursion, recurrence relations, sets, combinatorics, relations, functions, graphs, trees, and elementary abstract structures. Prerequisites: MATH 121 or 151, MATH 265 or consent of instructor. (Fall)

MATH 370 Discrete Mathematics (3)
Applications of logic, Boolean algebra and computer logic, abstract structures, coding theory, finite-state machines, and computability. Prerequisites: MATH 369 or MATH 265 and consent of instructor. (Spring)

MATH 380 History of Mathematics (3)
History of mathematics from antiquity to the present with emphasis upon the development of mathematics concepts and the people involved. Prerequisite: MATH 152. (Spring)

MATH 385 Modern Geometry (3)
Classical Euclidean geometry of polygons and circles, synthetic geometry, constructions, inversive geometry, finite geometry, geometric transformations, and convexity. Prerequisites: MATH 253. (Fall)

MATH 390 Abstract Algebra (3)
Mathematical induction, equivalence relations, classical group theory — including quotient groups and group isomorphisms and homomorphisms — and an introduction to rings and fields. Prerequisite: MATH 265. (Alternate Fall)

MATH 391 Abstract Algebra II (3)
Topics in algebraic structures on groups, rings, fields, and modules. Prerequisites: MATH 390. (Alternate Spring)

MATH 395 Independent Study (1-3)

MATH 396 Topics (1-3)

MATH 450 Complex Variables (3)
Algebra of complex numbers, analyticity, differentiation and integration of complex functions, Cauchy's integral formulae, and series. Prerequisite: MATH 253. (Fall)

MATH 452 Advanced Calculus (3)
Sequences, Euclidean spaces, limits of functions, continuity, differentiation, and integration. Prerequisite: MATH 253. (Alternate Fall)

MATH 453 Advanced Calculus II (3)
Uniform continuity, topology in metric spaces, normed linear spaces, the differential and 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 265. (Spring)

MATH 495 Independent Study (1-3)

MATH 496 Topics (1-3)

AUTOMOTIVE TECHNOLOGY

School of Technology

AUTOMOTIVE

MECA 116 Transaxles and Driveaxles (1)
MECA 116L Transaxles and Driveaxles Laboratory (2)
Drivelines and driveaxle; theory of operation, inspection and repair of both front wheel drive and rear wheel drive systems. Also includes manual transaxle theory of operation, service and repair of both domestic and imported models. Modular course — three hours lecture and nine hours laboratory per week. (Fall)

MECA 121 Clutches and Standard Transmissions (2)
MECA 121L Clutches and Standard Transmissions Laboratory (2)
Theory of operation, removal, inspection and replacement of parts of automotive type clutch systems and 3-, 4-, and 5-speed manual shift transmissions. Modular course — six hours lecture and nine hours laboratory per week. (Fall)

MECA 130 Automotive Ignition Systems (2)
MECA 130L Automotive Ignition Systems Laboratory (1)
Auto ignition systems theory of operation, inspection, and repair. Point type electronic and distributorless systems are all explained. Modular course — six hours lecture and five hours laboratory per week. (Fall)

MECA 142 Suspension and Alignment (3)
MECA 142L Suspension and Alignment Laboratory (4)
Theory of operation, component identification, testing and component replacement. Five basic alignment angles, 2- and 4-wheel alignment procedures, tire wear diagnosis and wheel balance are covered in detail. Modular course — nine hours lecture and sixteen hours laboratory per week. (Spring)

MECA 222 4X4 Components and Repair (2)
MECA 222L 4X4 Components and Repair Laboratory (3)
Comprehensive study of the systems of a four-wheel drive vehicle, theory of operation, component identification, and service and repair of these systems. Maintenance and problem diagnosis receive special attention. Modular course, five weeks — six hours lecture and fourteen hours laboratory per week. (Fall)

MECA 223 Automotive Engine Diagnosis, Tune-up and Performance (2)
MECA 223L Automotive Engine Diagnosis, Tune-up and Performance Laboratory (3)
Comprehensive study of engine performance, diagnosis, testing, and service-related systems using advanced testing equipment. Modular course — six hours lecture and fourteen hours laboratory per week. (Spring)

MECA 227 Automatic Transmissions (2)
MECA 227L Automatic Transmissions (2)
Principles of operation of planetary gear sets, fluid couplings, torque converters, servos, clutch packs, and control circuits. Modular course — six hours lecture and nine hours laboratory per week. (Fall)

MECA 239 Fuel and Emission Control System (4)
MECA 239L Fuel and Emission Control System Laboratory (2)
Carburation and fuel injection; theory of operation, system testing and problem diagnosis along with emission control systems and service or replacement of related components. Special emphasis on problem diagnosis. Modular course — twelve hours lecture and nine hours laboratory per week. (Fall)

MECA 254 Automotive Electronics (4)
MECA 254L Automotive Electronics Laboratory (2)
Advanced auto electronics relating to solid state systems, command computers, and electronic advancements in technology. Modular course — twelve hours lecture and nine hours laboratory per week. (Spring)

MECA 295 Independent Study (1,2)

MECA 296 Topics (1,2)

MECA 299 Automotive COOP (2)
Actual placement in area shops to further the student's knowledge of actual work conditions and procedures. Modular course — eighteen hours per week. Prerequisites: second year status enrolled in A.A.S. degree program, in last semester of training. (On demand)

HEAVY EQUIPMENT — DIESEL MECHANICS

MECD 115 Heavy Equipment Maintenance (2)
MECD 115L Heavy Equipment Maintenance Laboratory (1)
Diesel fuels, lubricants, coolants, filters, bearings, seals, cooling and lubricating systems, chain and belt drives, tires, pumps and air systems. Emphasis on preventive maintenance and maintenance records. Six and one-half hours lecture, five hours laboratory per week. (Spring)

MECD 132 Heavy Equipment Drivetrain I (3)
MECD 132L Heavy Equipment Drivetrain I Laboratory (3)
Powertrain component operating principles, construction, repair and maintenance of manual transmission, drivelines, clutches, differentials, suspension and air brakes according to standard operating procedures. Modular course — nine and one-half hours lecture and thirteen and one-half hours laboratory per week. (Fall)

MECD 150 Fluid Power (4)
MECD 150L Fluid Power Laboratory (3)
Principles of hydraulics and pneumatic system including the construction, application, repair, maintenance and troubleshooting of components and systems. Modular course — twelve and one-half hours lecture, thirteen and one-half hours laboratory per week. (Spring)

MECD 222 Fuel Systems (3)
Design, construction, repair, maintenance, and troubleshooting procedures for fuel injection systems, components, pollution control devices, and electronic control systems. Modular course — nine and one-half hours per week. Spring.

MECD 223L Diesel Engine Analysis Performance Laboratory (3)
Application of analysis and trouble-shooting techniques, and adjustment of diesel engines for optimum operating performance. Fourteen hours per week. Prerequisites: MECD 222 or consent of instructor. (Spring)

MECD 225 Diesel Engine Reconditioning (3)
MECD 225L Diesel Engine Reconditioning Laboratory (4)
Four cycle and two cycle engine's cylinder block, crankshaft and bearings, piston and connecting rod assemblies, camshaft, gear train, engine timing, cylinder head assembly, intake and exhaust systems, components, including disassembling, inspecting, repairing and reassembling a diesel engine according to operating specifications. Modular course -- ten hours lecture, nineteen hours laboratory per week. Prerequisites: MECH 113, 113L. (Spring)

MECD 232 Heavy Equipment Drivetrain II (3)
MECD 232L Heavy Equipment Drivetrain II Laboratory (3)
Power train component operating principles, construction, repair and maintenance of final drives, undercarriage, steer clutches, power shift transmissions, differentials, and off-road brake systems. Modular course — ten hours lecture, fourteen hours laboratory per week. (Fall)

MECD 275L Heavy Equipment Repair Laboratory (3)
General maintenance, troubleshooting and repair under simulated industrial shop conditions including use of service manuals, sorting work orders, ordering parts, and dealing with customers. On-the-job training: fourteen hours per week. Prerequisite: sophomore standing and consent of instructor. (On demand)

MECD 295 Independent Study (1,2)

MECD 296 Topics (1,2)

MECHANICS - GENERAL

MECH 105 Introduction to Shop Practice & Diagnostic Equipment (2)
MECH 105L Introduction to Shop Practice & Diagnostic Equipment Laboratory (1)
Shop procedures, personal safety practices, tool identification and use; reference material and usage diagnostic test equipment usage and periodic maintenance service. Modular course — Six hours lecture and four hours laboratory per week. (Fall)

MECH 113 Internal Combustion Engines (3)
MECH 113L Internal Combustion Engines Laboratory (4)
Internal combustion engine for the Auto Mechanics or Diesel Mechanics/Heavy Equipment student. Includes types, design construction, principles of operation, function of components, parts recognition, identification of basic parts, disassembly and assembly of the four-cycle gasoline engine, measuring of parts, inspection and diagnosis of parts, and recognition of worn, damaged, or broken parts. Introduction of valve and seat reconditioning, valve guide repair or replacement, and proper assembly procedures. Modular course — nine hours lecture and sixteen hours laboratory per week. (Spring)

MECH 125 Light Duty Brake Systems (2)
MECH 125L Light Duty Brake Systems Laboratory (2)
Theory of operation, inspection, and repair of automotive hydraulic brake systems including antilock systems. Modular course — six hours lecture and fourteen hours laboratory per week. (Fall)

MECH 133 Climate Control Systems (3)
MECH 133L Climate Control Systems Laboratory (1)
Heating and refrigeration, methods of operation and control, proper handling of refrigerant, use of testing equipment, efficiency testing, leak testing, and complete service procedures. Component replacement and repair as well as general maintenance. Modular course — ten hours lecture and five hours laboratory per week. (Spring)

MUSIC

School of Humanities and Fine Arts

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)

§MUSA 114 Theory I — Introduction **(3)**
Harmonic principles of the "common-practice" period including scales, intervals, triads and 7th chords. Introduction to part writing and voice leading. Prerequisite: satisfactory score on theory placement examination; concurrent enrollment in MUSA 116; concurrent enrollment in MUSA 130 or prior knowledge of the keyboard. (Fall)

§MUSA 115 Theory II-Diatonic Concepts **(3)**
Continuation of MUSA 114, extending to all types of diatonic 7th chords, and their usages. Includes advanced rules of tonal harmonization. Prerequisite: MUSA 114 or consent of instructor; concurrent enrollment in MUSA 117. Concurrent enrollment in MUSA 131 or prior knowledge of the keyboard is required. (Spring)

MUSA 116 Ear Training and Sightsinging I **(2)**
Skills developed in reading rhythms, sightsinging, and listening. Emphasis on beginning melodic, harmonic, and rhythmic dictation.. To be taken concurrently with MUSA 114. (Fall)

MUSA 117 Ear Training and Sightsinging II **(2)**
Further development of skills in sightsinging, rhythmic recognition, advanced listening abilities, including dictation of melodic and harmonic intervals, chord progressions, and two, three, and four-part chorales. To be taken concurrently with MUSA 115. Prerequisite: MUSA 116. (Spring)

MUSA 128 Workshop in Music **(1,2,3)**
Consists of specialized workshops in various aspects of music made possible by visiting artists and/or lecturers. (Fall/Spring, on demand)

MUSA 130 Class Piano I **(2)**
For major and non-major students. Application of scales, chords and elements of music at the keyboard and development of repertoire. Recommended for all elementary, early childhood majors and music theatre majors. Prerequisite: MUSA 110 (music majors only). (Fall/Spring)

MUSA 131 Class Piano II **(2)**
The student gains further expertise at the keyboard. Prerequisite: MUSA 130 or consent of instructor. (Fall/Spring)

MUSA 137 Class Voice I **(2)**
Fundamentals of singing, interpretation and solo repertoire for beginning voice students. (Fall)

MUSA 138 Class Voice II **(2)**
Concepts of phonetics, language (diction for singers), and solo repertoire. Prerequisite: MUSA 137. (Spring)

MUSA 160 The Music Business **(1)**
Designed to facilitate entry into the professional music arena by providing a background in the business aspects of the profession. Includes contracts, marketing, recording, TV, radio, film, the Musician's Union, AFTRA, royalties, managers, agents, club owners, and alternate careers. (Alternate/Fall)

MUSA 214 Theory III-Chromatic Concepts **(2)**
The full use of chromaticism through secondary dominants, altered chords, Neapolitan and augmented sixth chords, and modulation techniques. Continues into 20th Century including the use of advanced chromaticism, serialism, and atonality. Prerequisite: MUSA 115. (Fall)

MUSA 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; also for any student to satisfy a Fine Arts elective requirement. (Fall/Spring)

MUSA 228 Workshop in Music **(1,2,3)**
Consists of specialized workshops in various aspects of music made possible by visiting artists and/or lecturers. (Fall/Spring, on demand)

MUSA 230 Class Piano III **(2)**
A concentrated study of repertoire in preparation for the piano proficiency exam. Maximum keyboard time will develop coordination and flexibility. Prerequisites: MUSA 130, 131, or consent of instructor. (Fall)

MUSA 232 String Techniques and Materials (1)
Study of violin, viola, cello, and string bass in a class situation. Emphasis is on fundamentals of playing techniques at an elementary level. (Alternate Fall)

MUSA 233 Woodwind Instruments Techniques and Materials (1)
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 (1)
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 (1)
The study of methods and materials for teaching beginning percussion in the public school. Includes practical instruction on the instruments utilized in the marching band, orchestra, and stage band. (Alternate Spring)

MUSA 236 Electronic Instrument Techniques and Materials (2)
The study of methods and materials for the introduction to the use of electronic instruments, including the areas of sound reinforcement (microphones and amplification) and sound generation (synthesis) by electronic means. (Alternate Spring)

MUSA 241 Music and Methods in Early Childhood Education (2)
For students who will be working with preschoolers and kindergarten-age students. Through the creative process students develop simple tunes and gain knowledge and appreciation of music. (Fall/Spring)

MUSA 260 Songwriter I (1)
Basic skills for the songwriter including correct notation techniques, phrasing, line and climax, standard forms, harmonic and rhythmic idioms, lyrics and content, and preparation of lead sheets. Prerequisite: MUSA 110. (Alternate Fall)

MUSA 262 Commercial Arranging (1)
Elementary arranging skills including instrumentation, basic problems and principles of orchestration for various groups and functions, standard musical textures, standard voicing techniques, special harmonic practices and analysis of professional arrangements. Prerequisite: MUSA 260. (Alternate 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. (Alternate/Spring)

MUSA 268 Improvisation (2)
Materials and techniques for improvisation, including chord and scale construction, modality, harmonic patterns, linear concepts, with emphasis on technique, style and idiomatic usage.

MUSA 310 Accompanying Techniques (2)
Development of accompanying proficiency, including listening skills, form, and analysis of the music to be performed; rehearsing techniques; accompanying repertoire for vocal; instrumental; and ensemble playing. Prerequisites: MUSA 214, 216 or consent of instructor. (Alternate Fall)

MUSA 316 Comprehensive Musicianship I (3)
Study and writing of 18th Century counterpoint, analysis of contrapuntal forms including two- and three-part inventions and fugue, and an overview of other forms such as binary, ternary, sonata-allegro, and rondo. Prerequisite: MUSA 214. (Fall)

MUSA 317 Comprehensive Musicianship II (3)
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 316. (Spring)

MUSA 318 Vocal Literature (3)
Follows the changing patterns, styles, and fashions of the secular art-song from medieval Europe to Europe and America of the day. Prerequisites: MUSA 137,138 or previous enrollment in private vocal studies. (Spring)

MUSA 326 Music History and Literature I (3)
Literature and styles of the master composers of music through Ancient, Medieval, Renaissance, and Baroque music. Course work is designed for the fine arts major, utilizing a lecture and listening laboratory format and one scholarly research paper of the student's choice. Open to any student with sufficient background. Prerequisite: consent of instructor. (Fall)

MUSA 327 Music History and Literature II (3)
Literature and styles of the master composers of music through the Classic, Romantic, and Modern ages. Course work is designed for the fine arts major, utilizing a lecture and listening laboratory format and one scholarly research paper of the student's choice. Open to any student with sufficient background. Prerequisite: consent of instructor. (Spring)

MUSA 328 Workshop in Music (1,2,3)
Consists of specialized workshops in various aspects of music made possible by visiting artists and/or lecturers. (Fall/Spring, on demand)

MUSA 337 Diction for Singers (3)
Pronunciation of Italian, German, and French as applied to the performance of vocal literature. (Alternate Fall)

MUSA 340 Teaching Elementary and General Music: Methods, Principles and Materials (3)
For music education majors to provide an overview of goals and activities to be included in elementary and general music classes. Weekly laboratory experiences. Prerequisites: MUSA 115, 220. (Spring, alternate years)

MUSA 395 Independent Study (1-3)

MUSA 396 Topics (1-3)

MUSA 410 Vocal Pedagogy (3)
The physiology of the human vocal mechanism, various teaching styles, vocal problems related to various age groups, and vocal repertoire pertinent to all age groups and levels of development. Prerequisites: MUSA 137,138 or previous or concurrent enrollment in private vocal studies. (Alternate Spring)

MUSA 428 Workshop in Music (1,2,3)
Consists of specialized workshops in various aspects of music made possible by visiting artists and/or lecturers. (Fall/Spring, on demand)

MUSA 440 Teaching Vocal Music K-12: Methods, Principles, and Materials (3)
Concepts and materials preparatory for teaching vocal music in the public schools. Content deals with the adolescent voice, vocal techniques and rehearsal approaches, development of the elementary, middle/junior high school, and senior high vocal program, and choral repertoire appropriate for each level. Prerequisites: MUSA 216 and MUSA 137, MUSL 137 or MUSP 150. (Spring, alternate years)

MUSA 441 Teaching Instrumental Music K-12 (3)
Designed to investigate many of the problems that future instrumental music teachers will encounter in the profession. Activity will be centered on developing teaching competencies, administration of the program and materials and equipment needed for the instrumental music program. Prerequisites: All MUSA 100-300 courses. (Spring, alternate years)

MUSA 450 Beginning Conducting (2)
Basic concepts and techniques necessary to conduct music competently. Students will be expected to master patterns, fermatas, dynamics, etc. Observation of other conductors and score study is included. Required of all music majors; prerequisite for Advanced Conducting, MUSA 351A (Instrumental) and MUSA 351B (Choral). (Alternate Fall)

MUSA 451A Advanced Conducting, Instrumental (2)
MUSA 451B Advanced Conducting, Choral (2)
More difficult techniques such as advanced meters, advanced score study, interpretive conducting and ensemble rehearsal techniques. Required of all music majors. Prerequisites: MUSA 450. (Alternate Spring)

MUSA 495 Independent Study (1-3)

MUSA 496 Topics (1-3)

LESSONS

Applied music lessons may be taken for credit. Students meet weekly with an individual instructor assigned by the music department. An instructional fee is required, and lessons may be taken twice at each level. Music majors required to attend and perform at weekly recitals.

Applied music lessons are offered in the following:

MUSL 130, 230, 330, 430	Keyboard (Fall/Spring)	(1)
MUSL 131, 231, 331, 431	Guitar (Fall/Spring)	(1)
MUSL 132, 232, 332, 432	Strings (Fall/Spring)	(1)
MUSL 133, 233, 333, 433	Woodwind (Fall/Spring)	(1)
MUSL 134, 234, 334, 434	Brass (Fall/Spring)	(1)
MUSL 135, 235, 335, 435	Percussion (Fall/Spring)	(1)
MUSL 136, 236, 336, 436	Electronic Instruments (Fall/Spring)	(1)
MUSL 137, 237, 337, 437	Voice (Fall/Spring)	(1)
MUSL 138, 238, 338, 438	Composition (Fall/Spring)	(1)

PERFORMING

MUSP 140, 240, 340, 440 Symphonic Band (1)
An ensemble of music students and students from other disciplines who perform a wide variety of literature selected from standard and current concert band repertoire. (Fall/Spring)

MUSP 141, 241, 341, 441 Symphony Orchestra (1)
Students who demonstrate proficiency on orchestra instruments, through audition with the conductor, may become members of the Grand Junction Symphony and receive credit. (Fall/Spring)

MUSP 144, 244, 344, 444 Jazz Ensemble (1)
A group utilizing stage band instrumentation and performing many local and required concert engagements. By audition; preference given to members of Symphonic Band. (Spring)

MUSP 145, 245, 345, 445

(Section A) Instrumental Ensemble-Woodwinds	**(1)**
(Section B) Instrumental Ensemble-Brass	**(1)**
(Section C) Instrumental Ensemble-Strings	**(1)**
(Section D) Instrumental Ensemble-Percussion	**(1)**
(Section E) Instrumental Ensemble-Guitar	**(1)**

Groups organized upon the talents and interests of the members. Specified ensembles may be offered from time to time in the format of String Quartets, Woodwind, and Brass Choirs, etc. A minimum of one public performance per each term of enrollment is required. (Fall/Spring)

MUSP 146, 246, 346, 446 Community Performance Organizations (1)
Students and other musicians in the community who desire college credit are allowed to demonstrate ability in their medium and to become, by audition, members of various musical groups and receive credit. Each level may be repeated once for credit.

MUSP 150, 250, 350, 450 Concert Choir (1)
The major large choir, open to all students and staff who enjoy singing, with final membership approved by the director. Concert Choir performs great choral literature of all types representing Mesa State College in formal concerts both on and off campus including concert tours, performing large-scale masterworks with orchestra. (Fall/Spring)

MUSP 156, 256, 356, 456 Chamber Choir (1)
An advanced smaller choral ensemble which performs vocal literature from Renaissance to Contemporary art music including jazz. Chamber Choir performs on and off campus, on concert tours, and at the annual Madrigal Dinners. Staff and students are eligible by audition; membership in Concert Choir generally a prerequisite. (Fall/Spring)

MUSP 157, 257, 357, 457 Men's Chorus (1)
Campus-wide chorus open to all interested students and faculty. Performs all types of music written for combined men's voices. Concertizes in conjunction with other college choral ensembles and in separate performances on-off campus. Prerequisites: Taken in sequence or with consent of instructor. (Fall/Spring)

MUSP 158, 258, 358, 458 Women's Chorus (1)
Performances include the complete range of music written for combined women's voices, both on and off-campus, and in conjunction with the other college choral ensembles in Music Department concerts. Prerequisites: consent of director. (Fall/Spring)

MUSP 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)
Preparation for senior level recital in student's performance medium. Recital must be given during term in which the student is registered in this course and must be supervised by the student's major applied music professor. (Fall/Spring)

MUSP 495 Independent Study (1-3)

MUSP 496 Topics (1-3)

NURSING

School of Nursing and Allied Health

NURS 113 Nursing Concepts I (7)
NURS 113L Nursing Concepts I Laboratory (2)
The concept of man as a system with focus on the holistic approach to nursing. Blends theory and practice including the scientific principles for basic nursing procedures and skills. The nursing process provides the method for practice of basic skills to individuals undergoing medical and surgical interventions to correct dysfunctions. Prerequisite: acceptance into the ADN program. (Fall)

NURS 123 Nursing Concepts II (5)
NURS 123L Nursing Concepts II Laboratory (4)
Evaluation of common mental and physical dysfunctions experienced by patients of all ages, including those experiencing childbirth, with focus on identifying the input, output, and throughput when using the nursing process in providing care to patients. (Spring)

NURS 210 Nursing Concepts III (5)
NURS 210L Nursing Concepts III Laboratory (5)
General systems theory in evaluation of dysfunctions of all ages including the human adaptive capabilities throughout the life span and utilization of the nursing process. The impact on the child and adolescent is emphasized. (Fall)

NURS 225 Introduction to Nursing (2)
Theoretical foundation of nursing practice. Historical, legal, political and ethical issues affecting nursing and the health care delivery system are examined. Prerequisite: acceptance into the BSN program. (Fall)

NURS 230 Nursing Concepts IV (5)
NURS 230L Nursing Concepts IV Laboratory (5)
General systems approaches to patients throughout the life span; dysfunction of various subsystems with emphasis on the psychological components of man and the use of the nursing process. (Spring)

NURS 245 Fundamentals of Nursing (3)
NURS 245L Fundamentals of Nursing Laboratory (2)
Development of selected interpersonal, communication, and psychomotor skills to assist individuals in meeting their health care needs. Begins to use the nursing and teaching process in assisting individuals to meet health needs. Prerequisite: NURS 225. (Spring)

NURS 273 Issues in Nursing (2)
ADN Exit course exploring the effect of recent trends and issues while examining historical components of nursing. Students are encouraged to become aware of potential problems experienced during the transition from student to practicing nurse. (Spring)

NURS 315 Professional Role Transition (3)
Designed to facilitate the transition between the technical nurse graduate to the professional practice of nursing at the baccalaureate level. For returning RN and LPN students. (Fall)

NURS 325 Pharmacology in Nursing (2)
Modern drug therapy with the study of specific classifications, terminology, theories, and techniques of safe administration. Prerequisite: concurrent enrollment in NURS 345, 345L or all of the following: 355, 355L and 365, 365L. (Fall/Spring)

NURS 335 Health Assessment (3)
NURS 335L Health Assessment Laboratory (1)
Assessment of the health status, history taking, and physical examination of adults and children. Prerequisite: concurrent enrollment in NURS 345, 345L or all of the following: 355, 355L and 365, 365L. (NURS 335L for RNs only - on demand) (Fall/Spring)

NURS 345 Nursing Process I: The Adult (4)
NURS 345L Nursing Process I: The Adult Laboratory (4)
Application of the nursing process in the care of individuals. Pathophysiological problems of moderate intensity and relative stability are explored. (Fall/Spring)

NURS 355 Nursing Process II: Expanding Family (2)
NURS 355L Nursing Process II: Expanding Family Laboratory (2)
The cognitive, psychomotor and affective skills essential to the care of the expanding family through the trimesters of pregnancy. (Fall/Spring)

NURS 361 Living with Loss (2)
Theories of attachment and loss applied to situational and maturational losses. (On demand)

NURS 362 Spiritual Aspects of Caring (2)
Theoretical approaches to man's spiritual nature and the application of theories to the helping relationship. (On demand)

NURS 363 Women's Health Issues (2)
Topics and issues that influence women's health in contemporary society. Foundations of alternative health services are discussed. (On demand)

NURS 365 Nursing Process III: The Child (2)
NURS 365L Nursing Process III: The Child Laboratory (2)
Health and illness needs of the child within the developing family. Pathophysiological and psychosocial dysfunctions of children and adolescents are explored. (Fall/Spring)

NURS 395 Independent Study (1-3)

NURS 396 Topics (1-3)

NURS 425 Nursing Process IV: Community Health (3)
NURS 425L Nursing Process IV: Community Health Laboratory (2)
Orientation to community public health including a study of background, development and trends. Students apply community health principles in the care for individuals, families, and groups in a community setting. Prerequisites: completion of 300 level nursing courses. (Fall/Spring)

NURS 435 Nursing Process V: Mental Health (3)
NURS 435L Nursing Process V: Mental Health Laboratory (2)
In-depth examination of psychosocial adaptive modes in relation to mental health maintenance and restoration; emphasis on psychosocial developmental theories, principles of communication and relationship development. Includes assessment of emotional disorders and psychotherapeutic interventions. Prerequisites: completion of 300 level nursing courses. (Fall/Spring)

NURS 443 Power and Political Dynamics in Nursing (2)
Political influences and social forces in history which impact nursing. The utilization of power and politics are analyzed as methods to further the potential of nursing. Topics include role conflict of the working woman, attitudes toward masculinity and femininity, finances and economy, networking, and keys of career success. (On demand)

NURS 445 Nursing Process VI: Advanced Nursing Process (3)
NURS 445L Nursing Process VI: Advanced Nursing Process Laboratory (4)
Advanced concepts essential for nursing care of clients requiring intervention in relation to complex multisystem illness or injury. Provides opportunities for direct patient care in both structured and unstructured settings. Prerequisites: completion of 300 level nursing courses. (Fall/Spring)

NURS 455 Leadership Process: Theory and Practice (3)
NURS 455L Leadership Process: Theory and Practice Laboratory (2)
Focuses on the humanistic management process. The systems approach to management theory, principles, and concepts is developed. Planning, organizing, directing, and controlling are examined as they apply to the delivery of nursing care. Prerequisite: completion of required 300 level nursing courses. (Fall/Spring)

NURS 461 Health Care Systems (2)
Overview of the multiple roles of the health care delivery system including both traditional and alternative methods; and the impact of insurance programs, federal government, and consumerism on health delivery. The roles of providers and personnel in the delivery of health care in the U.S. and other countries are discussed. Prerequisite: consent of instructor. (On demand)

NURS 462 Psychosocial Issues (2)
Current psychosocial issues which affect individual, family and community systems. Behavior is viewed in the context in which it occurs, with emphasis on interactions between the client and his environment. Assessment of dysfunctions and facilitation of health promoting or restorative behaviors are discussed. Prerequisite: consent of instructor (On demand)

NURS 464 The Older Adult (2)
Theories of aging with emphasis on the age normal changes as well as social influences affect the older adult. Ethical and legal considerations of the elderly as well as resources are identified. Prerequisite: senior standing or instructor consent. (On demand)

NURS 475 Research Process (2)
The relationship between nursing research and the system of nursing are examined; processes and methodology of scientific investigation involving content relevant to the use of research studies in nursing are presented. Prerequisite: STAT 200 or other acceptable statistic course. (Fall/Spring)

NURS 485 Professional Perspectives (2)
Trends and issues affecting nursing and health care delivery systems with emphasis on the role of the professional nurse in shaping health care for the future. Marketing strategies are identified. Prerequisite: completion of 300 level nursing courses.

NURS 495 Independent Study (1-3)

NURS 496 Topics (1-3)

OFFICE ADMINISTRATION

School of Business

OFAD 101 Bookkeeping for Small Business (3)
For persons keeping accounting records in a legal, medical, or other professional office or those who will work in the accounting department of a small retail firm. Fundamental accounting principles including opening through closing a set of books. Not advised for four-year accounting majors. No credit allowed if credit already established in ACCT 201. (Fall/Spring)

OFAD 147 Medical Terminology (3)
Basic medical terminology as applied to major systems of the body and related diseases. Includes special applications related to medical practice with emphasis on spelling. (Fall)

OFAD 151 Keyboarding (3)
Keyboard, basic word processing commands, minimum skill with instruction and practice on letters, reports, and tables. (Fall/Spring)

OFAD 152 Document Format/Skill Development (3)
Emphasizes skill development and formatting of mailable letters, manuscripts, and business forms to a level required in the average office on electronic typewriters and microcomputers. Prerequisite: knowledge of keyboard, concurrent enrollment in OFAD 264 or consent of instructor. (Fall/Spring)

OFAD 154 Laboratory Techniques (2)
Basic lab procedures such as blood counts, urinalysis, EKG, etc. Actual lab experience. Prerequisite: BIOL 141 or consent of instructor. (Spring)

OFAD 159 Medical Office Procedures (3)
Medical office management, patient reception, record keeping, care of equipment and supplies, communication skills, and assisting the physician and patient including examination room techniques. Prerequisites: OFAD 147,152, or consent of instructor. (Spring)

OFAD 201 Office Management (3)
Office organization including work in the office, office layout, equipment, supplies and forms, personnel problems, costs, control of office work, methods of recognizing and solving office communication problems, awareness of successful human relations, changing technologies and philosophies of business, and technical terminology used in business. (Spring)

OFAD 202 Records Management (3)
Institutional and legal requirements for developing, storing and maintaining business and personnel information systems. Management of computerized and non-computerized systems emphasized including storage and retrieval using alphabetic, geographic, numeric and subject methods for manual, micro-records, and computerized systems; and control of records management programs. (Fall)

OFAD Transcription Machines (3)
Fundamental skills, speed, and accuracy of transcription on electronic equipment. Prerequisites: OFAD 152, 264 or consent of instructor. (Fall/Spring)

OFAD 244 Legal Procedures (3)
American court systems, branches of civil and criminal law, and secretarial procedures relating to ethical behavior and office management techniques in a law office. Includes practice in preparing legal forms and documents with emphasis on speed, accuracy, and mailability, and procedures to help develop confidence and poise necessary in a professional office. Prerequisite: typing proficiency. (Fall)

OFAD 264 Beginning Word/Information Processing (3)
Introduces word/information processing concepts, functions, and terminology; provides an overview of the document production cycle with related hardware and software; provides in-depth, hands-on experience with a leading microcomputer word processor. Such features as creating a document, revising, formatting, paginating, merging, document assembly, disk management, and other relevant features will be covered. Two to three hours per week of arranged laboratory is required in addition to regularly scheduled classes. Prerequisites: typing proficiency or concurrent enrollment in OFAD 152. (Fall/Spring)

OFAD 265 Intermediate Word/Information Processing (3)
Continuation of OFAD 264. Provides hands-on experience with the more advanced features of word processing, including graphics and desktop publishing. Prerequisite: OFAD 264. (Fall/Spring)

OFAD 266 Word/Information Processing: Document Production (4)
Office standards examined and applied to the production of business documents on microcomputers and electronic typewriters; document analysis procedures and productivity measurement techniques presented with emphasis on decision-making and problem-solving. Prerequisites: OFAD 152 and 264 or consent of instructor. (Fall/Spring)

OFAD 270 Office Automation: Microcomputer Applications (3)
Microcomputer applications used in the office automation environment, including accounting applications, integrated software (word processing, spreadsheets, data base, graphs), desktop managers, graphics, telecommunication, electronic mail; hands-on experience according to student's major and software availability. Arranged laboratory is required in addition to regularly scheduled classes. Prerequisites: OFAD 101 or equivalent. (Fall)

OFAD 271 Office Automation: Procedures and Technologies (2)
Concepts of office automation through the integration of technology, procedures, and people; procedures of the traditional office contrasted with those of the evolving automated office in relation to both document production skills and administrative support functions; emphasis on decision-making and problem-solving skills needed in the evolving automated office environment. Prerequisites: OFAD 264. (Spring)

OFAD 295 Independent Study (1,2)

OFAD 296 Topics (1,2,3)

OFAD 298 Related Work Experience (1,2)
See ACCT 298. (Fall/Spring)

OFAD 299 Internship **(6,12)**
On-the-job office occupations training for a minimum of 17 hours per week for six semester hours credit in a two-year program and 34 hours per week for 12 semester hours credit in a four-year program at an approved work station in the business community. Job placement is on the basis of the student's program of study and employment goals. Prerequisites: sophomore standing and consent of instructor. (Fall/Spring)

PSYCHOLOGICAL COUNSELING AND GUIDANCE

School of Social and Behavioral Sciences

PCGU 320 Career Development **(3)**
Theories of, and factors influencing, career development such as assessment, career maturity, decision making, problem solving, and planning. Current developments in adult career and life development will be discussed including life stages, transitions, midlife crisis, stress, and adjustments necessary for career development effectiveness. Prerequisites: PSYC 121,122. (Fall)

PCGU 324 Career Counseling **(3)**
Types and sources of career information and its various uses in career counseling with special emphasis on decision making theories and processes. Prerequisites: PSYC 121,122. (Fall)

PCGU 395 Independent Study **(1-3)**

PCGU 396 Topics **(1-3)**

PCGU 420 Counseling Processes and Techniques **(3)**
Counseling principles and practices which facilitate interpersonal communication and effective personal and social development. Counseling skills in attending behavior, listening, problem exploration, responding, understanding, and modes of action are examined, discussed and applied in classroom counseling situations. Prerequisites: PSYC 121,122. (Spring)

PCGU 422 Interviewing Techniques **(3)**
Interviewing methods in classroom situations. Topics include various types of interviews used in personnel and management situations, questioning techniques, and interpretation of interview findings. Counts as management course for all BBA candidates. Prerequisites: PSYC 121, 122. (Spring)

PCGU 424 Group Processes **(3)**
Group procedures and processes for helping others to develop self-understanding and other personal and social skills. Prerequisites: PSYC 121,122/SPCH 101 recommended. (Spring)

PCGU 495 Independent Study **(1-3)**

PCGU 496 Topics **(1-3)**

PCGU 497 Practicum **(4)**
Interpersonal training and counseling practice under professional supervision. A typed paper/journal must be submitted for approval and course credit. Prerequisite: senior status and consent of instructor. Practicum must be arranged for the semester prior to enrollment. (Fall/Spring/Summer)

PCGU 499 Internship **(4)**
Counseling experience in external field locations according to needs and career goals of the student. A typed paper/journal must be submitted for approval and course credit. Prerequisite: consent of instructor. Internship must be arranged for the semester prior to enrollment. (Fall/Spring/Summer)

PHILOSOPHY

School of Humanities and Fine Arts

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.

§PHIL 251 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. (Every third semester)

§PHIL 252 History of Philosophy II (3)
Continuation of PHIL 251, with topics as seen through thinkers of the modern period, such as Hobbes, Berkeley, Kant, Nietzsche, and the Existentialists. (Every third semester)

§PHIL 275 Introduction to Logic (3)
Forms of reasoning, valid versus fallacious inferences, strong versus weak arguments. Designed to increase the ability to reason clearly and correctly and follow and critically evaluate the reasoning of others. (Fall/Spring)

PHIL 352 Ethics (3)
Introduction to theoretical and applied Ethics. Major moral philosophers and moral theories are surveyed; a general approach to moral reasoning is developed. This is then applied to the discussion of recent writings on such issues as euthanasia, abortion, war, capital punishment, affirmative action, etc.

PHIL 353 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. (See SOCI 351) (Fall)

PHIL 354 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, critiquing the effectiveness of these ideas for a social science capable of meeting the problems of modern society. Prerequisite: SOCI 351 or PHIL 353 or consent of instructor. (See SOCI 352.) (Spring)

PHIL 375 Twentieth-Century Philosophy (3)
The main philosophical themes and schools of recent philosophy. Characteristic methods and positions of such schools as Pragmatism, Phenomenology, Existentialism, and various Analytic Movements — especially as they bear on central philosophical problems regarding truth, meaning, knowledge of the external world, and the relationship between language and reality. Prerequisites: 6 hours in Philosophy or allied studies. (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)

PHYSICAL EDUCATION

School of Social and Behavioral Sciences

ACADEMIC

PHYA 200 Introduction to Physical Education (1)
An orientation to the breadth, scope, history, and nature of the professional program in physical education. Required of all physical education majors. (Fall)

The following series of courses is designed to acquaint prospective physical educators and recreators with the skills, instructional procedures, techniques, and progressions of selected sports normally taught in the public schools and in recreational facilities.

PHYA 211 Fundamentals of Swimming (On demand) (1)
PHYA 212 Methods of Movement (Fall) (1)
PHYA 213 Methods of Physical Fitness (Spring) (2)
PHYA 214 Methods of Tumbling (Fall) (1)
PHYA 215 Methods of Softball (Spring) (2)
PHYA 216 Methods of Flag Football and Basketball (Fall) (2)
PHYA 217 Methods of Handball and Racquetball (Spring) (2)
PHYA 218 Methods of Personal Defense (Spring) (2)
PHYA 219 Methods of Ballroom Dancing (Fall) (2)
PHYA 220 Methods of Folk and Square Dance (Spring) (2)
PHYA 221 Methods of Apparatus Gymnastics (Fall) (2)
PHYA 223 Methods of Volleyball (Fall) (2)
PHYA 224 Methods of Golf (Spring) (2)
PHYA 225 Methods of Tennis (Fall) (2)
PHYA 226 Methods of Badminton and Archery (Spring) (2)
PHYA 227 Methods of Track and Field (Spring) (2)
PHYA 228 Methods of Soccer and Speedball (Fall) (2)
PHYA 231 Methods of Bowling (Fall) (2)
PHYA 232 Methods of Wrestling (Spring) (2)
PHYA 233 Methods of Weight Training (Spring) (2)

PHYA 234 Care and Prevention of Athletic Injuries (2)
Procedures and techniques involved in preventing and treating common injuries associated with competitive athletics. (Fall)

The following series of courses is designed to acquaint students with the rules and procedures of officiating selected competitive sports.

PHYA 240 Sports Officiating — Football (Fall) (1)
PHYA 241 Sports Officiating — Basketball (Fall) (1)
PHYA 242 Sports Officiating — Volleyball (Fall) (1)
PHYA 243 Sports Officiating — Wrestling (Fall) (1)
PHYA 244 Sports Officiating — Gymnastics (On demand) (1)
PHYA 245 Sports Officiating — Baseball and Softball (Spring) (1)
PHYA 246 Sports Officiating — Track and Field Events (Spring) (1)

PHYA 250 Lifeguard Training (2)
An American Red Cross course leading to certification of qualified students. Prerequisites: Standard first aid and CPR or consent of instructor. (Fall)

PHYA 251 Water Safety Instructors Course (2)
An American Red Cross course leading to certification of qualified students. Prerequisite: Lifeguard Training Certificate. (Spring)

PHYA 253 Beginning Improvisation and Composition in Dance (3)
Theory and practice in basic principles of dance composition. (Spring)

PHYA 256 Creative Play Activities in Movement (2)
For students who will be working with young people. Emphasis is placed on creative movement exploration through the Laban series of body, effort, space and relationship. (Spring)

PHYA 257 Repertory Dance (1)
Student participation in the production of a dance choreographed by faculty or guest artist. Prerequisite: consent of instructor. (Spring)

PHYA 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. (Spring)

PHYA 265 Standard First Aid and Cardio-Pulmonary Resuscitation (3)
Knowledge and skills required to meet the needs of most emergency first aid and CPR situations. (Fall/Spring)

PHYA 276, 277 Theory and Practice in Ballet (1,1)
Intermediate to advanced work in theory and practice of Ballet for dance students. Prerequisites: PHYE 176, 177 or THEA 121, 122. (Fall/Spring)

PHYA 280, 281 Theory and Practice of Modern Dance (1,1)
Intermediate to advanced work in theory and practice of modern dance for dance students. Prerequisites: PHYE 170, 171 or THEA 123, 124. (Fall/Spring)

PHYA 297 Practicum (1)
Supervised assistantship with physical educators or recreation practioners. (Fall/Spring)

PHYA 297B Choreography Practicum I (1)
Student practice in choreographing and producing an original dance work. Prerequisites: PHYA 253 or THEA 222 or consent of instructor. (Fall/Spring)

PHYA 301 Tests and Measurements in Physical Education (2)
Modern testing and evaluation programs applied to physical education including biological, neuromuscular, personal, social, and interpretive development. Prerequisite: PHYA 200. (Spring)

PHYA 302 Advanced Athletic Training Principles (3)
Lectures and laboratory presentations relative to physical aspects of Sports Training; rehabilitation, nutrition, prevention, evaluation and injury management. The medical aspects of sports are emphasized. Prerequisites: PHYA 234, and BIOL 141 or consent of instructor. (On demand)

PHYA 307 Philosophy and Psychology of Coaching (2)
Fundamental philosophical and psychological principles related to coaching competitive athletic teams. (Spring)

PHYA 309 Anatomical Kinesiology (2)
The mechanics of sport-related human movement through a study of selected physical, anatomical, and physiological factors affecting human performance. Prerequisites: BIOL 141, 141L, PHYA 200. (Fall)

The following is a series of courses designed to acquaint students with fundamental techniques, movements, strategies, patterns, and ethics of selected competitive athletics. Prerequisites: comparable methods course for each or consent of instructor.

PHYA 310 Sports Theory — Football (Spring) (2)
PHYA 311 Sports Theory — Basketball (Fall) (2)
PHYA 312 Sports Theory — Wrestling (Spring) (2)
PHYA 313 Sports Theory — Baseball and Softball (Spring) (2)
PHYA 314 Sports Theory — Track and Field Events (Spring) (2)
PHYA 315 Sports Theory — Volleyball (Fall) (2)

PHYA 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)

PHYA 321 Repertory Dance (1)
Student participation in the production of a dance choreographed by faculty or guest artist. Prerequisite: consent of instructor. (Spring)

PHYA 324 Dance Production (2)
Analysis and practice in elements of publicity, lighting, costuming, and makeup for dance. Places emphasis on the non-traditional forms of dance production. (Fall)

PHYA 326 Methods of Teaching Ballet and Modern Dance (3)
Theory and application of methods of teaching ballet and modern dance. Prerequisites: PHYA 276 or 277 and PHYA 280 or 281. (On demand)

PHYA 370 Biomechanics (2)
PHYA 370L Biomechanics Laboratory (1)
Application of the principles of mechanics, physics, and mathematics to the analysis of sport activities, and the selection and teaching of motor skills through the application of methods and concepts of motion analysis. Primarily for physical educators, recreation therapists, and athletic coaches. Prerequisites: BIOL 141, 141L, PHYA 212, 309. (Spring)

PHYA 371 Advanced First Aid (3)
Training, skills, and knowledge needed in sickness and injury emergencies. (Spring)

PHYA 375 Organization and Administration of Intramurals (2)
Sports tournaments, units of competition, scoring systems, and coordination of intramural sports in physical education and athletic programs. (Fall)

PHYA 395 Independent Study (1-3)

PHYA 396 Topics (1-3)

PHYA 397 Choreography Practicum II (1)
Student practice in choreographing and producing an original dance work. Prerequisites: PHYA 253, 297B or THEA 222 or consent of instructor. (Fall/Spring)

PHYA 401 Legal Considerations in P.E. and Sports (2)
Introduction for Physical Educators, Coaches, and those who teach in the recreational setting to their legal duties and responsibilities. (Spring)

PHYA 403 Physiology of Exercise (2)
PHYA 403L Physiology of Exercise Laboratory (1)
The effects of various types of exercise upon human body structure and function. Prerequisite: PHYA 213 and BIOL 141, 141L. (Fall)

PHYA 407 Organization, Administration and Curriculum Development in Physical Education (3)
Organizational structures and administrative techniques in physical education, athletic, and intramural sports programs. Prerequisite: PHYA 200. (Fall)

PHYA 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)

PHYA 421 Repertory Dance (1)
Student participation in the production of a dance choreographed by faculty or guest artist. Prerequisite: consent of instructor. (Spring)

PHYA 472 Adaptive Physical Education and Recreation for Physically Disabled (3)
Physical activity, its modification and adaptation for the physically and mentally disabled participant. Prerequisites: PHYA 200 or RECR 210, or consent of instructor. (Spring)

PHYA 495 Independent Study (1-3)

PHYA 496 Topics (1-3)

PHYA 497 Choreography Practicum (1)
Student practice in choreographing and producing an original dance work. Prerequisites: PHYA 253, or THEA 222, or consent of instructor. (Fall/Spring)

ACTIVITY

The following courses meet the physical education requirement for graduation. Each 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.

(1 each)

PHYE 101 Beginning Swimming
PHYE 102 Intermediate Swimming
PHYE 103 Diving
PHYE 104 Water Polo
PHYE 106 Scuba
PHYE 108 Canoeing
PHYE 110 River Rafting
PHYE 112 Hiking
PHYE 113 Beginning Bowling
PHYE 114 Intermediate Bowling
PHYE 115 Beginning Golf
PHYE 116 Intermediate Golf
PHYE 117 Badminton
PHYE 119 Archery
PHYE 121 Beginning Tennis
PHYE 122 Intermediate Tennis
PHYE 123 Racquetball
PHYE 124 Intermediate Racquetball
PHYE 125 Handball
PHYE 127 Physical Conditioning
PHYE 128 Intermediate Weight Training
PHYE 129 Weight Training
PHYE 130 Fitness
PHYE 132 Aerobics
PHYE 133 Skiing
PHYE 135 Cross-Country Skiing
PHYE 137 Horseback Riding
PHYE 139 Roller Skating
PHYE 141 Bicycling
PHYE 143 Orienteering
PHYE 145 Wrestling
PHYE 147 Track and Field
PHYE 149 Gymnastics
PHYE 152 Softball
PHYE 154 Beginning Baseball
PHYE 155 Intermediate Baseball

PHYE 156	**Soccer**	**PHYE 171**	**Intermediate Modern Dance**
PHYE 158	**Speedball**	**PHYE 172**	**Square Dance**
PHYE 160	**Field Hockey**	**PHYE 173**	**Folk Dance**
PHYE 162	**Volleyball**	**PHYE 174**	**Social Dance**
PHYE 163	**Intermediate Volleyball**	**PHYE 175A**	**Modern Jazz Dance I**
PHYE 164	**Beginning Basketball**	**PHYE 175B**	**Modern Jazz Dance II**
PHYE 165	**Intermediate Basketball**	**PHYE 176**	**Beginning Ballet**
PHYE 166	**Flag Football**	**PHYE 177**	**Intermediate Ballet**
PHYE 168	**Hatha Yoga & Relaxation I**	**PHYE 178**	**Tap Dance**
PHYE 169	**Hatha Yoga & Relaxation II**	**PHYE 179**	**Dance Performance Group**
PHYE 170	**Beginning Modern Dance**		

Prerequisites for all "Intermediate" or Part II classes: the corresponding beginning course or consent of instructor.

PHYE Varsity Athletics **(1 each)**

PHYE 180, 280, 380, 480	**Varsity Football**
PHYE 181, 281, 381, 481	**Varsity Basketball**
PHYE 182, 282, 382, 482	**Varsity Baseball**
PHYE 183, 283, 383, 483	**Varsity Wrestling**
PHYE 184, 284, 384, 484	**Varsity Tennis**
PHYE 185, 285, 385, 485	**Varsity Volleyball**
PHYE 186, 286, 386, 486	**Varsity Softball**
PHYE ~~187, 287, 387, 487~~ 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 **PHYE** courses, the following apply:

Only one varsity sport activity course, numbered PHYE 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.

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.

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. (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)

§PHYS 111, 112 General Physics **(4,4)**
§PHYS 111L, 112L General Physics Laboratory **(1,1)**
A survey of physics fundamentals. Topics include mechanics, electricity, magnetism, thermodynamics, sound, optics, and modern physics. Problem solving is emphasized. Prerequisite: a mastery of algebra and trigonometry. Four lectures and one two-hour laboratory per week. (Fall/Spring)

§PHYS 121 Classical Physics I (4)
First of a series of foundation physics courses for scientists and engineers. Newtonian mechanics is used to model the behavior of matter. Principles of particle motion are discussed in the context of momentum and energy conservation laws. Specific force laws are used to analyze problems drawn from engineering, biology, astronomy and atomic physics. Galilean relativity is discussed and special relativity introduced. Cultural as well as philosophical and practical aspects of physics are examined. The language of calculus and vector spaces is used throughout. Corequisite: MATH 151. (Fall/Spring)

§PHYS 122 Classical Physics II (4)
§PHYS 122L Experimental Mechanics Laboratory (1)
A continuation of PHYS 121 primarily concentrating on many-particle systems and matter in bulk. General conservation laws are developed and used to analyze collisions. Further applications are made to rigid body dynamics, oscillations, and wave motion. Elastic solids and fluids are discussed. Special relativity is studied. The course concludes with an introduction to thermodynamics and statistical mechanics. Corequisite: MATH 152. Prerequisite: PHYS 121. Four lectures and one two-hour laboratory per week. (Fall/Spring)

PHYS 223 Classical Physics III (3)
PHYS 223L Experimental Electromagnetism Laboratory (1)
A foundation course in electromagnetic theory. The field concept is introduced with static electric and magnetic fields, both in free space and in matter. Electrodynamics is developed, including a discussion of Kirchoff's laws and circuit concepts. The course concludes with Maxwell's equations and a discussion of radiation. Laboratory work concentrates on the properties of fields and charged matter and on the experimental foundations of optics. Elementary electronic circuit design is included. Three lectures and one two-hour laboratory per week. Corequisite: MATH 253. Prerequisite: PHYS 122. (Spring)

§PHYS 224 Modern Physics (3)
An introduction to relativity and quantum theory. Applications of the theory are chosen from atomic and nuclear physics and from solid-state physics. The course concludes with a discussion of quarks, leptons, and the unification of force. Prerequisite: PHYS 122. (Fall)

PHYS 311 Electromagnetic Theory (3)
A mature study of electromagnetic fields. The course begins with a review of Maxwell's equations. Static fields are next analyzed and multipole expansion techniques exploited. Fields in dielectric and magnetic materials are then examined, and capacitance and inductance introduced. Electrodynamics is developed, along with concepts of field momentum and energy. The role of special relativity is emphasized. Electromagnetic wave propagation and radiation are the concluding topics of the course. Vector analysis in both integral and differential forms is used throughout. Prerequisites: PHYS 223, PHYS 223L, MATH 260. (Fall, alternate years)

PHYS 321 Quantum Theory I (3)
A foundation course in quantum physics. No prior background in modern physics is assumed of students. The failure of classical physics is first discussed, with particular attention given to thermal radiation, photons, the Rutherford-Bohr atom, and the de Broglie wave hypothesis. The Schroedinger wave theory for single particles is then used to introduce modern concepts. Measurement theory, wave packets, square-well potentials and harmonic oscillators are examined in a one-dimensional context. The time-dependent and stationary-state formalisms are both developed. The entire subject is set in the frame-work of Hilbert space, and operator algebra is used throughout. Prerequisites: PHYS 223 and MATH 260. (Spring)

PHYS 322 Quantum Theory II (3)
A continuation of PHYS 321. Quantum theory is extended to three dimensions. Symmetry principles are introduced. Angular momentum conservation is discussed and particle spin defined. The quantum theory of many-particle systems is then studied, with particular attention given to simple atoms. Fermi-Dirac and Bose-Einstein statistics are introduced. Perturbation theory is developed and applied to the study of atoms and their interaction with radiation. A brief discussion of quantum field theory concludes the course. Prerequisite: PHYS 321. (Fall)

PHYS 331, 332 Junior Laboratory I, II (2,2)
A course in experiment design and technique. Laboratory investigations provide experience in instrumental methods, planning of laboratory experiments, data analysis, preparation of reports according to professional standards, and training in the use of microprocessors for data acquisition and processing. The experiments to be performed are selected from electromagnetism, atomic, nuclear, solid-state, and high-energy physics. Prerequisites: PHYS 223 and 223L. Two two-hour laboratories per week. (Fall/Spring)

PHYS 352 History and Philosophy of Physics (3)
Material varies from year-to-year. The course addresses problems in the interpretation and development of physics. Case studies of crucial experiments are analyzed. The interaction of physics with other philosophical and cultural pursuits is discussed. Prerequisite: one year of physics or consent of instructor. (Fall/Spring, on demand)

PHYS 362 Statistical and Thermal Physics (3)
A study of the physics of bulk matter. Beginning with fundamental principles of quantum mechanics, statistical methods are employed to explain the macroscopic laws of thermodynamics and to make detailed predictions about the large-scale behavior of solids, liquids, and gases. Applications include the specific heat of solids, thermal radiation, magnetic susceptibilities, stellar equilibrium and chemical reactions. Corequisite: MATH 260. Prerequisite: PHYS 122. (Spring)

PHYS 395 Independent Study (1-3)

PHYS 396 Topics (1-3)

PHYS 421 Advanced Dynamics (3)
A survey of analytical methods in classical physics. The Lagrangian formulation of mechanics is used to examine various applications, including rigid-body motion, celestial mechanics, and collision theory. Symmetry principles and accompanying conservation laws are introduced. The course concludes with an introduction to Hamilton's equations and field theory. Prerequisites: PHYS 223 and MATH 260. (Fall, alternate years)

PHYS 432 Nuclear and High-Energy Physics (3)
An introduction to the structure and interactions of nuclear and subnuclear particles. Topics include a survey of the intrinsic properties of nuclei, descriptions of various nuclear models, studies of radioactivity and nuclear reactions, and an overview of the technologies of high-energy accelerators and detectors. The course concludes with an introduction to the properties and structures of elementary particles and discussions of current developments in unified theories of force. Prerequisite: PHYS 322. (Spring, on demand)

PHYS 441 Solid State Physics (3)
The structure and properties of solids. This course is a study of the crystalline state of matter, including crystal classifications, vibrational specific heats, electronic structures and conductivities, cohesive energies, magnetic susceptibility, and optical properties. Prerequisite: PHYS 322. (Spring)

PHYS 482 Senior Research (1)
An individual research project, supervised by a faculty adviser. The project may be selected from experimental or theoretical physics. The research concludes with a formal report written in accordance with the American Institute of Physics Style Manual. Normally taken in the second semester of the senior year. Prerequisite: senior standing and consent of instructor. One one-hour consultation per week. (Fall/Spring, on demand)

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 Social and Behavioral Sciences

§POLS 101 American Government (3)
The framework and functions of the national government with some attention to civil rights and foreign policy. (Fall/Spring)

§POLS 110 Development of the American Constitution (3)
Historical overview of the making of the U.S. Constitution, including examination of early documents and philosophies that influenced the writers of the document. Prerequisite: POLS 101. (Spring)

POLS 250 Parliamentary Procedure (2)
A study of parliamentary procedure based on Robert's Rules of Order. The course includes the study of the process, history, development, and limited practice of parliamentary procedure. (Fall/Spring)

§POLS 256 State and Local Government (3)
The development, organization, and operation of state and local governments in the United States. Prerequisites: POLS 101. (Fall)

§POLS 261 Comparative Politics (3)
Introduction to conceptual models and approaches utilized in the comparative study of nations and their politics. Application of these theories to selected democratic, communist, and developing political systems. Prerequisites: POLS 101 or HIST 102. (Fall)

POLS 302 World Politics (3)
Introduction to the structures, processes, and behaviors shaping the world political configuration. Emphasis on states and their interactions as well as non-state actors and the cultural, economic and environmental forces, issues, and resources influencing an emerging world community. Prerequisites: POLS 101 or HIST 102. (Spring)

POLS 310 Constitutional Law (3)
Selected decisions of the Supreme Court of the United States emphasizing recent cases involving freedom of religion and speech, equal protection of the laws, and criminal procedure. Prerequisite: 6 hours of political science. (Spring)

POLS 312 Public Administration (3)
Historical development of public administration including organizational structure and theory, management, personnel administration, fiscal administration, and administrative responsibility. Prerequisites: POLS 101. (Fall)

POLS 313 Political Parties and Pressure Groups (3)
Development of political parties and interest groups in the United States and their role in contemporary politics. Includes focus on elections, voting behavior, and the dynamics of public opinion. Prerequisites: POLS 101 or consent of instructor. (Fall)

POLS 350 American Political Thought (3)
Political ideas, theories, and concepts that have shaped American political institutions. Prerequisites: POLS 101, or equivalent, or consent of instructor. (Spring)

POLS 361 Government and Politics of Western Europe and the Soviet Union (3)
Study of the political systems of Great Britain, Federal Republic of Germany, Soviet Union and other West European nations. Emphasizes political development, the sources, processes and evaluation of policy making, and contemporary challenges facing these countries. Prerequisite: POLS 261. (Alternate Spring)

POLS 395 Independent Study (1-3)

POLS 396 Topics (1-3)

POLS 399A Internship: Washington, D.C. (15)
Conducted in Washington, D.C., in cooperation with the Washington Center for Learning Alternatives. Students do formal academic study in conjunction with intern assignments in congressional offices, executive agencies, and the Justice Department. Prerequisites: six hours of political science and consent of program coordinator. (Fall/Spring)

POLS 399B Internship: State Legislature (9)
Conducted in Denver in cooperation with Metropolitan State College. Students are assigned as interns with state legislators and work on the floor of the State House of Representatives and the State Senate. Students are encouraged to enroll in one or two courses at Metropolitan State College concurrent with the internship. Prerequisites: upper division standing, six hours of political science, and consent of instructor. (Spring)

POLS 402 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.

POLS 410 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 420 The American Court System (3)
The American court system; local, state, and national, including consideration of the impact of prosecutors, defense personnel, judges, and other factors on court decisions and the criminal justice system. (Spring, alternate years)

POLS 422 Political Theory: Classical and Medieval (3)
POLS 423 Political Theory: Modern (3)
Study of the development of political theory in the Western tradition. Emphasizes the teaching of main thinkers: Socrates, Plato, Aristotle, Augustine, Aquinas, More, Machiavelli, Hobbes, Locke, Rousseau, Mill, and Marx. Develops ideas in relation to historical and cultural contexts, textual consistency, and the evolving tradition of political discourse in Western civilization. (Fall/Spring)

POLS 450 The Legislative Process (3)
A study of the legislative process emphasizing the U.S. Congress. Attention will be given to the development of legislative systems, the operation of legislatures, the election of legislators, and a comparison with legislatures in other national states. Prerequisites: POLS 101 or consent of instructor. (Spring)

POLS 490 Senior Seminar for Political Science (3)
Arranged tutorials and seminars with political science faculty and students, design and execution of a research project, and submission of a senior thesis. Prerequisites: senior standing. (Fall/Spring)

POLS 495 Independent Study (1-3)

POLS 496 Topics (1-3)

PSYCHOLOGY

School of Social and Behavioral Sciences

§PSYC 121, 122 General Psychology (3,3)
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 210 Environmental Psychology (3)
Principles and findings of general psychology applied to the challenge of mankind's living in the environment. Prerequisites: PSYC 121, 122 or consent of instructor. (Fall)

§PSYC 220 Psychology of Women (3)
Historical and theoretical considerations in the understanding of women's psychology in areas of physiology, love, work, friendship, marriage, and psychological relationships. (Fall)

§PSYC 233 Human Growth and Development (3)
Developmental principles, ages and stages of the life span, and adjustment techniques. Not intended for behavioral science majors. (Fall/Spring)

PSYC 310 Child Psychology (3)
A study of the principles of human development and psychology from conception to puberty. Prerequisites: PSYC 121, 122. (Spring)

PSYC 311 Quantitative Research Methods (3)
Application of statistics in psychological research with an emphasis on the selection of appropriate quantitative techniques, computer analysis of data, and interpretation of statistical results within the context of the research endeavor. Topics to be covered include descriptive statistics, hypothesis testing, parametric and non-parametric statistics. Prerequisites: PSYC 121, PSYC 122, STAT 200. (Spring)

PSYC 312 Experimental Psychology (2)
PSYC 312L Experimental Psychology Laboratory (2)
Fundamentals of experimental methodology. Application of principles of laboratory research in areas of psychophysics, learning and memory, and biofeedback. Formal reports of projects required. Prerequisites: PSYC 121, 122, Stat 200. (Spring)

PSYC 314 Psychology of Learning (2)
PSYC 314L Psychology of Learning Laboratory (2)
Classic and modern explanations of the phenomena of learning in both lower animals and humans. Laboratory experiments in classical and operant conditioning with formal scientific reports required. Prerequisites: PSYC 121, 122, STAT 200, consent of instructor. (Fall)

PSYC 320 Social Psychology (3)
Social influences upon behavior with consideration given to topics such as: social perception, attitude formation and change, communication, and leadership. (Fall)

PSYC 322 Motivation (3)
Classical and contemporary psychological explanations of forces that originate, direct, and sustain human behavior. Prerequisites: PSYC 121, 122, 314. (Spring)

PSYC 330 Adolescent Psychology (3)
Principles of human physiological and psychological development from puberty through young adulthood. Prerequisites: PSYC 121, 122. (Fall)

PSYC 332 Individual and Group Differences (3)
The ways and extent to which individuals and groups differ from one another and of the factors responsible for those differences. (On demand)

PSYC 340 Abnormal Psychology (3)
Concepts related to psychopathology and personality disorders including functional causation, general psychological theory, and behavior deviation patterns. Prerequisites: PSYC 121, 122. (Fall)

PSYC 350 Psychology of Aging (3)
Problems of aging in physiological, social, and psychological perspectives with attention to such problems as health, housing, interpersonal relationships, finances, mobility, retirement, and death. Prerequisites: PSYC 121, 122. (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: PSYC 121, 122, STAT 200. (Fall)

PSYC 412 Industrial and Organizational Psychology (3)
Psychological principles applied to formal, productive organizations such as businesses, governments, and schools. Personnel selection, placement, training, evaluation, motivation to work, job satisfaction, and morale are examined. Counts as a management course for BBA candidates. Prerequisites: PSYC 121, STAT 200, or consent of instructor. (Spring)

PSYC 414 Systems and Theories of Psychology (3)
Systems and theories of modern psychology and the development of scientific psychology since 1879. Prerequisites: PSYC 121, 122 or at least 12 semester hours upper division psychology course work or consent of instructor. (Spring)

PSYC 416 Memory and Cognition (3)
Study of the mental processes that underlie our abilities to recognize stimuli, think, remember, learn language, and solve problems. Current research in each of these areas will be discussed. Includes a research paper written in APA style. Prerequisites: PSYC 121, 122 or consent of instructor. (Spring)

PSYC 420 Personality (3)
Personality theories from the time of Freud through the present emphasizing the development and functioning of the normal personality. Prerequisites: PSYC 121, 122. (Spring)

PSYC 422 Experimental Approaches to Sensation and Perception (3)
Visual and auditory information processing systems. Includes frequent classroom demonstrations and occasional experiments. Prerequisites: PSYC 121, 122, STAT 200. (On demand)

PSYC 430 Physiological Psychology (3)
The biological bases of the behaviors of the organism, emphasizing the structure and function of the nervous system. The role of biological factors in such behaviors as sleep, sexual behavior, drug addiction, emotion, etc. will be examined. Prerequisites: PSYC 121, 122; biology course recommended. (Spring)

PSYC 495 Independent Study (1-3)

PSYC 496 Topics (1-3)

RADIOLOGIC TECHNOLOGY

School of Nursing and Allied Health

RADT 110 Radiologic Introduction (3)
Overview of radiologic technology with emphasis on history, the health-care delivery system, ethics, professional conduct, organization and development, introduction to medical terminology, communications, body mechanics, asepsis, vital signs, and emergencies. This course also presents an introduction to the educational program and basic radiation protection. Prerequisite: acceptance into the Radiology Program.

RADT 121 Radiologic Technology I (2)
RADT 121L Radiologic Technology I Laboratory (1)
Instruction in every phase of radiologic technology in an integrated coverage of appendicular skeletal system, abdomen, thoracic viscera, and body systems. Radiographic anatomy and positioning are discussed and applied in the energized laboratory. Prerequisite: RADT 110.

RADT 122 Radiologic Principles I (2)
RADT 122L Radiologic Principles I Laboratory (1)
Fundamentals of factors which govern and influence the radiographic image receptor, equipment, accessory devices, exposure mathematics, manual and automatic processing. Technical and prime exposure factors are discussed and applied in the energized laboratory. Prerequisite: RADT 110.

RADT 123 Clinical Experience I (4)
Areas covered in RADT 121 and 122 emphasized. Includes one hour of film critique provided by the clinical instructor. Prerequisite: RADT 110.

RADT 125 Radiologic Science I (2)
Basic physics, fundamentals of x-ray generating equipment, x-ray production and interaction, beam characteristics, and units of measurement. Prerequisite: RADT 110.

RADT 131 Radiologic Technology II (2)
RADT 131L Radiologic Technology II Laboratory (1)
Continuation of RADT 121 with instruction in every phase of radiography of the axial skeleton, digestive system, urinary system, cranium, spinal column, and facial bones. Prerequisites: RADT 121, 121L, 122, 122L, 125.

RADT 132 Radiologic Principles II (2)
RADT 132L Radiologic Principles II Laboratory (1)
Continuation of RADT 122 including equipment utilized to produce diagnostic images, recording media and techniques, quality assurance and computer applications in diagnostic radiology. Prerequisites: RADT 121, 121L, 122, 122L, 125.

RADT 133 Clinical Experience II (4)
Continuation of RADT 123 in all phases of radiology. Includes one hour a week of film critique provided by the clinical instructor. Prerequisite: RADT 123 or consent of instructor.

RADT 135 Radiologic Science II (2)
Principles of radiation interaction in cells and the effect and factors affecting cell response to radiation, acute and chronic effects of radiation, maximum permissible dose, regulatory involvement, and radiation protection responsibilities by the radiographer to patients, personnel, and the public. Prerequisites: RADT 121, 121L, 122, 122L, 125.

RADT 243 Clinical Experience III (10)
Continuation of RADT 133 in all phases of radiology. Emphasis on material presented in RADT 121, 122, 131 and 132. Includes film critique provided by the clinical instructor or radiologist. Prerequisite: completion of all 100 level radiology courses.

RADT 251 Radiologic Technology III (3)
Special equipment, opaque media, radiographic anatomy, and pathology involved in specialized and highly technical procedures. Pharmacology is also covered. Prerequisite: all RADT 100 level lecture and laboratory courses.

RADT 253 Clinical Experience IV (10)
Continuation of RADT 243 in all phases of radiology. Includes film critique provided by the clinical instructor or radiologist. Prerequisites: RADT 243 or consent of instructor.

RADT 261 Radiologic Technology IV (3)
Departmental administration, radiologic records, and job-seeking skills. The last few weeks of this course are devoted to a review and preparation for the national registry examination. Prerequisites: all RADT 100 level lecture and laboratory courses.

RADT 263 Clinical Experience V (10)
Continuation of RADT 253 in all phases of radiology. Includes film critique provided by the clinical instructor or radiologist. Prerequisites: RADT 253 or consent of instructor.

RECREATION

School of Social and Behavioral Sciences

RECR 210 Introduction to Recreation and Leisure Services (3)
Scope of park and recreation service, history, and professional development as it relates to public, semi-public, private agency, military, and therapeutic recreation services. Required of all recreation majors. (Fall)

RECR 270 Recreation and Special Populations (3)
Recreation as a resource and tool for recreational personnel working with specific populations such as the mentally retarded, youth and adult offenders, mentally ill, alcoholics and drug addicts, physically disabled, visually impaired, economically deprived, racial minorities, and the aged. Prerequisite: RECR 210. (Spring)

RECR 380 Planning and Design of Park and Recreation Facilities (3)
Park and recreation areas and facilities (indoor and outdoor) with emphasis on planning, design, parkland acquisition, and development programs. Prerequisite: RECR 210. (Fall)

RECR 382 Camp Counseling (3)
Techniques of camp and outdoor recreation programming as it relates to public, resident, and day camps. Emphasis on counseling techniques of administration, program, and design. Field trip required. Prerequisite: RECR 210. (Fall)

RECR 384 Leisure in Contemporary Society (3)
Interpretation of recreation as a basic part of the living process, the importance of recreation in individual communities and the nation, and the growing importance of leisure time problems. (Spring)

RECR 386 Computer Applications in Recreation and Parks (3)
Use of the computer as a tool for processing leisure service data with emphasis placed on the application of computer systems to assist recreation and park professionals in the delivery of leisure services. Laboratory projects involving student use of the computer are required. Prerequisites: CISB 102 or consent of instructor. (Fall)

RECR 395 Independent Study (1-3)

RECR 396 Topics (1-3)

RECR 425 Outdoor Recreation Resource Management (3)
Resource management principles, practices, policies, and programs for a wide spectrum of public and private recreation areas and facilities; emphasis is placed on resource management policies of federal agencies including the National Park Service, Bureau of Land Management, and U.S. Forest Service. Prerequisites: RECR 210. (Fall)

RECR 470 Management and Operation of Golf Facilities (3)
Fundamentals of operative golf facilities with special emphasis on turf maintenance, concession facilities, equipment purchasing, sample bidding, lease proposals, legal liabilities, programming of lessons and tournaments, course design, pro shop and driving range operation. Prerequisite: RECR 210. (Fall)

RECR 480 Organization and Administration of Recreation and Leisure Services (3)
Modern theory and methodology of the administrative process including personnel management, revenue resources, budget and fiscal management, public relations, planning, evaluation, research, structure, organization, department manuals, and staff guidelines. Prerequisite: RECR 210. (Spring)

RECR 482 Management and Operation of Aquatic Facilities (3)
Procedures for effective management of swimming pools, wading pools, water fronts, ponds, lakes, and reservoirs for recreational use. Concentrates on lifeguard and instructional staff duties, maintenance materials and operation, pool chemistry, and winter sport use. Prerequisite: RECR 210. (Spring)

RECR 483 Supervision of Outdoor Recreation Activities (3)
Knowledge, skills, techniques, policies, and procedures related to selected outdoor recreation activities. Prerequisites: RECR 210, BIOL 113. (Spring)

RECR 484 Programs in Recreation and Leisure Services (3)
Methods of planning a balanced community recreation program emphasizing leisure counseling, survey and interest finding instruments, brochure construction, activity structures, advertising, and program promotion. Prerequisite: RECR 210. (Fall)

RECR 486 Recreation and Leisure Service Leadership and Supervision (2)
RECR 486L Recreation and Leisure Service Leadership and Supervision Lab (2)
Theory and application of leadership techniques, management styles, motivation programs, and problem solving. Such topics as recruitment, assignment, evaluation, and in-service training programs are considered. The student is expected to complete an on-the-job leadership or supervision project. Prerequisite: RECR 210. (Spring)

RECR 490 Senior Seminar in Recreation (3)
New and significant publication research, analysis, and assessment of personal and professional skills, new techniques and services, career opportunities, employment applications and processes, and internship preparation in recreation. Prerequisites: 24 hours of upper division recreation and leisure services courses. (Spring)

RECR 495 Independent Study (1-3)

RECR 496 Topics (1-3)

RECR 499 Internship (12)
Full time placement in a recreation and/or park agency to provide a smooth transition from the classroom to the work setting through first hand experience. The student is expected to complete a minimum of 600 clock hours in one or two agencies (300 hours each). Application must be made during the first four weeks of the semester prior to the semester in which the internship is planned. Prerequisites: RECR 210, 480, 482, 486, 499 and a 2.50 cumulative GPA. (Fall/Spring/Summer)

SOCIAL SCIENCE

School of Social and Behavioral Sciences

SOCI 199 Internship (1,2)
Social science students explore areas of interest through work experience in schools, public offices, human services agencies, etc. (Fall/Spring)

SOCI 310 Methods of Social Research (3)
Research methods and their application to the social sciences. Prerequisites: PSYC 121,122 or SOCO 260 and STAT 200. (Spring)

SOCI 340 Methods of Teaching Social Studies: Secondary Schools (3)
Examination and comparison of the social studies, exploring both new and traditional curricula, philosophies, and teaching methods. Prerequisites: upper division status, EDU 321 (Metro), 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. (Fall)

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. (Spring)

SOCI 395 Independent Study (1-3)

SOCI 396 Topics (1-3)

SOCI 495 Independent Study (1-3)

SOCI 496 Topics (1-3)

SOCIOLOGY

School of Social and Behavioral Sciences

§SOCO 144 Marriage and the Family (3)
Sociology of the marriage and family institutions in contemporary America. Includes an examination of important aspects of courtship and marriage, problems commonly experienced in contemporary man-woman relationships, parenting in modern America, and alternatives to traditional marriage. (Fall/Spring)

§SOCO 260 General Sociology (3)
Sociological concepts designed to acquaint students with terminology, basic principles, and important theories. Not open to freshmen. (Fall)

§SOCO 264 Social Problems (3)
Major contemporary social problems including crime, race relations, war, educational systems, unequal distribution of wealth, and political apathy. Prerequisite: Sophomore standing. (Spring)

SOCO 300 Political Sociology (3)
The interactions and interrelationships between social and political forces. Prerequisite: SOCO 260, or POLS 101, 102, or consent of instructor. (Spring)

SOCO 310 Sociology of Religion (3)
The social and cultural manifestations of religion giving attention to the insights of sociologists, recent studies, and contemporary social movements. Prerequisite: SOCO 260 or consent of instructor. (Fall)

SOCO 312 Collective Behavior and Popular Culture (3)
The dynamics of forming new social structures with emphasis on contrasting popular cultures and their structures with collective behavior models of the study areas. (On demand)

SOCO 314 Population Impact Problems and Urbanization (3)
Surveys population problems and theories of population growth, industrialization, and urbanization. (On Demand)

SOCO 316 Social Stratification (3)
Major theories regarding the causes and effects of the differential distribution of desirables by race, social class, and other variables. Prerequisites: SOCO 260 or consent of instructor. (Spring)

SOCO 330 Crime and Delinquency (3)
Crime, delinquency, and deviance including the social and psychological factors of such behavior, trends in theory, correctional procedures, control, prevention, and laws. Prerequisite: SOCO 260 or consent of instructor. (Fall)

SOCO 350 Sociology of Death and Dying (3)
A critical review of concepts and findings of social scientists and a semi-scientific review of literature dealing with death. (Fall)

SOCO 360 Social Influences of Small Groups (3)
Small-group processes in schools, peer groups, industry, and other selected institutions; small groups as related to the larger social system; group structure, communications, and the dynamics of social interaction. (On demand)

SOCO 395 Independent Study (1-3)

SOCO 396 Topics (1-3)

SOCO 400 History of Sociology (3)
The development of sociology as a discipline from early times to the present. Prerequisite: SOCO 260 or consent of instructor. (Fall)

SOCO 410 Contemporary Social Theory (3)
Sociological theories emphasizing 20th century contributions and the relationships of sociology to allied fields such as anthropology, psychology, economics, and political science. Prerequisite: SOCO 260 or consent of instructor. (Spring)

SOCO 495 Independent Study (1-3)

SOCO 496 Topics (1-3)

SPEECH

School of Humanities and Fine Arts

§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 231 Debate (3)
Research and development of various types of debate formats using national and international topics of current interest. (On demand)

SPCH 303 Nonverbal Communication (3)
The opportunity to observe, record and interpret the nonverbal dimensions of communication behavior and the opportunity to enhance awareness and skill in nonverbal communication behavior in mass media, law, theatre, group dynamics, etc. (Spring)

SPCH 304 Communication and Conflict (3)
The nature of conflict, conflict structure, conflict styles, and the use of "power" in conflicts. Application of theories to analyze and set goals to plan strategies and tactics. Study of intervention principles and practices. Prerequisites: upper division standing. (Alternate Spring)

SPCH 395 Independent Study (1-3)

SPCH 396 Topics (1-3)

SPCH 403 Teaching of Speech and Drama (3)
Teaching communication, speechmaking, debate and discussion, creative drama, oral interpretation, play selection and direction in the public schools. Prerequisite: junior standing in English education or speech/theatre programs. (Fall)

SPCH 495 Independent Study (1-3)

SPCH 496 Topics (1-3)

STATISTICS

School of Natural Sciences and Mathematics

§STAT 200 Probability and Statistics (3)
Statistics and statistical methods including analysis of data, elementary probability, binomial distribution, random sampling, normal distribution, t-distribution, regression and correlation, chi-square and F-distribution, and nonparametric methods. Prerequisite: MATH 110, 113 or consent of instructor. (Fall/Spring)

§STAT 214 Business Statistics (3)
Methods employed for the collection, description, and analysis of data for business decision making purposes including measures of central tendency and dispersion, probability, normal and t-distributions, estimation of parameters, one-sample tests of hypothesis, and linear correlation and regression. Prerequisite: MATH 113 or consent of instructor. (Fall/Spring)

STAT 311 Statistical Methods (3)
Simple and multiple analysis of covariance and nonparametric statistical techniques and design of experiments. Prerequisite: STAT 200 or 214, or consent of instructor. (Fall)

STAT 312 Correlation and Regression (3)
Graphical and numerical least-squares analysis for simple and multiple correlation and regression problems, both linear and curvilinear, time series and multivariate analysis. Prerequisites: STAT 200 or 214, or consent of instructor. (Spring)

STAT 313 Sampling Techniques (3)
Designs, simple random, cluster, stratified and systematic samples, systems of sampling, methods of estimation, sample size, and the minimized costs of sampling. Prerequisite: STAT 200 or 214, or consent of instructor. (Spring)

STAT 325 Design and Analysis of Experiments (3)
Design and analysis of single and multiple factor experiments including multiple comparison procedures, transformations, fixed, mixed and random effects designs, completely randomized designs, randomized block designs, Latin square designs, and nested designs. Prerequisite: STAT 311. (Alternate years)

STAT 395 Independent Study (1-3)

STAT 396 Topics (1-3)

STAT 450 Mathematical Statistics (3)
The mathematical development of discrete and continuous random variables including the underlying distributions, conditions, and marginal probability laws, sampling distributions and an introduction to the theory of estimations and hypothesis testing. Prerequisites: STAT 311, MATH 253. (Alternate years)

STAT 494 Seminar (1)
Discussions of specialized topics by students, faculty, or visiting professors. One-hour meeting per week. (On demand)

STAT 495 Independent Study (1-3)

STAT 496 Topics (1-3)

THEATRE AND DANCE

School of Humanities and Fine Arts

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 115 Problems in Modern Theatre (2)
Cultural enrichment through tours to theatrical centers such as New York, London, and other cities for the observance of professional productions of dramas, musicals, dance concerts, operas, or other forms of stage entertainment. Papers and discussions are used for evaluation. (On demand)

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 121, 122 Beginning and Intermediate Ballet (1,1)
Basic body control and technique. (Fall/Spring)

THEA 123, 124 Beginning and Intermediate Modern Dance (1,1)
Practical experience with movement techniques. Involves problem solving in shape, force, space, time, and relationship. (Fall/Spring)

THEA 125 Beginning Tap Dance (1)
A basic course in a popular rhythmic American dance form that combines movement and sound. (Spring)

THEA 127A Modern Jazz Dance I (1)
The concept of jazz as a dance form. See PHYE 175A. (Fall)

THEA 127B Modern Jazz Dance II (1)
Continuation of THEA 127A. See PHYE 175B. (Spring)

THEA 128, 129 Workshop in Theatre (1,1)
Specialized workshops in various aspects of theatre made possible by visiting artists and/or lecturers. (On demand)

§THEA 141 Theatre Appreciation (3)
Examination of basic presentation techniques of theatre, motion picture, television, and radio.

THEA 142 Make-Up (2)
All types of make-up for the stage. Students do straight and character make-up and learn the use of crepe hair, prosthesis, and other materials. (Fall/Spring)

THEA 143 Costuming (2)
Costume design, construction, and history of costume. (Fall/Spring)

§THEA 145 Introduction to Dramatic Literature (3)
Dramatic literature from the Greeks to the modern dramatists. (Spring)

THEA 147, 148 Drama Performance (1,1)
Requires a student to appear in a major production on campus. The grade will depend upon the preparatory work on the play's character and upon the final performance. (Fall/Spring)

THEA 167, 267, 367, 467 Music Theatre Performance (1)
THEA 168, 268, 368, 468 Music Theatre Performance (1)
A select group of singer/dancers performing for community, college functions and the annual Music Theatre Revues. Performers are encouraged to take MUSA 270, 271. Membership by audition or with consent of instructor. (Fall/Spring)

THEA 211 Creative Play Activities-Dance (2)
For students who will be working with children. Emphasizes creative movement exploration through the Laban theories of body, effort, space, and relationship. (Fall/Spring)

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 221 Repertory Dance (1)
Opportunities for participation in dance productions. Prerequisite: demonstration of movement proficiency, and consent of instructor. (Fall/Spring)

THEA 222 Improvisation and Composition Dance (3)
Theory and practice in the basic principles of dance composition. (Spring)

THEA 228, 229 Workshop in Theatre (1,1)
See THEA 128, 129. (On demand)

THEA 241 Oral Interpretation (3)
The reading aloud of prose, poetry, and essays with the intention of conveying the author's ideas to a listening audience. (On demand)

THEA 242 Properties (3)
Skills developed in property research, acquisition, construction, and application. (Fall)

THEA 243 Theatre Practice: Scene Construction, Painting, and Design (3)
Techniques of construction and painting of scenery and 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 I: Beginning Acting (3)
Fundamentals of acting through the use of improvisation and study of scenes. Students perform in solo, duo and/or group scenes. Laboratory includes participation in student-directed plays. Prerequisite: SPCH 112 or consent of instructor. (Fall)

THEA 252 Acting II: Stage Movement (3)
Basic techniques of gesture, movement styles and combat. Developing an awareness of the use of the body as a means of expression is emphasized. (Spring)

THEA 270 Introduction to Music Theatre (3)
All phases of the Musical Theatre Art, including song analysis, the relationship of words to the music, and performance techniques. Prerequisites: THEA 251. (Fall/Spring)

THEA 314 Summer Theatre (3)
See THEA 114.

THEA 315 Problems in Modern Theatre (2)
See THEA 115. (On demand)

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 321 Repertory Dance (1)
See THEA 221. (Fall/Spring)

THEA 324 Dance Productions (1)
Development of skills in analysis and practice in the elements of publicity, lighting, costuming, and make-up for dance. Nontraditional forms in dance production are emphasized. (Fall/Spring)

THEA 328, 329 Workshop in Theatre (1,1)
See THEA 128, 129. (On demand)

THEA 331 History of Theatre (3)
History of the theatre as an institution and its relationship to the other arts and to the social and economic environment. (Spring)

THEA 341 Musical Theatre History and Literature (3)
In-depth study of the literature and styles of the master composers of music theatre from its beginnings through the present day. Course work is designed for the Musical Theatre major, utilizing lecture and listening lab format and a research paper on a subject of the student's choice. (Spring)

THEA 343 Scene Design (3)
Experience in designing scenery for various types of productions with emphasis on drafting, perspective, and rendering techniques. 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 I (3)
Greek through Elizabethan drama. (Fall)

THEA 346 World Drama II (3)
Continuation of THEA 345 to the modern period. (Spring)

THEA 347, 348 Drama Performance (1,1)
See THEA 147, 148. (Fall/Spring)

THEA 351 Acting III: Stage Dialects (3)
The use of dialects in performances. Prerequisite: SPCH 112 or knowledge of the International Phonetic Alphabet and consent of instructor. (Spring)

THEA 352 Acting IV: Styles in Acting (3)
The various styles of acting used for the Classical, Elizabethan, Romantic, 19th century Melodrama, and realistic periods. (Fall)

THEA 370, 470 Music Theatre (2,2)
THEA 371, 471 Music Theatre (2,2)
Continuation of THEA 270. Advanced scene study, ensemble work, and choreography. Prerequisite: THEA 270, and audition. (Fall/Spring)

THEA 395 Independent Study (1-3)

THEA 396 Topics (1-3)

THEA 401 Theatre Management (3)
The business aspects of producing plays including publicity, dealing with agents, artists, union representatives, tickets, accounting procedures, and scheduling. Practical experience gained from working with college theatre. (Spring)

THEA 411 American Drama (3)
From the first American playwright to the plays of today. (Spring)

THEA 412 Contemporary Drama (3)
Realistic and absurd playwrights of the world within the past 35 years. (Fall)

THEA 414 Summer Theatre (3)
See THEA 114.

THEA 417, 418 Play Production (1,1)
See THEA 117, 118. Prerequisites: courses must be taken in sequence or by consent of the instructor. (Fall/Spring)

THEA 419, 420 Technical Performance (1,1)
See THEA 119, 120. (Fall/Spring)

THEA 428, 429 Workshop in Theatre (1,1)
See THEA 128, 129. (On demand)

THEA 445, 446 Senior Projects in Technical Theatre (3,3)
Work experience in various aspects of theatre such as scene design and construction, lighting design, sound, and/or costume design. (On demand)

THEA 447, 448 Drama Performance (1,1)
See THEA 147, 148. (Fall/Spring)

THEA 451 Beginning Directing (3)
The fundamentals of play production allowing the student to direct scenes for projects. To receive credit for this course, the student must also complete THEA 452. (Fall)

THEA 452 Advanced Directing (3)
Direction and production of a one-act play for public viewing. Prerequisite: THEA 451 or consent of instructor. (Spring)

THEA 455 Acting V: Advanced Acting (3)
For the serious acting student interested in polishing and refining the acting art through various techniques in the approach to a role. Prerequisite: THEA 251 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. Prerequisite: THEA 251 or consent of instructor. (Fall)

THEA 457 Acting VII: Auditions (3)
Writing of a 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. Prerequisite: THEA 251, 455, and/or consent of instructor. (On demand)

THEA 461 Experimental Directing (3)
Producing and directing a play using experimental methods of staging. Prerequisite: THEA 451, 452 or consent of instructor. (On demand)

THEA 495 Independent Study (1-3)

THEA 496 Topics (1-3)

THEA 499 Internship (3,6,9)
Work in acting/directing, design/tech, music theatre and theatre management, or other situations that meet the instructor's approval. Prerequisites: senior standing and consent of the instructors. (On demand)

TRAVEL & RECREATION MANAGEMENT

School of Business

TRAV 101 Travel Industry I (3)
Introduction to tourism and its relationship to the business world, an overview of all sectors of business and the components of the travel, tourism, and hospitality industry. Travel methods, destination resorts, and other businesses which serve the traveler are evaluated. A requirement for all Travel, Recreation, and Hospitality Management students. (Fall)

TRAV 102 Travel Industry II (3)
Evaluation of job opportunities in the travel, recreation, and hospitality fields. Travel trends, feasibility studies, and marketing techniques are analyzed. Students are provided an opportunity to make preparations and acquire skill instructions for work in the student's career objective. Field trips and visiting lecturers are included. Prerequisite: TRAV 101 or consent of instructor. (Spring)

TRAV 103 Travel and Tourism Marketing Techniques (3)
Interpretation of marketing problems, strategies, and techniques of industries engaged in serving the traveler, methods of identifying potential markets, preferences, and likely responses to promotional programs of private and governmental travel entities. Required of all Travel, Recreation, and Hospitality Management students. MARK 231 recommended for baccalaureate students. Prerequisite: TRAV 101 or consent of instructor. (Spring)

TRAV 199 Employment Concepts (1)
Introduction of the concepts of employment in conjunction with the internship experience. It will provide students with an opportunity to share their concerns with the instructor and other students, allow employers to discuss the internship with students and assist the student in developing his or her career goals. The student will enroll in this course the spring semester immediately preceding the summer they intend to do their TRAV 299 Internship. Prerequisites: TRAV 101. (Spring)

TRAV 201 Management in the Travel Industry I (3)
An opportunity to explore operating techniques and problems of the major industries involved in tourism, travel, and hospitality through the eyes of the operating manager. Specific skills used within various industries are developed. Prerequisite: TRAV 102 or consent of instructor. (Spring)

TRAV 211 Travel Destinations (3)
For the individual who plans to work, study, or travel internationally including the professional who is, or plans to be, part of the travel industry. Life styles and current local aspects in foreign destinations are considered and guest lecturers are included. Open to all students but strongly recommended for Travel, Recreation, and Hospitality Management students. (Spring/on demand)

TRAV 215 Computerized Reservations (3)
An introductory course providing an overview of operation of a computerized reservations system. Prerequisites: TRAV 101 and 102. (Spring)

TRAV 217 Hotel Operations (3)
Introductory course providing an overview of the operation of a hotel front office. This will include the use of the personal computer and state-of-the-art software for reservations, check-in, check-out and creating the daily report. Prerequisite: TRAV 101. (Fall)

TRAV 295 Independent Study (1,2)

TRAV 296 Topics (1,2,3)

TRAV 298 Related Work Experience (1,2)
See ACCT 298. (Fall/Spring)

TRAV 299 Internship (12)
Classroom studies combined with salaried work in an experience which relates to the student's career goal. Only for, and required of, Travel, Recreation, and Hospitality students. Credit not available through competency or challenge. Prerequisite: TRAV 102, GPA of 2.00 or higher, or consent of instructor. (Summer)

WELDING

School of Technology

WELD 110 SMAW I (1)
WELD 110L SMAW I Laboratory (7)
Safe use of equipment in shop practice; covers Shielded Metal Arc Welding mild steel in all positions. One hour lecture, eleven hours laboratory per week. (Fall/Spring)

WELD 112 Welding Theory (4)
Classroom instruction in the care and use of welding equipment, selection of the proper rods and processes, and safety as it applies to welding and welding equipment. Four hours per week. (Fall)

WELD 117 OFW and C I (1)
WELD 117L OFW and C I Laboratory (1)
Shop practice and skill development in safe use of Oxy-Fuel Welding/Cutting equipment. Basic Oxy-Fuel Welding on mild steel in flat and vertical positions is covered with some emphasis on oxy-fuel cutting of various thicknesses of mild steel plate. One hour lecture, one and one-half hours laboratory per week. (Fall/Spring)

WELD 118 OFW and C II (1)
WELD 118L OFW and C II Laboratory (1)
Continuation of WELD 117 with increased emphasis on shop practice in safe use of Oxy-Fuel Welding/Cutting equipment. Oxy-fuel welding and brazing, both ferrous and non-ferrous, on both pipe and plate in all practical thicknesses. One hour lecture, one and one-half hours laboratory per week. Prerequisites: WELD 117 or equivalent and consent of instructor. (On demand)

WELD 120 SMAW II (1)
WELD 120L SMAW II Laboratory (7)
Continuation of WELD 110. Skills for welding mild steel in all positions are refined. One hour lecture, eleven hours laboratory per week. Prerequisite: WELD 110 or consent of instructor. (Fall/Spring)

WELD 121 Blueprint Reading I (2)
The basic principles of blueprint interpretation and visualization of objects as applied to industry as well as the use and interpretation of welding symbols. Six hours per week; seven and one-half weeks. (Spring)

WELD 122 Blueprint Reading II (2)
Continuation of WELD 121 emphasizing working with shop drawings. Six hours per week; seven and one-half weeks. Prerequisites; Six hours per week; seven and one-half weeks. WELD 121 or consent of instructor. (Fall)

WELD 131 Fabrication Layout I (2)
Basic layout techniques from shop drawings to fabrication of sheet metal, plate, structural shapes, and pipe. Six hours per week; seven and one-half weeks. (Spring)

WELD 132 Fabrication Layout II (2)
Continuation of WELD 131. Six hours per week; seven and one-half weeks. Prerequisite: WELD 131 or consent of instructor. (Spring)

WELD 141 Shop Management and Structural Theory (4)
Shop operations, expenditures, floor-plan design, and equipment of the modern-day shop as well as various codes applied to industry. Four hours per week. (Fall)

WELD 145 Metallurgy (3)
Smelting, refining, and alloying with discussion of heat treating methods and the effects of welding on metals. Three hours per week. (Spring)

WELD 151 Industrial Welding (1)
WELD 151L Industrial Welding Laboratory (2)
Introductory level mild steel shielded metal arc welding (SMAW) and oxy-fuel methods. Instruction includes safety; equipment use; stick electrode welding in the flat, horizontal, vertical, and overhead positions. Oxy-fuel cutting, fusing, brazing and soldering, air arc, plasma arc, slice torch, build up and hard face are included. Five hours per week. (Fall)

WELD 210 GMAW (1)
WELD 210L GMAW Laboratory (2)
Safe use of GMAW equipment and shop practices. Covers GMAW on mild steel, alloy steel, and aluminum in all positions. One hour lecture and four hours laboratory per week. (Fall/Spring)

WELD 220 FCAW (1)
WELD 220L FCAW Laboratory (1)
Safe use of FCAW equipment and shop practices. Covers FCAW on mild and alloy steels. One hour lecture and four hours laboratory per week. (Fall/Spring)

WELD 230 GTAW (1)
WELD 230L GTAW Laboratory (2)
Safe use of GTAW equipment and shop practices. Covers GTAW of mild and alloy steel as well as aluminum and copper base metals in all positions. One hour lecture and four hours laboratory per week. (Fall/Spring)

WELD 240 SMAW III (1)
WELD 240L SMAW III Laboratory (7)
Continuation of WELD 120 emphasizing pipe welding. One hour lecture, eleven hours laboratory per week. Prerequisite: WELD 120 or consent of instructor. (Fall/Spring)

WELD 261 Testing & Inspection (3)
An advanced course covering testing and inspection of welds to determine soundness; visual, destructive, and nondestructive testing; and a study of codes and welder certification. Three hours per week. (Spring)

WELD 295 Independent Study (1,2)

WELD 296 Topics (1,2)

WELD 299 Internship (7,14)
On-the-job training by local companies in fabrication, construction, or maintenance welding. The student is responsible for securing the position and arranging work hours. Written papers are required and a minimum of 300 clock hours required for seven semester hours credit or 600 clock hours for 14 semester hours credit. Four hours per day for 15 weeks will equate to seven semester hours credit, eight hours per day for 15 weeks will equate to 14 semester hours credit. Work experience is scheduled each semester and may be taken as an elective after completion of the second semester of welding laboratory. Prerequisites: WELD 110, 112, 120, 121, 131, 141, 145, 230 or consent of instructor. (Fall/Spring/Summer)

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MESA STATE COLLEGE ADMINISTRATIVE PERSONNEL

ROBERT E. ANTHONY (1984), Coordinator of Intramural Sports and Recreational Services; B.S., M.S., Southern Illinois University.

RICHARD E. BACA (1972), Director, Academic Records; B.S., University of Colorado; M.A., Ed.D., University of Northern Colorado.

VELDA M. BAILEY (1982), Acting Director of Continuing Education; A.A., Mesa Junior College; B.A., M.A., University of Northern Colorado.

TILMAN M. BISHOP (1962), Director of Testing and International Student Services; B.A., M.A., University of Northern Colorado.

MICHAEL BLACK (1991), Director of Housing and Residence Life; B.S., Utah State University

CAROL G. BONNET, M.D., (1978), Campus Physician, B.A., UCLA, M.D., Baylor University.

BARBARA A. BORST (1981), Librarian, Head of Research Services and Interlibrary Loan Department; B.A., Sterling College; M.L.S., Library Science, Indiana University.

RONALD W. BRADLEY (1986), Director of Intensive English and International Student Program; M.A.T., School for International Training.

ELIZABETH BRODAK (1989), Head, Library Reference Department; B.A., Carthage College; M.L.S., University of Hawaii.

RONALD BRUMMETT (1990), Counselor; B.A., Metropolitan State College; M.B.A., University of Colorado; M.A., University of Northern Colorado; M.B.A., University of Colorado.

LYNN S. CONNAWAY (1987), Head of Technical Services and Cataloging; B.S., Edinboro State College; M.A., University of Arizona.

KIMBERLY D. CROSBY (1991), Admission Counselor; B.A., Mesa State College.

NITA S. CURREY (1991), Director, Montrose Higher Education Center; B.A., University of Northern Colorado; M.A., University of Oklahoma.

MARIUM G. DEGABRIELE (1990), Coordinator of Non-Traditional Adult Students and Registration Specialist; B.S., Northern Michigan University.

NADA DJOKIC (1990), Project Assistant for Professional Development of Western Colorado; B.A., University of Colorado; M.A., Adams State College.

JULIE C. ETHRIDGE (1991), Coordinator of Programming; B.B.A., Mesa State College.

TAMMY L. ERICKSON (1990), Acting Assistant Housing Director; B.B.A., Mesa State College.

JAY P. GASS (1991), Assistant Controller; B.A., Mesa State College.

DAVID H. GILBERT (1991), Director of Computer Services; B.S., Syracuse University.

RONALD GRAY (1988), Director of Campus Facilities and Physical Plant; B.S., South Dakota School of Mines and Technology.

THOMAS HARRIS (1991), Assistant Reference Librarian; B.S., M.L.I.S., University of Wisconsin.

JIM HEAPS (1991), Assistant Basketball Coach; B.S., Mesa State College; M.S., Southern Illinois University.

CHARLES R. HENDRICKSON (1967), Media Librarian; B.A., M.A., Ed.D., University of Northern Colorado.

DOT HOSKIN (1990), Program Manager, Retired Senior Volunteer Program.
JOHN W. (JAY) JEFFERSON (1967), Director of Intercollegiate Athletics; B.A., M.A., Adams State College.
M. KATHLEEN JEFFERSON, Associate Director of Housing.
JANEEN KAMMERER (1990), Acting Vice President Financial and Administrative Services and Controller; B.S., University of Colorado.
FRANK KELLER (1973), Associate Vice President and Director of College Center; B.A., Adams State College; M.A., University of Northern Colorado.
RAYMOND N. KIEFT (1989), President; B.S., Calvin College; M.S., Colorado State University; Ed.D., University of Northern Colorado.
KIM LOCKLIN (1991), Admissions, Recruitment Counseler; Assistant Football Coach.
JOHN P. MALONE, C.P.A. (1990), Project Director, Banner Software; B.S., Mesa State College.
TERESA M. MILLER (1990), Project Coordinator, Banner Software; B.S., Mesa State College.
BEVERLY J. MONDRAGON (1989), Professional Staff Assistant to the President.
SUSAN M. MOORE (1982), Bookstore Manager; B.A., Chestnut Hill College.
JERRY W. MOORMAN (1990), Assistant Vice President for Academic Affairs and Director of Continuing Education; M.Ed., Delta State University; B.S., Ed.D., Mississippi State University.
GERALD N. NOLAN (1984), Coordinator of Academic Computer Services; B.A., Northern Illinois University; M.A., University of Oregon.
MICHAEL NYIKOS (1989), Acting Vice President for Institutional Advancement and Student Affairs; A.B., New Mexico Highlands University; M.A., Ph.D., University of Michigan.
SHERRI L. PE'A (1983), Acting Assistant Vice President for Student Life and Director of Admissions; B.A., University of Hawaii; M.A., Adams State College.
MARLA K. PEYTON (1986), Coordinator of Student Employment, Financial Aid Counselor; B.A., Mesa State College; M.B.A., Western State College.
DOLORES PITMAN (1986), Coordinator of Contractual Counseling Services; M.A., Adams State College.
GARY R. RATCLIFF (1987), Director of Public Relations and Publicity and Associate Director of College Center; B.S., M.Ed., University of Maryland.
ANDREW J. RODRIGUEZ (1989), Director of Purchasing; B.S., University of Northern Colorado.
RAFAEL RODRIGUEZ (1990), Minority Student Recruitment and Retention Specialist; B.A., M.A., University of Colorado-Colorado Springs.
JAMES P. RYBAK, Professional Engineer (1972), Vice President for Academic Affairs; Professor of Engineering; B.S.E.E., Case Western Reserve University; M.S., University of New Mexico; Ph.D., Colorado State University.
SCOTT H. SMILEY (1990), Associate Director of Admissions; B.B.A., Texas Tech University.
REGINA SOWELL (1991), Assistant Director of Montrose Higher Education Center; B.S., Southern Colorado State College.
ROBERT P. STOKES (1970), Director Career and Placement Services; B.A., Western State College; M.A., Colorado State University.
PHILIP W. SWILLE (1988), Director of Financial Aid and Student Employment; B.A., Adams State College; M.A., Ed.S., Western State College.
JOY L. THYER (1988), Director, Health Center; A.D.N., Mesa State College.
KATHLEEN R. TOWER (1972), Head, Special Collections/Government Documents Librarian; Assistant Professor of Library Science; B.M.E., M.A., University of Denver.
DOUGLAS G. TUCKER (1975), Director of Personnel and Payroll; B.A., M.B.A., Western State College.
BERNADETTE WEBER, (1989), Admissions Counselor; B.A., Mesa State College.
JAN WILLIAMS (1990), Director of Budget and College Services; B.S., Colorado State University.
JULIA WOODS (1990), Director of the Learning Resource Center; B.A., Kearney State College; M.L.S., University of Oklahoma; M.P.A., Florida International University.
SANDRA WYMORE (1986), Coordinator, Physically and Learning Disadvantaged and Supplemental Services, Handicapped; B.A., University of Denver

+ Deans of Academic Schools
School of Business, Laurence W. Mazzeno (Acting Dean)
School of Humanities and Fine Arts, Michael Gerlach (Acting Dean)
School of Technology, A. Ray Greb (Acting Dean)
School of Natural Sciences and Mathematics, James B. Johnson (Acting Dean)
School of Nursing and Allied Health, Mary A. Turley
School of Social and Behavioral Sciences, Daniel Arosteguy (Acting Dean)

+ Department Chairs
Accounting and Business Computer Information Systems, David Rogers
Agriculture and Home Economics, Richard Moran
Art, Charles Hardy
Behavioral Sciences, Harry A. Tiemann
Biological Sciences, Phyllis Chowdry
Business Administration, Elgin Mallory
Chemistry and Physics, Gordon Gilbert
Computer Science, Mathematics, and Engineering, Edwin C. Hawkins
Geology, Del Foutz
Languages and Literature, Robert L. Johnson
Music, Monte Atkinson
Nursing, Associate Degree, Margaret Ann Conrad
Nursing, Baccalaureate Degree, Judy Goodhart
Physical Education and Recreation, Theodore Swanson
Social Science, Harry Tiemann
Technology, Area Vocational School, Paul Wells
Technology, I.E.T.C., William T. Branton
Theatre and Communications, David Cox

+ *See individual listings under Instructional Personnel.*

MESA STATE COLLEGE FACULTY

(Figures in parentheses indicate year of regular appointment to Mesa State College professional staff. Prior temporary or part-time service is not indicated.)

DANIEL J. AROSTEGUY (1976), Professor of Economics; Acting Dean, School of Social and Behavioral Sciences, B.S., M.S., University of Nevada-Reno; Ph.D., Colorado State University.

MONTE ATKINSON (1985), Assistant Professor of Music; Chairperson, Department of Music; A.S., Snow College, Utah; B.F.A., Utah State University; M.M., DMA, University of Illinois.

CHARLES W. BAILEY (1965), Professor of Mathematics; B.A., M.A., University of Northern Colorado.

RICHARD BALLARD (1985), Associate Professor of Biology; B.A., M.S., California State University; Ph.D., Utah State University.

BRUCE A. BAUERLE (1972), Professor of Biology; B.A., University of Kansas; M.S., University of Missouri-Kansas City; D.A., University of Northern Colorado.

BRENDA K. BEDEN (1986), Instructor of Applied Technology (Graphic Communications); A.A.S., Mesa State College.

VIRGINIA L. BEEMER (1968), Professor of Early Childhood Ed; Director of Early Childhood Education Program; B.S., M.A., Northern Arizona University.

RICHARD L. BERKEY (1967), Associate Professor of English; B.A., Fort Lewis College; M.A., Eastern New Mexico University.

PIERRE G. BETTELLI (1985), Assistant Professor of Business Computer Information Systems; B.S., Southern Colorado State College; M.S., Colorado State University.

EDWARD A. BOEHLER, C.P.A. (1981), Professor of Accounting; B.S., University of California-Berkeley; M.B.A., Golden Gate University.

ORVILLE L. BOGE (1956), Professor of Chemistry; B.A., M.A., University of Northern Colorado.

WILLIAM T. BRANTON (1970), Assistant Professor of Applied Technology (Welding); Chairperson, Industry and Technology (I.E.T.C.); Certified Instructor, State Board for Community Colleges and Occupational Education.

JAMES R. BROCK (1988), Associate Professor of Engineering Technology; B.S., M.S., University of Illinois.

ESTHER BROUGHTON (1991), Assistant Professor of English; B.A., Utah State University; M.S., University of Texas.

CLIFFORD C. BRITTON (1964), Professor of Mathematics; B.A., Adams State College; M.A., University of San Diego.

JEFF BRIGHAM (1991), Professor of Teacher Certification; B.A., M.A., University of Wisconsin; Ed.D., University of Wyoming.

BRADLEY A. BUCHHOLZ (1987), Instructor of Applied Technology (Auto Body Repair); 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.

SUZANNE CAHILL (1986), Assistant Professor of Art; M.F.A., University of Denver.

TENNIE ANN CAPPS (1964), Associate Professor of Office Administration; B.S., M.Bus.Ed., University of Oklahoma.

PERRY H. CARMICHAEL (1969), Associate Professor of Speech; B.A., M.A., Western State College.

LEWIS M. CHERE (1980), Associate Professor of History; B.A., Wilkes College; M.A., University of North Carolina; Ph.D., Washington State University.

PHYLLIS L. CHOWDRY (1976), Professor of Biology; B.S., University of Denver; M.N.S., Arizona State University; D.A., University of Northern Colorado.

CARRIE CLARK-SORENSEN, R.T.(R) (1986), Assistant Professor of Radiologic Technology; B.S., University of Nebraska.

DAVID M. COX (1981), Professor of Theatre; B.A., Mesa State College; M.F.A., University of Utah.

R. BRUCE CROWELL (1979), Professor of English; B.A., College of William and Mary; M.A., University of Arizona; B.D., San Francisco Theological Seminary; Ph.D., University of Arizona.

WILLIAM H. DAVENPORT (1988), Associate Professor of Mathematics; B.S., University of Tennessee; M.S., Texas A & M University; Ph.D., University of Alabama.

DALE L. DICKSON (1969), Professor of Business Management; B.S.B.A., University of Denver; M.Ed., Colorado State University; Ed.D., University of Northern Colorado.

DICKSON, SUSAN, R.N. (1986), Assistant Professor of Nursing; B.S.N., M.S., University of Colorado.

JO F. DORRIS (1977), Professor of Psychology; B.A., Oklahoma College for Women; M.S., Oklahoma State University; Ed.D., Arizona State University.

MATTS G. DJOS (1976), Professor of English; B.A., University of Washington; M.A., University of Idaho; Ph.D., Texas A & M University.

DAVID R. DUFF (1973), Associate Professor of Applied Technology (Graphic Communications); B.A., M.Ed., Colorado State University.

ARUN EKTARE (1986), Professor of Computer Science; Ph.D., University of Roorkee (India).

BYRON EVERS (1989), Assistant Professor of Mass Communications; B.S., M.S., Murray State University.

PATRICE FEELY, R.T.(R) (1990), Instructor of Radiologic Technology; A.A.S., Mesa State College.

CHARLES R. FETTERS (1976), Associate Professor of Applied Technology (Electronics); B.S., New Mexico State University; M.A., University of Northern Colorado.

KAREN E. FORD (1984), Associate Professor of Psychology; B.A., Mississippi College; M.A., Northeast Louisiana; Ph.D., University of Mississippi.

MARCIA FORREST, R.N. (1980), Professor of Nursing; M.S.N., University of Miami; Ph.D., University of Texas.

DELL R. FOUTZ (1972), Professor of Geology; Chairperson, Department of Geology; B.S., M.S., Brigham Young University; Ph.D., Washington State University.

JOSE ELI FRESQUEZ (1971), Professor of Applied Technology (Auto Mechanics); B.A., M.Ed., Colorado State University.

RICHARD R. FROHOCK (1963), Associate Professor of English; B.A., William Jewell College; M.A., University of Oregon.

F. D'ANN FUQUAY (1991), Professor of Computer Science; B.A., Oklahoma Baptist University; M.A., University of Oklahoma; M.S. Colorado State University; D.A., Idaho State University.

JOSE L. GALLEGOS (1976), Professor of English; B.A., Western State College; M.A., Ph.D., University of Colorado.

MICHAEL C. GERLACH (1988), Professor of Theatre; Acting Dean, School of Humanities and Fine Arts; B.S., Fairleigh Dickinson University; M.A., Ph.D., University of Michigan.

KARL H. GAUGGEL (1990), Assistant Professor of Spanish; B.A., San Francisco State College; M.A., Ph.D., University of Colorado.

GORDON GILBERT (1980), Professor of Physics; Chairperson, Department of Chemistry and Physics; B.S., M.S., Ph.D., Massachusetts Institute of Technology.

JUDY GOODHART, R.N. (1990), Assistant Professor of Nursing; Chairperson, Department of Nursing, BSN; B.S. Loretto Heights; M.S.N., University of Colorado.

THOMAS D. GRAVES (1966), Professor of Counseling and Psychology; Director of Counselor Education Programs; B.A., M.A., Adams State College; Ed.D., University of Northern Colorado.

A. RAY GREB (1983), Professor of Applied Technology (Machine and Manufacturing Trades); Acting Dean, School of Technology; B.A., M.A., University of Northern Colorado.

DONNA K. HAFNER (1967), Associate Professor of Mathematics; B.A., University of Northern Colorado; M.A.T., Colorado State University.

CHARLES HARDY (1979), Associate Professor of Art; Chairperson, Department of Art; B.A., Colorado State University; M.F.A., University of Arizona.

EDWIN C. HAWKINS (1963), Professor of Mathematics; Chairperson, Department of Computer Science, Mathematics, and Engineering; B.A., M.A., University of Northern Colorado.

MYRA D. HEINRICH (1983), Professor of Psychology; B.S., M.A., Ph.D., University of North Dakota-Grand Forks.

FORREST S. HOLGATE (1979), Assistant Professor Applied Technology (Electric Lineman); B.A., Texas Tech University.

EDWARD C. HURLBUT (1976), Professor of Biology; Chairperson, Department of Biological Sciences; B.A., Western State College; M.S., Purdue University; Ph.D., University of Missouri-Columbia.

JAMES B. JOHNSON (1967), Professor of Geology; Acting Dean, School of Natural Sciences and Mathematics; B.A., University of Colorado; M.S., University of Utah; Ph.D., University of Colorado.

ROBERT L. JOHNSON (1962), Professor of English; Chairperson, Department of Languages and Literature; B.A., M.A., Western State College; Ph.D., University of Northern Colorado.

VERNER JOHNSON (1969), Associate Professor of Geology; B.A., M.S., Southern Illinois University; Ph.D., University of Tennessee.

WALTER A. KELLEY (1977), Professor of Biology; B.A., M.S., California State University-Northridge; Ph.D., Colorado State University.

CARL M. KERNS (1969), Professor of Mathematics; B.A., Western State College; M.S., University of Oregon; Ed.D., University of Northern Colorado.

STEVE W. KIRKHAM (1988), Instructor of Physical Education; B.A., University of Northern Colorado; M.S., Fort Hays State University.

GARY LOOFT (1987), Instructor of Applied Technology (Heavy Equipment Mechanics); Certificate, Commercial Trades Institute.

DANIEL W. MacKENDRICK (1964), Professor of English; Assistant Director of Athletics; B.A., M.A., Western State College.

LAWRENCE J. MADSEN (1988), Assistant Professor of Chemistry; B.S., Oregon State University; M.S., Ph.D., University of Washington.

ELGIN A. MALLORY (1990), Assistant Professor of Business Administration; B.S., M.S., Eastern New Mexico University; Ph.D., Colorado State University.

DONALD D. MANNING, (1990), Associate Professor of Business Administration; B.S., California State University; M.B.A., University of Colorado; Ph.D., Colorado State University.

DEBRA MARINER, C.P.A. (1991), Assistant Professor of Business Computer Information Systems; B.S., Northern State College, Aberdeen, S.D.; M.B.A., Western State.

JOHN T. MARSHALL (1982), Professor of Physics; B.S., University of New Mexico; M.S., Ph.D., Washington University.

ROBERT W. MAYER (1987), Assistant Professor of Travel, Recreation and Hospitality; B.A., M.S., University of Northern Colorado.

LAURENCE W. MAZZENO (1989), Professor of English; Dean, School of Humanities and Fine Arts; Acting Dean, School of Business; B.A., Loyola University; M.A., Ph.D, Tulane University.

GARY L. McCALLISTER (1973), Professor of Biology; B.S., M.S., Brigham Young University; D.A., University of Northern Colorado.

HAROLD B. McINTIRE (1987), Assistant Professor of Business Administration; M.B.A., Eastern New Mexico University.

BETTY McMECHEN, C.P.A. (1986), Assistant Professor of Accounting; B.S. Ed., University of Arkansas; M.S., Colorado State University.

WAYNE MEEKER (1966), Professor of Sociology; B.A., M.A., Western State College; Ph.D., University of Colorado.

BARRY P. MICHRINA (1990), Assistant Professor of Anthropology; B.S., St. Francis College; M.S., Colorado State University; Ph.D., Pennsylvania State University.

PRASANTA K. MISRA (1988), Professor of Physics; B.S., M.S., Utkal University, India; Ph.D., Tufts University.

RICHARD MORAN (1984), Assistant Professor of Agriculture; Chairperson, Department of Agriculture and Home Economics; B.S., M.S., Southern Illinois University.

LOUIS G. MORTON (1966), Professor of Political Science; B.S., University of Missouri-Columbia; M.A., Ed.S., Western State College.

LAVERNE MOSHER (1990), Assistant Professor of Art; B.A., University of Northern Colorado; M.F.A., Arizona State University.

TIMOTHY NOVOTNY (1989), Associate Professor of Statistics, B.A., B.S., University of Notre Dame; M.A., Creighton University; M.S.B.A., University of Denver; Ph.D., University of Wyoming.

JAMES F. PARONTO (1990), Assistant Professor of Physical Education; Head Football Coach; B.A., M.A., Adams State College; Ed.D., Brigham Young University.

JOSE M. PEER (1988), Associate Professor of Political Science; B.A., M.A., University of Nevada; Ph.D., Washington State University.

JACK M. PERRIN (1966), Assistant Professor of Physical Education; B.A., M.A., Northeast Missouri State University.

KAREN M. PERRIN (1977), Assistant Professor of Physical Education; B.S., Eastern New Mexico University; M.S., Kansas State University.

WILLIAM E. PUTNAM (1961), Professor of Chemistry; B.S., Birmingham Southern College; M.S., Emory University; Ph.D., Rice University.

THOMAS RALSER, C.P.A. (1987), Assistant Professor of Business Administration; B.S., Illinois State University; M.S., University of Utah.

PAUL L. REDDIN (1970), Professor of History; B.A., Adams State College; M.A., Ph.D., University of Missouri-Columbia.

DAVID M. REES (1983), Professor of Economics; B.S., Utah State University; M.S., Ph.D., University of Oregon.

KRISTINE L. REUSS, R.N. (1990), Assistant Professor of Nursing; B.S., M.S.N., University of Colorado.

JOHN H. REUSZER (1990), Associate Professor of Engineering; B.S., M.S., Ph.D., Purdue University.

JANINE RIDER (1991), Assistant Professor of English; B.A., Miami University; M.A., University of Michigan.

JACK E. ROADIFER (1966), Professor of Geology; B.S., M.S., South Dakota School of Mines and Technology; Ph.D., University of Arizona.

MARGARET S. ROBB (1976), Assistant Professor of Speech and Drama; B.A., M.A., University of Michigan.

DAVID E. ROGERS, C.P.A. (1975), Professor of Accounting; Chairperson, Department of Accounting and Business Computer Information Systems; B.A., University of New Mexico; M.B.A., Golden Gate University.

JAMES P. RYBAK, Professional Engineer, (1972), Professor of Engineering; Vice President for Academic Affairs; B.S.E.E., Case Western Reserve University; M.S., University of New Mexico; Ph.D., Colorado State University.

ANN J. SANDERS (1971), Assistant Professor of Physical Education; B.A., Eastern Washington State College; M.A., University of Colorado.

P. DOUGLAS SCHAKEL (1978), Instructor, Physical Education; Head Basketball Coach; B.A., Central College; M.A., Adams State College.

PAUL G. SCHNEIDER (1969), Associate Professor of Music; Director of Bands; B.A., M.A., University of Northern Colorado.

STEVEN C. SCHULTE (1989), Assistant Professor of History; B.A. University of Wisconsin-River Falls; M.A. Colorado State University; Ph.D., University of Wyoming.

MICHAEL P. SLAUSON (1990), Assistant Professor of Travel, Recreation, and Hospitality; B.S., Utah State University; M.S., University of Wisconsin.

NORMA J. SMITH (1991), Associate Professor of Teacher Certification; Director of Teacher Education and Certification Program; B.A., University of California; M.Ed., College of Notre Dame, Belmont, CA; Ph.D., University of Denver.

ROBERT P. SOWADA (1966), Assistant Professor of Foreign Languages; B.A., M.A., University of Wyoming.

MARLYN K. SPELMAN (1976), Professor of English; B.A., Ph.D., University of Colorado.

GENE H. STARBUCK (1974), Professor of Sociology; B.A., M.A., Ph.D., University of Colorado.

THEODORE E. SWANSON (1974), Associate Professor of Recreation; B.S., M.A., University of Northern Colorado; Ph.D., Colorado State University.

BARRY C. THARAUD (1976), Professor of English; B.A., M.A., Ph.D., University of California-Santa Barbara.

HARRY A. TIEMANN, JR. (1962), Professor of Psychology; Chairperson, Department of Behavioral Sciences and Department of Social Sciences; B.A., M.A., University of Colorado; Ph.D., Colorado State University.

JOHN U. TOMLINSON (1975), Distinguished Professor of Political Science; B.A., M.S., Fort Hays Kansas State University; Ph.D., University of Kansas.

KARL F. TOPPER (1991), Assistant Professor of Environmental Restoration Engineering Technology; B.S., University of Florida; M.S., Colorado State University; Ph.D., Utah State University.

KAREN TUINSTRA (1990), Associate Professor of Developmental Studies; B.S., M.S., Drake University; Ph.D., Colorado State University.

MARY A. TURLEY, R.N. (1988), Professor of Nursing; Dean, School of Nursing and Allied Health; B.S.N., Case Western Reserve University; M.Ed., Cleveland State; Ph.D., University of Texas.

GERALD WEAVER (1991), Associate Professor of Mass Communication; B.A., University of the Pacific; M.A., University of Mississippi.

PAUL G. WELLS (1978), Assistant Professor of Applied Technology (Auto Body Repair); Chairperson, Industry and Technology (Area Vocational School); B.A., University of Redlands.

STEVEN WERMAN (1990), Assistant Professor of Biology; B.S., M.S., California State University; Ph.D., University of Miami.

BYRON E. WIEHE (1974), Associate Professor of Physical Education; Head Baseball Coach; B.A., M.A., Adams State College; Ph.D., University of New Mexico.

CLIFTON M. WIGNALL (1976), Professor of Anthropology and Archaeology; Curator of Archaeological Collections; B.A., M.A., University of California-Berkeley; Diploma in Anthropology, Oxford University, England; Ph.D., Albert Schweitzer College, Switzerland.

EILEEN M. WILLIAMS, R.N. (1968), Professor of Nursing; B.S., University of Denver; M.S., University of Colorado.

ZHONG CHAO WU (1989), Associate Professor of Mathematics; B.S., China University of Science and Technology; Ph.D., University of Cambridge.

SUSAN A. YEAGER (1988), Associate Professor of Physical Education; Chairperson, Department of Physical Education and Recreation; B.A., Luther College; M.S., South Dakota State; P.E.D., Indiana University.

JOHN S. ZEIGEL (1975), Professor of English; B.A., Pomona College; M.A., Ph.D., Claremont Graduate School.

MARY E. ZIMMERER (1988), Associate Professor of Business Administration; B.A., M.S., University of Wyoming; Ph.D., Colorado State University.

MESA STATE COLLEGE EMERITUS FACULTY

ARLYNN D. ANDERSON, B.S., M.Ed., Ed.S., Professor of Applied Technology; Dean, School of Industry and Technology; Director of Vocational-Technical Education (1991).
THEODORE E. ALBERS, B.A., M.A., Ed.D., President.
WALTER F. BERGMAN, B.S., M.Ed., Associate Professor of Physical Education (1980).
WALTER J. BIRKEDAHL, B.Mus.Ed., M.Mus.Ed., Associate Professor of Music (1980).
DARRELL C. BLACKBURN, B.Mus.Ed., M.Mus.Ed., Professor of Music; Head, Department of Music (1982).
HAROLD R. BOLLAN, B.S., M.A., Professor of Applied Technology (1987).
LORRAINE N. BOSCHI, B.A., M.A., Associate Professor of English (1984).
JAMES C. CARSTENS, B.A., M.A., Ph.D., Professor of Business Administration; Dean, School of Business (1987).
JOHN D. CHARLESWORTH, B.Ed., M.Ed., Associate Professor of Applied Technology (Auto Mechanics) (1984).
J. LEON DAILEY, B.A., M.A., Social Science (1974).
JAMES C. DAVIS, B.A., M.A., Professor of Mathematics (1985).
PATRICIA A. FINK, B.A., M.A., Professor of Psychology (1983).
MAXINE GABELMAN, B.A., M.A., English (1973).
BETTY GOFF, B.A., M.A., Assistant Professor of Library Science (1986).
ALFRED J. GOFFREDI, B.A., M.A., Professor of Business; Dean, School of Industry and Technology (1979).
MAEBETH GUYTON, B.F.A., Assistant Professor of Music; Chair, Department of Music; (1989).
HELEN M. HANSEN, B.A., M.A., Professor of Office Administration (1976).
JAMES T. HARPER, B.A., M.A., J.D., Professor of Economics (1983).
JOHN G. HENSON, B.S., M.A.T., Professor of Mathematics (1987).
CHRISTOPHER M. HOLLOWAY, B.A., M.A., Associate Professor of History (1983).
MADGE E. HUFFER, B.A., M.A., Associate Professor of Speech (1979).
CHEO HUMPHRIES, B.S., Assistant Professor of Physical Education (1987).
BRUCE E. ISAACSON, Assistant Professor of Business (1987).
MAY BELLE KANAVEL, B.A., M.A., Chairperson, Department of Business (1964).
JAMES L. KRAMER, P.E., B.S., Associate Professor of Engineering Technology (1991).
DORIS R. LAY, B.A., M.A., Professor of English (1982).
MAURINE M. LEIGHTON, B.S., M.H.E., Professor of Home Economics (1977).
KENNETH E. LEMOINE, B.A., M.Ed., Mathematics, Dean of Special Services (1972).
MILTON F. LENC, B.A., M.S., Ed.D., Professor of Chemistry (1987).
CALVIN J. LUKE, B.S., M.A.T., Associate Professor of Mathematics (1987).
DONALD A. MacKENDRICK, B.S., M.A., Professor of History; Dean, School of Social and Behavioral Sciences (1990).
MELVIN McNEW, B.A., M.A., Chairman, Division of Physical Sciences (1972).
WILLIAM MEDESY, B.S., M.F., M.A., Ed.D., President (1970).
PAULINE O. MESSENGER, B.A., M.S., Professor of Library Science (1979).
DONALD E. MEYERS, B.F.A., M.A., Associate Professor of Art; Chair, Department of Art (1990).
LOUISE G. MOSER (R.N.), B.A., M.N., Chairperson, Division of Health Programs (1972).
THOMAS MOUREY, B.A., M.S., Assistant Professor of Computer Science (1984).
ELIZABETH MUSTEE, R.N., B.S., M.S. Professor of Nursing (1990)
MURIEL MYERS, B.A., M.Ed. Ph.D., Professor of Office Administration (1991).
WAYNE W. NELSON, B.S., M.S., Professor of Physical Education (1987).
J. J. NICHOLSON, B.A., M.A., Professor of Sociology (1983).
MORTON PERRY, B.S., M.A., M.Phil., Associate Professor of Political Science (1983).
W. DAVID PILKENTON, B.A., M.A., Associate Professor of Foreign Language (1987).
WOODROW W. RAMSEY, B.S.C.E., P.E., L.A., R.L.S., Associate Professor of Engineering (1980).
ALVIE REDDEN, B.S., M.F.A., Art; Chairman, Division of Fine Arts (1973).
ELAINE RIPLEY, B.A., M.A., Biology (1974).
MAI N. ROBINSON, B.S., Assistant Professor of English, (1989).
WILLIAM S. ROBINSON, B.A., M.A., Professor of Drama (1987).
WILMA E. SCHUMANN, R.N., B.Ed., Assistant Professor of Nursing (1984).
BERTHA L. SHAW, B.A., M.A., Humanities (1974).

DAN M. SHOWALTER, B.A., M.A., Professor of English; Dean, School of Humanities and Fine Arts (1979).
CLARICE S. TAYLOR, B.S., M.S., Assistant Professor of Home Economics (1991).
CARROLL C. TIMPTE, A.S., Instructor of Applied Technology (Electronics) (1982).
JAY W. TOLMAN, B.S., M.S., Professor of Geology, Vice President for Student Affairs (1977).
C. E. TOOKER, B.A., M.A., Associate Professor of Physical Education.
H. HERBERT WELDON, B.A., M.A., Professor of Mathematics, Vice President for Academic Affairs (1982).
JERRY D. WETHINGTON, B.S., M.S., Associate Professor of Computer Science (1991).
KENNETH L. WHITE, B.A., M.A., Assistant Professor of Chemistry (1988).
DONALD H. YONKER, B.S., M.A., D.D.S., Professor of Biology (1978).
JOAN W. YOUNG, B.A., M.A., Associate Professor of Biology (1978).
ROBERT D. YOUNGQUIST, B.S., B.A., M.Ed., Associate Professor of Business (1987).

MESA STATE COLLEGE VISITING PROFESSORS

CARL ABBOTT (1985), Wayne N. Aspinall Professor of History; B.A., Swathmore College; M.A., Ph.D., University of Chicago.
KENNETH E. BOULDING (1984), Wayne N. Aspinall Professor of Economics; B.A., M.A., Oxford (England).
PETER G. BOYLE (1989), Wayne N. Aspinall Professor of History and American Studies; M.A., Glasgow University, Scotland; Ph.D., University of California, Los Angeles.
JOANNE CARLSON BROWN (1988), Cosmicos Professor of Religious Studies; A.B., Mount Holyoke College; M. Div., Garrett Theological Seminary; Ph.D., Boston University.
VIVIAN BROWN (1982), Walter Walker Professor in Theatre.
RICHARD BULL (1983), Walter Walker Professor in Theatre.
ROGER DINGMAN (1991), Wayne N. Aspinall Professor of History; B.A., Stanford; M.A., Ph.D. Harvard.
ALLAN DUFFUS (1989), Professor of Accounting; Charles Sturt University, Australia.
EMMANUEL FELDMAN (1987 and 1991), Cosmicos Professor of Religious Studies; B.S., M.A., Johns Hopkins University; Ph.D., Emory University.
RICHARD FUNSTON (1987), Wayne N. Aspinall Professor of Political Science; B.A., M.A., Ph.D., University of California - Los Angeles; J.D., University of San Diego.
JIM (BLOSZIES) HARDIE (1984), Walter Walker Professor in Theatre.
DENIS HINE (1985), Cosmicos Professor of Religious Studies; A.B., St. Benedict's Seminary; S.T.L., S.E.O.L., Oriental Institute, Rome.
FRANK LOVERDE (1982), Walter Walker Professor in Theatre.
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), Cosmicos Professor of Theology; A.B., Loyola University; Ph.L., S.T.L. West Baden College; Ph.D., University of Louvain, Belgium.
HARVEY POTTHOFF (1984), Cosmicos Professor of Religious Studies; Th.M., Th.D., Iliff School of Theology.
WILLIAM G. ROBBINS (1990), Wayne N. Aspinall Professor of History; B.S. Western Connecticut; M.A., Ph.D., University of Oregon.
TEE SCATUORCHIO (1982), Walter Walker Professor in Theatre.
LILIA SKALA (1981), Walter Walker Professor in Theatre; Academy Award nominee, Golden Globe nominee, Emmy Award nominee and Heritage Award winner.
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.
ROBERT W. VENABLES (1983), Wayne N. Aspinall Professor of History; B.A., Northwestern University; M.A., Ph.D., Vanderbilt University.
RICHARD A. WATSON (1982), Wayne N. Aspinall Professor in Political Science; A.B., Bucknell; L.L.B. and Ph.D., University of Michigan.

BUILDINGS AND EQUIPMENT

Houston Hall (1940), the first permanent building on the present campus, includes classrooms where a variety of subject areas are taught such as business, humanities, and social and behavioral sciences. This structure was totally remodeled in 1979-80.

Wubben Hall (1962), contains classrooms, laboratories, staff offices and storage areas for physical and life sciences, mathematics, computer sciences, and engineering. Special features of the building are an octagonal lecture hall which seats one hundred persons, an electron microscopy laboratory, and the only herbarium in western Colorado.

Lowell Heiny Hall (1967), a four-level building housing faculty and administrative offices, was totally remodeled in 1986-87.

The John U. Tomlinson Library (1986), expands the traditional library concept to include storage and circulation for all commonly used forms of information such as microfilm, microfiche, audio tapes, video tapes, slides, films, records and computer disks.

Walter Walker Fine Arts Center (1969), includes classroom and studio facilities for art, music, and drama together with a multi-purpose Little Theatre.

William A. Medesy Vocational-Technical Center (1969), has shops, laboratories, and classrooms for auto mechanics, auto body and fender, electronics, and graphic-communications departments. The Mesa State College Area Vocational School serves both youth and adults of the region as a training center for various occupations.

The Industrial Energy Training Center (1982) houses staff offices, shops, training areas and classrooms. Additionally, the College experimental farm is located at this site. The IETC serves high school, college and continuing education students. Located at 29 and D Roads, this facility is approximately three miles from the main campus.

The Unified Technical Education Center (1992) houses staff offices, shops, a computer lab, training areas and classrooms. UTEC serves high school, college and continuing education students. Additionally, the facility is available on a contract basis for use by area business and industry. UTEC is located on Blichmann Avenue in the Foresight Industrial Park.

The Mesa State College Montrose Center contains classrooms, a computer lab, and staff offices. It is a leased facility located on East Main Street in Montrose, Colorado. The facility was occupied in late summer 1991 and serves college and continuing education students.

Roe F. Saunders Physical Education Center (1968), provides facilities for a variety of physical education and recreation activities. Major features include an all-purpose gymnasium, swimming and diving pools, locker and shower rooms, classrooms, and office space for the Department of Physical Education and Recreation faculty. Physical education and practice athletic fields are located immediately west of the Physical Education Center with tennis courts to the north of the facility.

Three 200-student residence halls — Tolman, Rait, and Pinon Halls (1966, 1967), provide comfortable living quarters for students. Most of the rooms are doubles, but a few single rooms are available. All rooms are furnished with modern, wall-hung furniture.

Walnut Ridge Apartments (1978), are available to sophomores, juniors, and seniors. Forty-eight attractively furnished two- and three-bedroom units provide complete housekeeping facilities.

The W. W. Campbell College Center (1962, remodeled 1990-91), contains a bookstore, copy center, art gallery, outing program, student government offices, radio station, school paper, gameroom, snack bar, information desk, dining hall, outdoor cafe, student lounges, and meeting rooms.

The Early Childhood Education Center (1964) provides facilities for Mesa State College's training program for directors and other personnel of childcare centers and the Parent Education and Preschool program.

Mesa State College Day Care Center is organized for the convenience of Mesa State College students who have small children.

The Student Life Center provides a central location for counseling, career development, employment, and placement services.

The Auto-Tutorial Laboratory houses audio-visual, library aids, and simulated patient rooms for specialized training in Nursing and Allied Health programs.

The Student Health Center includes office space and clinical facilities for the College Health Service staff.

Complete Discipline Index

Subjects (disciplines) offered by Mesa State College are listed below alphabetically followed by the current course prefix, the beginning page number of individual programs and course descriptions, and the school holding academic responsibility for the subject.

*School

BUS — Business
H&FA — Humanities and Fine Arts
TECH — Techology
NS&M — Natural Sciences and Mathematics
NURS — Nursing and Allied Health
S&BS — Social and Behavioral Sciences

ALPHABETICAL SUBJECT INDEX

*Also see Schools and Departments

ADMISSION TO MESA STATE COLLEGE

To be considered for admission to Mesa State College each student is required to submit a completed application with a $20.00 non-refundable application fee. The following information is also needed to make an admission decision:

	ACT or SAT	G.E.D. Scores	H. S. Trans.	College Trans.
H. S. Graduate	X		X	
G.E.D. Recipient	X	X		
Transfer Student	*	*	*	X

*Transfer students with less than 30 semester hours (45 quarter hours) of college credit must submit official high school transcripts and either the SAT or ACT results in addition to the official college transcripts.

To provide sufficient time to process an application, all required information must be received two weeks prior to the semester a student plans to attend.

Mesa State College will not offer financial aid to a student until he or she has been admitted. To be considered for all funds available through need-based aid programs (grants, loans) and merit-based aid programs (scholarships) for the fall semester, a financial aid application should be submitted as soon as possible after January 1 and no later than March 15. For a financial aid application, please contact the Office of Financial Aid, P.O. Box 2647, Grand Junction, Colorado 81502 or call (303) 248-1396.

Students applying to the School of Nursing and Allied Health must submit a separate application to that school in addition to the Mesa State College application. Please contact the School of Nursing and Allied Health at (303) 248-1398 to receive the additional application. All students applying to the School of Nursing and Allied Health must have either the ACT or SAT results.

An Official Transcript is one that is sent directly to the Office of Admissions from the issuing institution(s) previously attended. Hand delivered or facsimiles of transcripts will not be accepted.

High School Graduates: High school graduates with no previous college level study are classified as New Freshmen. Contact the high school and request that an official high school transcript and SAT or ACT scores be sent directly to the Office of Admissions.

G.E.D. Recipients: Anyone who received a G.E.D. but has no previous college level study is classified as a New Freshman. Students must contact the G.E.D. testing agency and request that G.E.D. scores be sent to the Office of Admissions. The ACT or SAT test results are also required. Contact the appropriate testing agency and have the test results sent to the Office of Admissions. Students who have not taken the ACT or SAT, please contact the Mesa State College Testing Center at (303) 248-1215 to receive information on the next available testing opportunity. All test results must be received prior to admission and registration.

Transfer Students: Any student who has been or is currently enrolled in any college or university is classified as a Transfer Student. Transfer Students are required to submit official transcripts for all institutions previously attended. For those with less than 30 semester hours (45 quarter hours) of college credit, high school transcripts and ACT or SAT test scores are also required.

Transcripts will not be evaluated for transfer credit until a student has been admitted to Mesa State College.

All Applicants: Failure to provide accurate or complete information may result in delay of admission, loss of credit, and/or dismissal. Any questions about application procedures should be directed to the **Office of Admissions, Mesa State College, P.O. Box 2647, Grand Junction, Colorado 81502,** or call 1-800-982-MESA (in Colorado) or (303) 248-1376.