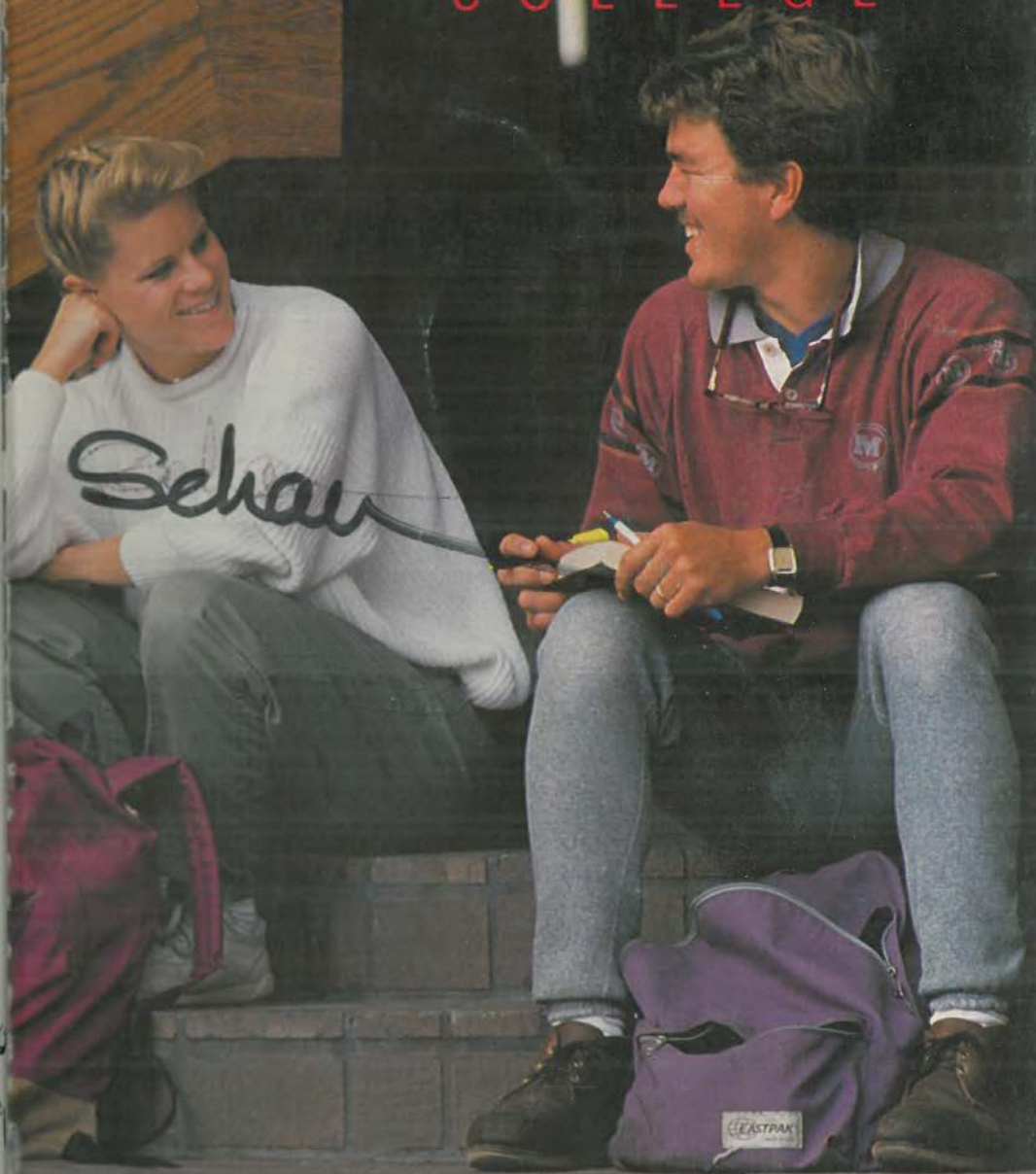




MESA STATE
COLLEGE



1990-91 CATALOG

1990-91 ACADEMIC CALENDAR

SUMMER SEMESTER 1990

May 18 (Fri.)	Registration for 12-week session and first 6-week session
May 21 (Mon.)	Classes begin
May 28 (Mon.)	Memorial Day holiday
June 28-29 (Thur., Fri.)	Mid-term exams for 12-week session Final exams for first 6-week session
July 2 (Mon.)	Registration for second 6-week session Classes begin
July 4 (Wed.)	Independence Day holiday
Aug. 9-10	Final exams for 12-week session and Second 6-week session
Aug. 10 (Fri.)	Summer Session ends

FALL SEMESTER 1990

Aug. 25 (Sat.)	ACT Testing (Residual) 8:00 am, Houston
Aug. 27 (Mon.)	Orientation
Aug. 28 (Tues.)	Registration
Aug. 29 (Wed.)	First day of classes
Sept. 3	Labor Day — classes in session
Sept. 10 (Mon.)	Last day to add classes
Sept. 13 (Thurs.)	Last day to drop classes*
Oct. 17, 18, 19	Mid-semester exams
Oct. 22, 23 (Mon., Tues.)	Fall Break
Oct. 24 (Wed.)	Second module begins
Nov. 9 (Fri.)	Last day to withdraw from classes**
Nov. 21-23 (Wed.-Fri.)	Thanksgiving vacation
Dec. 14 (Fri.)	Last day of classes
Dec. 17, 18, 19, 20 (Mon.-Thur.)	Final examinations
Dec. 20 (Thur.)	Fall Semester ends

SPRING SEMESTER 1991

Jan. 12 (Sat.)	ACT Testing (Residual) 8:00 am, Houston
Jan. 14 (Mon.)	Registration
Jan. 15 (Tues.)	First day of classes
Jan. 25 (Wed.)	Last day to add classes
Jan. 30 (Wed.)	Last day to drop classes*
Mar. 6, 7, 8 (Wed.-Fri.)	Mid-semester exams
Mar. 9-17	Spring vacation
Mar. 18 (Mon.)	Second module begins
Mar. 22 (Fri.)	Last day to withdraw from classes**
May 6 (Mon.)	Last day of classes
May 7, 8, 9, 10	Final examinations
May 10	Spring Semester ends
May 11 (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.

P.O. Box 2647
Grand Junction, Colorado 81502

CATALOG
1990-91

NEED MORE INFORMATION?

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

- Acting Assistant Vice President of Institutional
Advancement and Student Affairs Sherri Pe'a — (303)248-1376
in Colorado, Toll Free 1-800-982 MESA
- Billing Information (tuition, fees, etc.) Katy Bell — (303)248-1661
- Financial Aid Director (scholarships, loans, grants) Phil Swille — (303)248-1396
- Housing Director Daniel Dreves — (303)248-1536
- 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.

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FOREWORD

MESA STATE COLLEGE is a comprehensive coceducational 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

Background on Mesa State College

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.

Mesa State College was organized as Grand Junction State Junior College in 1925 and on July 1, 1974, was authorized to offer baccalaureate degree programs. Enrollment, now about 4600, provides students with a favorable student-faculty ratio and a high-quality learning environment.

How to Use This Catalog:

This catalog is divided into three 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 Program

The six schools are listed separately along with the degrees and certificates offered under each and the general requirements for earning them.

Course Descriptions

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

The "Complete Discipline Index," near the end of the catalog explains the prefix designations.

Class schedules are published before each semester and are available from the Records office. A year-long schedule is published and is usually available in March.

Not all classes described in this catalog are offered every semester or every year.

At the end of the catalog, the governing board, administrative staff, and faculty are listed. Indexes to the catalog, a calendar, and a campus map are also included.

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, Committee on Allied Health Education of the American Medical Association (Radiologic Technology), and the American Dental Association Commission on Dental Accreditation.

Location

The campus is bordered by an attractive and modern residential neighborhood. Stores and other conveniences are located within walking distance of the campus and many others, including large shopping centers, are nearby. Grand Junction's location in a scenic part of the Rocky Mountain West provides unlimited opportunity for the outdoor enthusiast. Many College activities utilize the physical advantages of the region such as the College's physical education program in skiing which is conducted at the Powderhorn Ski Area on Grand Mesa. Students take advantage of the city's parks, golf courses, and swimming pools and numerous outdoor attractions found in the nearby vicinity.

Directly to the southeast of Mesa State College, Lincoln Park includes a football field, quarter-mile track, baseball field, eight concrete tennis courts, and a nine-hole golf course with grass fairways and greens. All are available to college students.

College Community Relations

Through mutual cooperation with the community, Mesa State College has become integral in the development of Western Colorado. Faculty members are available for lectures and discussions on a wide range of subjects, 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 State Colleges in Colorado (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 please refer to the Consortium Programs section of this catalog.

Inter-Institutional Students

A purpose of the State Colleges in Colorado is to establish procedures for facilitating superior programs through shared resources — physical, professional, organizational, and curricular.

The registrars of the four institutions of the State Colleges in Colorado have developed a form to be used for inter-institutional registration. Using this registration form, a student in good standing at any of the schools will be accepted as a student at any of the others. 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 State Colleges in Colorado 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 should take the American College Test (ACT) or the Scholastic Aptitude Test (SAT) for enrollment in programs greater than one year in length. 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 may enroll in individual courses with the consent of the instructors.

OCCUPATIONAL EDUCATION COURSES AND PROGRAMS INCLUDE:

Accounting	Graphic Communications
Auto Body and Fender Repair	Heavy Equipment/Diesel Mechanics
Auto Mechanics	Legal Assistant
Business Computer Information Systems	Machine and Manufacturing Trades
Civil Engineering Technology	Medical Office Assistant
Commercial Art	Nursing, Associate Degree
Data Processing	Radiologic Technology
Dental Assisting	Secretarial Programs and Upgrading
Drafting Technology	Travel, Recreation and Hospitality Management
Early Childhood Education	Welding
Electric Lineworker	Word Processing
Electronics Technology	
Farm and Ranch Management	

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 four 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 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.

The Office of Continuing Education provides several special offerings. Among these are a summer dance program, Elderhostel, teleconferences, credit classes at the Montrose Continuing Education Center, and classes for children.

Mesa State College cooperates with other state colleges and universities to provide facilities for on- and off-campus extended studies 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 are less than a semester in length. Registration is conducted through the Office of Continuing Education.

Mesa State College Intensive English Program

Toward the goal of providing an international atmosphere on the Mesa State College campus, the Intensive English Program was established in the summer of 1986. The program as a whole is designed to provide a unique language and cultural experience for the international student 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 meeting members of the community of Grand Junction through the host family program.

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".

The program offers four levels of instruction 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.

Tutorial and Learning Center

The Tutorial and Learning Center provides peer tutorial services, assessment programs, and study skills improvement workshops and seminars. Qualified tutors are available at conveniently scheduled times on nearly every subject through the Center's offices in Houston Hall. The study skills workshops and seminars explain how to take notes, take a test successfully, and organize study time effectively.

A new three credit hour developmental course (DEVL 090), College Reading and Study Skills, for students needing academic reinforcement of college level skills is coordinated through this center.

Physically and Learning Disadvantaged

Mesa State College provides 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 PLD Coordinator to discuss special needs. The PLD office is closed from mid-June to mid-August.

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. Classes are held during mornings only. 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 in a variety of disciplines, 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 — Administrative Office Management; Business Administration; Business Economics; Business Software Engineering; Computer Information Systems; Data Processing; Financing; Legal Assistant; Management; Managerial Accounting; Marketing; Office Administration; Office Supervision and Management; Accounting Technology, Administrative Secretary, Legal Secretary, Medical Office Assistant, Medical Secretary, Office Clerical, Word Processing; Personnel Management; Public Accounting; Travel, Recreation, and Hospitality Management.

School of Humanities and Fine Arts — English; Fine Arts: Art, Music, Music Theatre; Humanities; Mass Communications.

School of Industry and Technology — Auto Body and Fender; Auto Mechanics; Electric Lineworker; Electronics Technology; Electronic Engineering Technology; Graphic Communications: Commercial Art, Graphic Communications Technology; Heavy Equipment-Diesel Mechanics; Machine and Manufacturing Trades; Machining Technology; Manufacturing Technology; Welding.

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

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

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

Other Mesa State College service areas include:

Area Vocational School — Coordinates the various 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.)

- Early Childhood Education
(Emphases available in numerous disciplines)

Associate of Science (A.S.)

- (Emphases available in numerous disciplines)
- Nursing

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

- Auto Body and Fender
- Automotive Mechanics
- Business Computer Information Systems
- Civil Engineering Technology
- Electronics Technology
- Environmental Restoration (pending approval)
- Graphic Communications
 - Commercial Art
 - Graphic Communications Technology
- Machining Technology
- Office Supervision and Management
 - Accounting Technician
 - Administrative Secretary
 - Legal Secretary
 - Medical Secretary
- Radiologic Technology
- Travel, Recreation, and Hospitality
- Welding

Certificate Programs

- Auto Body Repair
- Automotive Mechanics
- Data Processing
- Drafting Technology
- Early Childhood Education
- Electric Lineworker
- Electronics Technology
- Farm and Ranch Business Management
- Heavy Equipment/Diesel Mechanics
- Legal Assistant Program (offered through Continuing Education, requires a baccalaureate degree or three years related work experience)
- Machine and Manufacturing Trades
- Office Supervision and Management
 - Legal Secretary
 - Medical Office Assistant
 - Office Clerical-Secretary
 - Word Processing
- Welding

Consortium Programs**Master of Arts (M.A.)**

- Elementary Education (Western State College) (Contact School of Social and Behavioral Sciences)
- Guidance and Counseling (Adams State College) (Contact School of Social and Behavioral Sciences)

Master of Business Administration (M.B.A.) (Contact School of Business)**Teacher Certification**

- Elementary (Metropolitan State College)
- Secondary (Metropolitan State College)

Certification to teach in secondary schools or in elementary schools can be obtained at Mesa State College. This can be done by earning a bachelor's degree with an appropriate emphasis from Mesa State College while also earning credit in prescribed Metropolitan State College professional education courses taught on the Mesa State College campus. Certification is thus from Metropolitan State College. Details of these programs were not available when the catalog went to press but may be obtained from the Dean, School of Social and Behavioral Sciences.

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 in 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 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 academic schools of Mesa State College.

ADMISSION INFORMATION

Admission to Mesa State College

Mesa State College will accept applications from all qualified individuals who will benefit from and contribute to the educational environment at Mesa State College.

Applicants seeking admission to Mesa State College will be carefully considered on the basis of *all* available information. Applicants to degree or certificate programs may apply for admission any time after completion of their junior year of high school and *up to two weeks prior to the first day of classes for any given semester*. An application for admission to Mesa State College may be obtained from any Colorado high school counselor or be requested from the Mesa State College Admissions Office. To request an application from Mesa State College, call toll free 1-800-982-MESA (in Colorado) or 303-248-1376 outside of Colorado.

Applications will be carefully reviewed. Students applying for baccalaureate degree programs who do not meet the program requirements will be considered for admission on a case-by-case basis. Students not accepted into a baccalaureate program may be admitted into an associate or certificate program for which they qualify. Certain associate and certificate programs may have entrance requirements which must be met prior to admission to those programs. General admission to Mesa State College does not constitute nor guarantee acceptance into specific programs. Students will be notified by official letter of their status and may 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.

Immunization Policy

All students who attend classes on the Mesa State College campus must have filed 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 may not be allowed to attend classes should an outbreak of measles or rubella occur.

Selective Service

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

Student Classifications

High school students

1. Obtain and complete an application for admission to Mesa State College.
2. Request a high school counselor to complete and sign the high school information section of the application.
3. Submit the completed application along with a non-refundable \$10 application fee.
4. Request that the high school counselor forward official transcripts directly to the Mesa State College Admissions Office.
5. Take either the American College Test (ACT) (preferred) or Scholastic Aptitude Test (SAT) and have the results sent directly to Mesa State College.

In general, applicants applying for a baccalaureate program having earned a minimum grade point average of 2.50 along with a composite score of 19 on the ACT, a composite score of 21 on the Enhanced ACT, or 810 combined on the SAT may be admitted 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 \$10 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 \$10 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, 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.) ACT or SAT test scores will also be required.

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 be automatically 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.
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.

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

Non-Degree Seeking Students

Students who do not wish to pursue a degree 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.

Concurrent Students

High school students 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. An application for admission and a non-refundable \$10 application fee.
2. A Concurrent Enrollment form.
3. 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.

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 \$10 non-refundable application fee for regular admission or \$35 fee for admission to the Mesa State College 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 also 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 500 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.

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 \$11,000 per calendar year.

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 to be admitted into the Selected Studies Program. Academic areas such as Physical Education, student/advisor designed programs, and Social Studies with the intention of teaching at the secondary level are included in the Selected Studies program. Once a student has completed fifteen (15) 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 of Social and Behavioral Sciences.

Transfer students who are applying for academic programs in the Selected Studies Program will receive an application from the Admissions Office to apply for the Selected Studies Program. The Selected Studies application must be returned to the Dean of the School of Social and Behavioral Science within two weeks. The students will be notified in writing as to their acceptance or denial into the Selected Studies Program by the Dean of the School of Social and Behavioral Sciences. Transfer students must have earned at least 15 college level semester hours with a minimum cumulative grade point average of 2.50 to be considered for admission into the Selected Studies program.

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 benefit check is to be received prior to registration. 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. Two months 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.

Admissions and Counseling Tests

Scores from either the ACT (preferred) or the SAT are required of students attending Mesa State College. Test scores must be on file in the Admissions office before official acceptance is granted. 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 the Early Childhood Education Program and 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.

There are some exceptions and exemptions to this admissions requirement. Students who may be exempt from submitting their ACT or SAT scores as part of their admission requirement include those who are:

1. Enrolled only in non-credit classes offered through Continuing Education.
2. Enrolled in a certificate program of one year or less.
3. 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 applications to the School of Nursing and Allied Health and any other programs that may include the ACT or SAT as an entrance requirement.
4. Students who have already earned an associate or baccalaureate degree at another accredited institution.
5. Non-degree seeking students.

When a student wishes to become degree seeking or desires a change of program to one requiring ACT or SAT scores, the student *must* submit ACT or SAT scores and must comply with any other entrance requirement to the new program.

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.

A special residual ACT test is scheduled prior to registration each semester for applicants who did not take the ACT on one of the national test dates. A testing fee of \$15.00 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.

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.

Assessment

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."

Non-Traditional Credit

Non-traditional credit can be earned from any of the following sources:

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 examinations currently are given in art, biology, chemistry, computer science, English, French, German, history, Latin, mathematics, music, physics and Spanish. The Registrar's office will supply information concerning the scores required for earning academic credit or advanced placement in the various subject areas.

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 or be enrolled in twelve credit hours before challenge credits will be recorded on a transcript. Maximum credit by examination:

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 Bachelor's degree or an Associate of Applied Science degree and a maximum of 12 credit hours for an Associate of Arts degree or Associate of Science degree.
3. Advanced placement — maximum of 30 credit hours for a baccalaureate degree or 15 credit hours for an associate degree.
4. Competency credit — maximum of 30 credit hours towards a baccalaureate degree or 25 percent of the credit required for the program towards an associate degree. Further restrictions apply. See the Registrar for details and guidelines.

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

1. Baccalaureate — 30 credits
2. Associate of Science or Associate of Arts — 15 credits
3. Associate of Applied Science — 20 credits

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.

Withdrawal Procedures

Withdrawal from One or More Classes

During the fall and spring semester students are permitted to withdraw from one or more classes up to five days after the first day mid-term grades are available to students from faculty advisers. Withdrawal from modular classes (less than full semester duration) and summer session classes is permitted up to the mid-point of those classes. Proper forms and signatures are required and must be turned in to the Registrar's office. Forms are available at the Registrar's office or 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 Business office. (See refund policy.) **The necessary withdrawal papers must be filled out by the student and officially signed by the Cashier.** Such withdrawal may be made at any time during the semester prior to the sixth day after mid-term grades are posted and available to students from their faculty advisers. 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.

EXPENSES AT MESA STATE COLLEGE

Mesa State College reserves the right to adjust any and all charges, including fees, tuition, 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 1990-92 academic years had not been determined when this catalog was printed. The following estimated rates are presented for planning purposes only. Students are invited to write for the most current rates, available in July each year.

Tuition and Fee Schedule

(Estimate for 1990-91)*

Full-Time Students, Regular Academic Year:	Semester*	Year*
Colorado Residents (enrolled in 10 or more hours)		
Tuition.....	\$ 561.00	\$1122.00
Student Services Fees.....	140.00	280.00
TOTAL.....	\$ 701.00	\$1402.00
Non-Colorado Residents (enrolled in 10 or more hours)		
Tuition.....	\$1688.00	\$3376.00
Student Services Fees.....	140.00	280.00
TOTAL.....	\$1828.00	\$3656.00
Part-Time Students, Regular Academic Year:		
Colorado Residents (enrolled in 9 or fewer hours)		
Tuition per semester hour.....		\$ 56.00
Student Services Fees per semester hour.....		10.00
TOTAL.....		66.00
Non-Colorado Residents (enrolled in 9 or fewer hours)		
Tuition per semester hour.....		\$ 150.00
Student Services Fees per semester hour.....		10.00
TOTAL.....		\$ 160.00

Summer Session

Tuition charges equal those for the regular fall or spring semesters; however, student services fees are \$6.00 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

Freshmen students who are under 21 years of age and not residing with their parents in Mesa County are required to live on campus. Students may qualify for exemption from the on-campus requirement for definite reasons expressed in writing and approved by the Director of Housing under the following conditions:

1. If you are married; or
2. If you are 21 years of age or older; or
3. If you are a part-time student (enrolled for less than 10 hours per semester); or
4. If you are residing at the permanent address of your parents, step-parents, grandparents, or legal guardian; or
5. If you have obtained sophomore class standing since the preceding semester; or
6. If you have resided in the residence halls for two semesters and have not obtained sophomore class status; or
7. If you are 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 \$100 reservation deposit with their signed contract. Rooms will be assigned in the summer and each student will be notified by early August as to room and hall 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 "Terms and Conditions of Occupancy" 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 four meal plans: 6 meals plus \$130 in munch money (defined below), 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 breaks and vacations 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. One term contracts are available at 60% of the academic year total. Room and board rates for 1990-92 academic years had not been determined when this catalog was printed. The following schedule reflects estimated rates for 1990-91.*

	Fall*	Spring*	Total*
Apartments:			
2 bedrooms, 3 students	\$ 950.00	\$ 635.00	\$1585.00 per student
3 bedrooms, 4 students	\$ 950.00	\$ 635.00	\$1585.00 per student

Residence Halls:

Double occupancy	\$ 825.00	\$ 550.00	\$1375.00 per student
Single occupancy	\$1111.00	\$ 740.00	\$1851.00 per student

*For 1991-92 estimate, increase these rates by 5 percent.

Board:

(Available to all students; mandatory for dorm residents)

19 meal plan	\$ 775.00	\$1550.00
15 meal plan	\$ 741.00	\$1482.00
10 meal plan	\$ 714.00	\$1428.00
6 meal plan plus \$130 in script	\$ 714.00	\$1428.00

Room Refunds

The schedule for room refunds are outlined in the Housing Contract Terms and Conditions.

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, less returned coupons. 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	7:45 a.m. to 4:30 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 \$120 per semester for one lesson each week. 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)	\$ 10.00
Valid only for the semester for which the student makes application.	

Miscellaneous Fees

Graduation (diploma, application processing)	10.00
Room damage deposit	100.00
Parking permit (per year)	15.00
Student health insurance per semester (subject to change)	93.00
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.

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 the American College Testing (ACT) Needs Analysis System whose application is the Family Financial Statement (FFS).

Financial aid awards, based on need, 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 dependent minor. 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.

Colorado Student-Aid Programs

(Available to full-time and half-time students. Half-time students will be considered for assistance only when the needs of full-time students have been met.)

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. Students who receive Colorado Scholarships and who do not wish to apply for other financial aid may contact the Mesa State College Job Placement Officer for assistance in seeking employment off campus.
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.

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 short-term loan funds from which students may borrow to help meet temporary financial obligations. By definition, short-term loans are repayable within 60 days or by the end of the semester, whichever comes first. A service charge is required for loans made from this fund: \$4 per \$100 borrowed and \$4 for any fraction over \$100. For loans exceeding \$200, cosigners may be required.

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 (if accommodations are available) 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 the ACT Needs Analysis (FIS) 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 Family Financial Statement (FFS) of the American College Testing Program. 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 should 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

The college setting 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.

Student 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 entire period of enrollment.

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.

Student Activities

To broaden students' educational experience and to provide students opportunities to meet other students with similar interests, Mesa State College offers a large variety of student activities on campus. Included are activities such as the following:

Academic, Professional, and Honors Societies

Fine Arts Activities (drama, dance, art, and music groups)

Intercollegiate athletics (men's football, basketball, tennis, wrestling, and baseball; and women's basketball, tennis, softball, and cross-country)

Intramural Sports Program and Recreational Facilities

Multi-Cultural and Minority Support Groups

Outdoor Recreation Program of Trips and Rentals

Residence Hall Association

Special Interest Student Organizations

Student Media Organizations (Newspaper, Radio, and Literary)

Student Government

Participation in student media groups allows students to increase their skills in their chosen field and to utilize the latest equipment employed by working professionals. These groups include the student newspaper, *The Criterion*, the student radio station, KMSA 91.3 FM, and the literary and art publication, *Literary Review*.

The Student Body Association (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, offering student orientation programs, and more.

Student organizations at Mesa State College 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 field of interest. There are also over 20 special interest groups on campus (ski club, soccer club, karate club, for example) which allow students to meet other students who share a similar interest.

The Mesa State Activities Council (MSAC) is a student run organization which offers entertainment activities for students. Entertainment activities include concerts, lectures, films, performing artists, and more. Recent artists and speakers sponsored by MSAC have included musician Robert Palmer, comedians Eino Philips and Judy Tenuta, the Chinese Golden Dragon Acrobats, ABC Nightline correspondent Jeff Greenfield, and attorney, Sarah Weddington.

Even if students may not be pursuing an arts degree, they may audition for plays, join a musical group, or participate in a dance performance. Performances in the arts are highly regarded at Mesa State and well-attended by students and the community.

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 experience 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.

Student Life Center

The Center is committed to helping teach life skills and helping students make the adjustment to college life. The Student Life Center offers the following services:

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.* Short-term psychological counseling services, crisis intervention, developmental groups, and supportive counseling are available to students at no charge. Assessment and referral to local mental health and drug and alcohol treatment services is provided for those students requiring treatment.
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.
5. *Multi-cultural Affairs.* 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.

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 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.

The College Center

Located in the main artery of the campus, the W. W. Campbell College Center serves as a meeting place for many Mesa State College students, faculty, and staff members. The College Center Advisory Board, the Student Body Association and the Mesa State College Activities Council help to make the Center the hub of cultural, recreational, and social activities throughout the year. The College Center Advisory Board acts in areas of college community concern, and proposes appropriate recommendations to the College Center staff. In addition to housing offices for the Student Body Association, Activities Council and various student publications, the College Center includes an art gallery, cafeteria, snack bar, bookstore, meeting rooms of various sizes, a multi-purpose room for special events, an active games room, and a student lounge.

The Mesa State Outdoors program (MSOP), an extensive program to facilitate out-of-doors activities, such as camping and cross-country skiing, is administered through the College Center.

Mesa State College Day-Care Center

Day care is available for children of Mesa State College students. A minimum fee is charged by the hour or by the day for children 2 to 5 years of age. For further information, contact the Mesa State College Day Care Director.

GENERAL ACADEMIC REGULATIONS

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. Midterm and 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.

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. This includes grades transferred, together with those earned at Mesa State College. 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
<hr style="border: 0.5px solid black;"/>	
15 Semester Hours	30 points

30 points divided by 15 semester hours = 2.00 GPA

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. When a student repeats a course previously taken at Mesa State College, only the last grade received is used in computing the cumulative grade-point average and only the credits earned the last time the class is taken can be used to fulfill requirements for the degree. 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 ("I") and In Progress ("IP") grades are tentative grades and until changed are not considered in computing either the cumulative grade-point average or the grade-point average for the particular semester concerned. Students are considered to be making "satisfactory progress" toward a degree if they attain a cumulative GPA consistent with the table listed below.

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.

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.

Absences may be excused when incurred because of a student's participation in required field trips, intercollegiate games, or other trips arranged by the College only if previously approved by the Office of Student Affairs. The coach, instructor or other official whose activities require students to be absent from classes shall file 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.

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.

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 discipline and independent thinking. It is expected that the student will engage in intensive study and research of the topic.

Independent study satisfies neither general education requirements nor specific course requirements. *Independent study hours are elective hours only.* Independent study is available only to students at the junior and senior levels except in certificate and AAS programs.

To be eligible for independent study, a student must have a minimum of 8 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 no more than 6 semester credit hours 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.

Student Load and Limitations

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

Students receiving scholarships and/or financial aid are generally expected to complete 12 hours of credit courses each semester.

In order to receive full Veteran's Administration financial benefits, veterans must be enrolled in 12 or more semester hours each semester of attendance.

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.

Honor Lists

The President's List is made up of those students who earn a grade point average 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.

The **Mesa State College Nursing Honor Society** has five goals addressing superior scholastic achievement: development of 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.

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 Western Colorado*.

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 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 **Tri Beta**. For full membership in Tri 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.

Late Registration

Late registering students must check with the Business Office for their Statement of Account before registrations 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. A special fee may be charged for late registration.

Incomplete and in Progress Grades

Incomplete ("I") and In Progress ("IP") grades are temporary grades given *only in an emergency case* and at the discretion of the instructor. At the end of the term following the one in which the "I" is given, the "I" becomes a permanent grade of A, B, C, D, or F (an "I" grade given spring term becomes a permanent grade at the end of the following fall term). At the end of two terms following the one in which the "IP" grade is given, the "IP" becomes a permanent grade of A, B, C, D, or F (an "IP" grade given spring term becomes a permanent grade the following spring term). If the student receiving an "I" or "IP" completes the work as specified, the "I" or "IP" grade is changed by the instructor to the grade the student has earned. If the student does not complete the work, the "I" or "IP" automatically becomes the grade specified by the instructor on the "Incomplete Grade Report" filed with the Records office. The student must be enrolled during the semester in which the work is completed.

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.

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.

A first suspension will be for a period of one semester (fall or spring) following any semester a student on probation fails to maintain a 2.00 semester grade point average. Subsequent suspensions will be for one calendar year.

These probation/suspension policies apply to all classes taken at Mesa State College for credit regardless of the number of hours being taken.

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 department and faculty adviser.

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

Requirements For All Degrees

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).

Transfer

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.

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. If an interruption in enrollment of more than one semester (excluding summers) occurs, 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.

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.

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.

Bachelor's Degree Requirements

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

Credit

A minimum of 120 semester credit hours in approved coursework plus 4 activity physical education credit hours (120 semester credit hours in approved coursework 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 and higher and 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.

Degree Distinctions

A. BS and BBA

Candidates for the BS and BBA 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. BA

Candidates for the BA degree shall complete at least six semester hours of a foreign language, since it is increasingly important that college graduates have knowledge of more than one language to foster understanding of a culture's history, values, and geography. Fluency in a foreign language is not expected, but basic survival and social skills can be realized. At least one year of study in a modern language other than English will constitute the distinction for the bachelor of arts degree. 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.

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 2.0 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.

Physical Education

Four semester hours must be earned in physical education activity courses. This requirement must be satisfied with PHYE courses numbered between 100 and 199 encompassing at least three different activities and with not more than one taken 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.

General Education

A minimum of 40 semester hours credit must be earned in General Education areas which may be chosen in the following subject areas:

- 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 126 and 127.)
- 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 & Lab
BIOL 102, 102L	General Biology & Lab
BIOL 105, 105L	Attributes of Living Systems & Lab
BIOL 106, 106L	Principles of Animal Biology & Lab
BIOL 107, 107L	Principles of Plant Biology & Lab
BIOL 141, 141L	Human Anatomy & Physiology & Lab

Both the lecture and lab 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	Water Media
ARTE 211, 212	Art History

Fine Arts

FINE 101	Man Creates
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Music

MUSA 110	Standard Notation
MUSA 114, 115	Theory I & II
MUSA 130	Class Piano I
MUSA 220	Music Appreciation
MUSA 270, 271	Music Theatre

Speech

SPCH 101	Interpersonal Communications
SPCH 102	Speechmaking
SPCH 241	Oral Interpretation

Theatre

THEA 115	Problems in Modern Theatre
THEA 141	Theatre Appreciation
THEA 145	Introduction to Drama

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 & Lab
CHEM 122 & 122L	Introduction to Organic Chemistry & Lab
CHEM 131 & 131L	General Chemistry & Lab
CHEM 132 & 132L	General Inorganic Chemistry & Lab

Both the lecture and lab 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 & Lab
CSCI 133 & 133L	Pascal Programming & Lab
CSCI 250	Data Structures

Both the lecture and lab 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 101, 102	Introduction to Geology
GEOL 101L, 102L	Introduction to Geology Lab
GEOL 103	Weather & Climate
GEOL 105	Geology of Colorado
GEOL 111 & 111L	Principles of Physical Geology & Lab
GEOL 112 & 112L	Principles of Historical Geology & Lab
GEOL 201 & 201L	Stratigraphy & Lab
GEOL 203	Introduction to Environmental Geology

Both the lecture and lab 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 & Lab
PHYS 112 & 112L	General Physics & Lab
PHYS 121	Classical Physics I
PHYS 122 & 122L	Classical Physics II & Experimental Mechanics Lab
PHYS 224	Modern Physics

Both the lecture and lab 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
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History

HIST 101, 102	Western Civilizations
HIST 120	History of Colorado
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, 102	American Government
POLS 256	State and Local Government
POLS 261	Comparative Governments

Social Science

SOCI 210	Religion in the American Experience
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Sociology

SOCO 144	Marriage and the Family
SOCO 260	General Sociology
SOCO 264	Social Problems

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.

Minimum Credit for a second bachelor's degree

A student seeking a second bachelor's 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.

Associate Degree Requirements

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

Credit

A minimum of 60 semester credit hours in approved coursework plus 4 activity physical education credit hours (60 semester credit hours of approved coursework 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 must be achieved.

Residency

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

Physical Education

Four semester credit hours must be earned in physical education activity courses. This requirement must be satisfied with PHYE courses numbered between 100 and 199 encompassing at least three different activities and with no more than one taken in the same module. This is not required of persons twenty-five or more years of age at the time of Mesa State College matriculation or of veterans of military service.

General Education Courses required for all Associate Degrees

English Composition, 6 semester hours. (Usually satisfied with ENGW 111 and 112, but in a few programs with ENGW 111 and 115, or, for those who qualify, with ENGW 126 and 127.) For *Associate of Applied Science* degrees this requirement also can be satisfied with one of the following sequences: ENGW 086 and 087, ENGW 090 and 115, ENGW 087 and 111, ENGW 086 and 115, ENGW 111 and 121, or ENGW 086 and 121.

Additional Requirements for A.A. degree:

SEMESTER HOURS

*General Education:

Literature and Humanities	6
Physical Science or Math	6
Social Science	6
Biology or Psychology	6
Approved electives	30

Additional Requirements for A.S. degree:

*General Education:

Social Science or Literature	6
(Associate Degree Nursing requires PSYC 121 or PHYC 122, General Psychology)	
Laboratory Science, Computer Science, Statistics or Mathematics	26
Approved electives	22

Additional Requirements for A.A.S. degree:

*Social or Behavioral Science or Literature	6
Occupational Education program courses	varies

*From courses listed under General Education choices for bachelor's degree requirements.

Vocational Credits

Usually, no more than six semester hours of vocational credits may be applied toward the A.A. and A.S. degrees.

Minimum Credit for a second associate degree

A student seeking a second associate degree at Mesa State College must earn a minimum of 15 semester hours of credit with a minimum of one semester of residence at Mesa State College after the award of the first degree. In addition, the student must satisfy all specific requirements for the new degree.

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 field of emphasis will not be counted toward satisfying certificate requirements.

SCHOOL OF BUSINESS

Dale L. Dickson, Dean

Departments
and
Faculties

Accounting and Computer Information Systems
P. Bettelli, E. Bochler, J. Buckley,
D. Mariner, B. McMechen, D. Rogers (Chair)
Business Administration
D. Dickson, B. Heath, B. Mayer,
H. B. McIntire, J. Moore, T. Ralser
R. Youngquist
Office Administration
T. Capps, M. Myers (Chair), M. Zimmerman

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

Areas of Emphasis: 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

Areas of Emphasis:	Data Processing
	*Legal Assistant
	Office Supervision and Management
	Legal Secretary
	Medical Office Assistant
	Office Clerical
	Word Processing

*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):

<i>Areas of Study Emphases Available</i>	<i>Degrees/Certificates</i>	<i>Details</i>
Accounting	AAS, BS	p.
Business Administration	AA, AAS, BBA, Certificate	p.
Office Supervision & Management	AA, AAS, Certificate	p.

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 YOUR ACADEMIC ADVISER OR FROM THE ACADEMIC DEPARTMENT OFFERING THE PROGRAM.

ACCOUNTING: BUSINESS COMPUTER INFORMATION SYSTEMS _____

(Bachelor of Science in Accounting)

DEGREE REQUIREMENTS:

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

ACCT 201	(3)	CISB 103	(1)
ACCT 202	(3)	CISB 105	(1)
ACCT 321	(4)	CISB 205	(3)
ACCT 322	(4)	BUGB 351	(3)
ACCT 401	(3)	BUGB 352	(3)
ACCT 441	(5)	MANG 201	(3)
CISB 102	(1)	MANG 491	(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 472	(3)	CISB 471	(3)
CISB 104	(1)	MANG 491	(3)

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:	
		Sem	Sem
Fall Semester	Hrs	Spring Semester	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	
*MATH 113 College Algebra or		ENGW 115 Technical Writing	3
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:	
		Sem	Sem
Fall Semester	Hrs	Spring Semester	Hrs
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	*Social Science	3
*General Ed (Suggest STAT 214)	3	CISB 205 Adv Business Software	3
*Literature	3	*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. 37-39 for listing of approved general education courses.

ACCOUNTING: MANAGERIAL ACCOUNTING

(Bachelor of Science in Accounting)

DEGREE REQUIREMENTS:

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

ACCT 201	(3)	BUGB 352	(3)
ACCT 202	(3)	CISB 102	(1)
ACCT 321	(4)	CISB 103	(1)
ACCT 322	(4)	CISB 105	(1)
ACCT 401	(3)	CISB 205	(3)
ACCT 441	(3)	MANG 201	(3)
BUGB 351	(5)	MANG 491	(3)
- Required Emphasis Courses:* (24 hrs.)

ACCT 331	(3)	FINA 339	(4)
ACCT 332	(3)	MANG 421	(3)
ACCT 423	(3)	MANG 491	(3)
ACCT 442	(5)	MANG Upper Division	(3)

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:	
		Sem	Sem
<i>Fall Semester</i>	Hrs	<i>Spring Semester</i>	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 111 English Composition.....	3	ENGW 115 Technical Writing.....	3
*MATH 113 College Algebra or		*Math or Physical Science.....	3
a higher Math.....	3-4	*Psychology or Biology.....	3
*Psychology or Biology.....	3	*General Ed (Suggest SPCH 102).....	3

		Second Year:	
		<i>Spring Semester</i>	
<i>Fall Semester</i>			
ECON 201 Prin of Macroeconomics.....	3	ECON 202 Prin of Microeconomics.....	3
Elective.....	3	*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	Electives.....	3
PE Activity, 1st mod.....	1	PE Activity, 1st mod.....	1
PE Activity, 2nd mod.....	1	PE Activity, 2nd mod.....	1

*See pp. 37-39 for listing of approved general education courses.

ACCOUNTING: PUBLIC ACCOUNTING

(Bachelor of Science in Accounting)

DEGREE REQUIREMENTS:

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

ACCT 201 (3)	BUGB 352 (3)
ACCT 202 (3)	CISB 102 (1)
ACCT 321 (4)	CISB 103 (1)
ACCT 322 (4)	CISB 105 (1)
ACCT 401 (3)	CISB 205 (3)
ACCT 441 (5)	MANG 201 (3)
ACCT 351 (3)	MANG 491 (3)
- Required Emphasis Courses:* (22 hrs.)

ACCT 331 (3)	ACCT 411 (3)
ACCT 332 (3)	ACCT 442 (5)
ACCT 402 (5)	ACCT 472 (3)
- Electives:* (18 hrs. — minimum of 2 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:			
<i>Fall Semester</i>	<i>Sem</i>	<i>Spring Semester</i>	<i>Sem</i>
	<i>Hrs</i>		<i>Hrs</i>
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 111 English Composition.....	3	ENGW 115 Technical Writing.....	3
*MATH 113 College Algebra or		*Math or Physical Science.....	3
a higher Math.....	3-4	*Psychology or Biology.....	3
*Psychology or Biology.....	3	*General Ed (Suggest SPCII 102).....	3

Second Year:			
<i>Fall Semester</i>		<i>Spring Semester</i>	
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
Elective.....	3	Electives.....	3
PE Activity, 1st mod.....	1	PE Activity, 1st mod.....	1
PE Activity, 2nd mod.....	1	PE Activity, 2nd mod.....	1

*See pp. 37-39 for listing of approved general education courses.

**BUSINESS ADMINISTRATION: ADMINISTRATIVE OFFICE
MANAGEMENT**

(Bachelor of Business Administration)

DEGREE REQUIREMENTS:

- 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)
- 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 of	
		Bus electives	(6)
- Required Emphasis Courses:* (22 hrs.)

OPAD courses approved by adviser	(16)
Upper Division Business Courses	(6)
- Electives:* (18 hrs. upper division)
- 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:		
		Sem		Sem
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>		<i>Hrs</i>
CISB 102 Computer Literacy	1	ENGW 112 English Composition or		
CISB 103 Computer Concepts	1	ENGW 115 Technical Writing	3	
CISB 104 BASIC Programming or		*Humanities	3	
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:

<i>Fall Semester</i>		<i>Spring Semester</i>	
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. 37-39 for listing of approved general education courses.

BUSINESS ADMINISTRATION

(Associate of Arts)

DEGREE REQUIREMENTS:

1. *General Education:* (30 hrs. plus 4 hrs. physical education)
 - ENGW 111 and 112 (6)
 - *Literature (6)
 - *Social Sciences (6)
 - *Natural Sciences and Math (6)
 - *Biology and Psychology (6)
 - Physical Ed. Activity (4)
2. *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)		
3. *Electives:* (15-16 hrs.)

SUGGESTED COURSE SEQUENCING:

		First Year:		
		Sem		Sem
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>		<i>Hrs</i>
BUGB 101 Intro to Business	3	BUGB 211 Bus Communications	3	
Elective (Suggest SPCH 102		CISB 102 Computer Literacy	1	
Speechmaking)	3	CISB 103 Computer Concepts	1	
ENGW 111 English Composition	3	CISB 104 BASIC Programming or		
MATH 113 College Algebra or		CISB 105 Intro to Bus Software	1	
MATH 121 Math Found of Bus	3-4	ENGW 112 English Composition	3	
*Psychology or Biology	3	MATH 121 Math Foundations of Bus or		
PE Activity	1	STAT 214 Business Statistics	3	
		*Psychology or Biology	3	
		PE Activity	1	

Second Year:

Fall Semester

ACCT 201 Prin of Accounting I	3
ECON 201 Prin of Macroeconomics	3
Elective (Suggest MANG 201 Prin of Management)	3
Elective (Suggest STAT 214 Business Statistics)	3
Literature	3
PE Activity	1

Spring Semester

ACCT 202 Prin of Accounting II	3
ECON 202 Prin of Microeconomics	3
Electives	6
*Literature	3
PE Activity	1

*See pp. 37-39 for listing of approved general education courses.

BUSINESS ADMINISTRATION: BUSINESS/ECONOMICS

(Bachelor of Business Administration)

DEGREE REQUIREMENTS:

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

ACCT 201	(3)	CISB 103	(1)
ACCT 202	(3)	CISB 104 or 105	(1)
ACCT 311, 321 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 Business electives	(6)
- 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)
- Electives:* (16 hrs. — 12 hrs. selected from designated options and 3 hrs. general electives)
- 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:	
		Sem	Sem
Fall Semester	Hrs	Spring Semester	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		MATH 121 Math Foundations of	
CISB 105 Intro to Bus Software	1	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. 37-39 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 115 (6)
 - *Social Science (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	(3)
CISB 105	(1)		
3. *Other Course Requirements:* (6 hrs.)
 - MATH 127 (3)
 - SPCII 102 (3)
4. *Electives:* (17 hrs.)

SUGGESTED COURSE SEQUENCING:

		First Year:				
<i>Fall Semester</i>		<i>Sem</i>	<i>Con</i>	<i>Sem</i>	<i>Con</i>	
		<i>Hrs</i>	<i>Hrs</i>	<i>Hrs</i>	<i>Hrs</i>	
ACCT 201 Prin of Accounting I ...	3	47		ACCT 202 Prin of Accounting II ...	3	47
CISB 102 Computer Literacy ...	1	16		Elective	3	47
CISB 103 Computer Concepts ...	1	16		ENGW 115 Technical Writing ...	3	47
CISB 104 BASIC Programming ...	1	16		MATH 127 Math of Finance ...	3	47
CISB 105 Intro to Bus Software ...	1	16		SPCH 102 Speechmaking ...	3	47
Elective (Suggest MATH 121 Math				PE Activity	1	24
Foundations of Bus)	3	47				259
ENGW 111 English Composition ...	3	47				
MANG 201 Prin of Management ...	3	47				
PE Activity	1	24				
		276				

		Second Year:				
<i>Fall Semester</i>				<i>Spring Semester</i>		
Elective	3	47		Business electives approved		
Electives: (Suggest				by adviser	6	94
CSCI 131 FORTRAN Program.) ...	3	47		CISB 205 Adv Business Software ...	3	47
STAT 214 Business Statistics ...	3	47		CISB 231 COBOL Program. II ...	3	47
CISB 131 COBAL Program.	3	47		*Social Science (Suggest ECON 202		
*Social Science (Suggest ECON 201				Prin of Microeconomics)	3	47
Prin of Macroeconomics)	3	47		PE Activity	1	24
PE Activity, 1st mod	1	24				259
		259				

*See pp. 37-39 for listing of approved general education courses.

BUSINESS ADMINISTRATION: BUSINESS COMPUTER INFORMATION SYSTEMS

(Bachelor of Business Administration)

DEGREE REQUIREMENTS:

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

ACCT 201	(3)	CISB 103	(1)
ACCT 202	(3)	CISB 104	(1)
ACCT 311, 321 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)
- 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:	
		Sem	Sem
<i>Fall Semester</i>	Hrs	<i>Spring Semester</i>	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	
CISB 103 Computer Concepts	1	ENGW 115 Technical Writing	3
CISB 104 BASIC Programming	1	MANG 201 Prin of Management	3
ENGW 111 English Composition	3	*MATH 121 Math Foundations of Bus	3
*MATH 113 College Algebra or		*SPCH 102 Speechmaking	3
MATH 127 Math of Finance	3-4	PE Activity	1
PE Activity	1		

		Second Year:	
		Spring Semester	
<i>Fall Semester</i>		<i>Spring Semester</i>	
*Biology and Psychology	6	*Biology or Psychology	3
CISB 131 COBOL Programming I	3	Business Electives-Lower Division	3
*Social Science (Suggest ECON 201		CISB 205 Adv Business Software	3
Prin of Macroeconomics)	3	CISB 231 COBOL Programming II	3
MARK 231 Prin of Marketing	3	*Social Science (Suggest ECON 202	
PE Activity	1	Prin of Microeconomics)	3
		PE Activity	1

*See pp. 37-39 for listing of approved general education courses.

DATA PROCESSING

(Certificate)

CERTIFICATE REQUIREMENTS: (31 hrs. consisting of 25 hrs. business and 6 hrs. English -- no deviation without course substitution approval by adviser)

SUGGESTED COURSE SEQUENCING:

		Sem	Con			Sem	Con
		Hrs	Hrs			Hrs	Hrs
<i>Fall Semester</i>				<i>Spring Semester</i>			
ACCT 201 Prin of Accounting I	3	47		ACCT 202 Prin of Accounting II	3	47	
BUGB 141 Business Math	3	47		BUGB 241 Income Tax	3	47	
CISB 102 Computer Literacy	1	16		ENGW 115 Technical Writing	3	47	
CISB 103 Computer Concepts	1	16		Computer Languages	6	94	
CISB 104 BASIC Programming	1	16				235	
CISB 105 Intro to Bus Software	1	16					
ENGW 111 English Composition	3	47					
MANG 201 Prin of Management	3	47					
		252					

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 311, 321 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:		
<i>Fall Semester</i>	<i>Sem</i>	<i>Spring Semester</i>	<i>Sem</i>
	<i>Hrs</i>		<i>Hrs</i>
BUGB 101 Intro to Business	3	ENGW 112 English Composition or	
CISB 102 Computer Literacy	1	ENGW 115 Technical Writing	3
CISB 103 Computer Concepts	1	*Humanities	3
CISB 104 BASIC Programming or		Business Elective	3
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		PE Activity	1
MATH 127 Math of Finance	3-4		
*Social Science	3		
PE Activity	1		

Second Year:

Fall Semester

ACCT 201 Prin of Accounting I	3
ECON 201 Prin of Macroeconomics	3
MARK 231 Prin of Marketing	3
*Psychology or Biology	3
STAT 214 Business Statistics	3
PE Activity, 1st mod	1

Spring Semester

ACCT 202 Prin of Accounting II	3
ECON 202 Prin of Microeconomics	3
MANG 201 Prin of Management	3
Business Elective	3
*Psychology or Biology	3
PE Activity, 1st mod	1

*See pp. 37-39 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 311, 321 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:

<i>Fall Semester</i>	<i>Sem</i> <i>Hrs</i>	<i>Spring Semester</i>	<i>Sem</i> <i>Hrs</i>
BUGB 101 Intro to Business	3	ENGW 112 English Composition or	
CISB 102 Computer Literacy	1	ENGW 115 Technical Writing	3
CISB 103 Computer Concepts	1	*Humanities	3
CISB 104 BASIC Programming or		Business Elective	3
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

ACCT 201 Prin of Accounting I.....	3
ECON 201 Prin of Macroeconomics.....	3
Business Elective.....	3
MARK 231 Prin of Marketing.....	3
*Social Science.....	3
PE Activity, 1st mod.....	1
PE Activity, 2nd mod.....	1

Spring Semester

ACCT 202 Prin of Accounting II.....	3
ECON 202 Prin of Microeconomics.....	3
MANG 201 Prin of Management.....	3
*Psychology or Biology.....	3
STAT 214 Business Statistics.....	3
PE Activity, 1st mod.....	1
PE Activity, 2nd mod.....	1

*See pp. 37-39 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 311, 321 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:

<i>Fall Semester</i>	<i>Sem</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Sem</i>	<i>Hrs</i>
BUGB 101 Intro to Business.....		3	ENGW 112 English Composition or		
CISB 102 Computer Literacy.....		1	ENGW 115 Technical Writing.....		3
CISB 103 Computer Concepts.....		1	*Humanities.....		3
CISB 104 BASIC Programming or			MANG 201 Prin of Management.....		3
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			PE Activity.....		1
MATH 127 Math of Finance.....		3-4			
*Psychology or Biology.....		3			
PE Activity.....		1			

Second Year:

Fall Semester

ACCT 201 Prin of Accounting I.....	3
ECON 201 Prin of Macroeconomics.....	3
Business Elective	3
MARK 135 Salesmanship	3
MARK 231 Prin of Marketing	3
PE Activity	1

Spring Semester

ACCT 202 Prin of Accounting II.....	3
ECON 202 Prin of Microeconomics.....	3
MARK 232 Advertising.....	3
*Psychology or Biology.....	3
STAT 214 Business Statistics	3
PE Activity	1

*See pp. 37-39 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 311, 321 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	
MANG 351	(3)	other elective approved	
		by adviser	(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:	
		Sem	Sem
<i>Fall Semester</i>	<i>Hrs</i>	<i>Hrs</i>	<i>Hrs</i>
BUGB 101 Intro to Business	3	ENGW 112 English Composition or	
CISB 102 Computer Literacy	1	ENGW 115 Technical Writing	3
CISB 103 Computer Concepts	1	*Humanities	3
CISB 104 BASIC Programming or		MANG 201 Prin of Management	3
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		PE Activity	1
MATH 127 Math of Finance	3-4		
*Psychology or Biology	3		
PE Activity	1		
Second Year:			
<i>Fall Semester</i>		<i>Spring Semester</i>	
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. 37-39 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	
CISB 102	(1)	Business electives	(6)
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. <i>Courses that need to be taken in general education or as an elective:</i>			
ECON 201	(3)	MATH 151	(3)
ECON 202	(3)	STAT 214	(3)

SUGGESTED COURSE SEQUENCING:

		First Year:	
		Sem	Sem
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
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 111 English Composition	3	ENGW 115 Technical Writing	3
*Natural Sciences & Math (Suggest		MANG 201 Prin of Management	3
MATH 119 Precalculus Math)	5	*Natural Sciences & Math (Suggest	
		MATH 151 Calculus I)	5
Second Year:			
<i>Fall Semester</i>		<i>Spring Semester</i>	
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	
CSCI 230 Assembly Language Prog	3	STAT 214 Business Statistics)	3
MARK 231 Prin of Marketing	3	CISB 231 COBOL Programming II	3
*Psychology or Biology	3	*Psychology and Biology	6
PE Activity, 1st mod	1	PE Activity, 1st mod	1
PE Activity, 2nd mod	1	PE Activity, 2nd mod	1
*See pp. 37-39 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)
HIST 120	(3)
Physical Ed. Activity	(4)
2. *Business Course Requirements*: (21 hrs. other than TRAV Courses.)

ACCT 201	(3)	CISB 103	(1)
BUGB 101	(3)	CISB 104 or I05	(1)
BUGB 141	(3)	MANG 121	(3)
BUGB 231	(3)	MARK 135	(3)
CISB 102	(1)		
3. *Travel, Recreation and Hospitality Management Courses*: (27 hrs.)

TRAV 101	(3)	TRAV 201	(3)
TRAV 102	(3)	TRAV 202	(3)
TRAV 103	(3)	TRAV 299	(12)
4. *Electives*: (9 hrs.)

SUGGESTED COURSE SEQUENCING:

		First Year:			
		<i>Sem</i>	<i>Con</i>		
<i>Fall Semester</i>	<i>Hrs</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Sem</i>	<i>Con</i>
				<i>Hrs</i>	<i>Hrs</i>
BUGB 101 Intro to Business	3	47	ENGW 115 Technical Writing	3	47
BUGB 141 Business Math	3	47	MANG 121 Human Rel. in Bus	3	47
ENGW 111 English Composition	3	47	TRAV 102 Travel Industry II	3	47
MARK 135 Salesmanship	3	47	TRAV 103 Travel and Tourism		
TRAV 101 Travel Industry I	3	47	Marketing Techniques	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
		<u>283</u>			<u>236</u>

Summer Session between First and Second Year:

TRAV 299 Internship12

		Second Year:			
		<i>Sem</i>	<i>Con</i>		
<i>Fall Semester</i>	<i>Hrs</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Sem</i>	<i>Con</i>
				<i>Hrs</i>	<i>Hrs</i>
ACCT 201 Prin of Accounting I	3	47	BUGB 231 Survey of Busi. Law	3	47
ECON 201 Prin of Macroeconomics or			CISB 102 Computer Literacy	1	16
PSYC 121 General Psychology	3	47	CISB 103 Computer Concepts	1	16
Elective	3	47	CISB 104 BASIC Programming or		
HIST 120 History of Colorado	3	47	CISB 105 Intro to Bus Software	1	47
TRAV 201 Management in the			Electives	5	94
Travel Industry I	3	47	TRAV 202 Management in the		
		<u>235</u>	Travel Industry II	3	47
					<u>236</u>

*See pp. 37-39 for listing of approved general education courses.

OFFICE ADMINISTRATION

(Associate of Arts)

DEGREE REQUIREMENTS:

1. *General Education: (30 hrs. plus 4 hrs. physical education)*

ENGW 111 and 112

(6)

*Literature

(6)

*Social Science

(6)

*Physical Science and Math

(6)

*Biology and Psychology

(6)

Physical Ed. Activity

(4)

2. *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)

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

OFAD 152 (3)

OFAD 264 (3)

OFAD 201 or 202 (3)

4. *Electives: (9 hrs.)*

SUGGESTED COURSE SEQUENCING:

		First Year:			
		<i>Sem</i>	<i>Con</i>		
<i>Fall Semester</i>	<i>Hrs</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Sem</i>	<i>Con</i>
				<i>Hrs</i>	<i>Hrs</i>
BUAC 201 Prin of Accounting I	3	47	ENGW 112 English Composition	3	47
ENGW 111 English Composition	3	47	OFAD 152 Doc Format/Skill Devel.	3	47
*Literature	3	47	OFAD 264 Word Info Proc.: Doc.	3	47
*Physical Science or Math (Suggest			*Physical Science or Math (Suggest		
MATH 113 College Algebra or			MATH 121 Math Foundations of		
MATH 121 Math Foundations of			Business or STAT 214 Business		
Business)	3-4	47-63	Statistics)	3	47
*Psychology or Biology	3	47	*Psychology or Biology	3	47
PE Activity, 1st mod	1	24	PE Activity, 1st mod	1	24
PR Activity, 2nd mod	1	24	PE Activity, 2nd mod	1	24
		283-299			283

		Second Year:			
<i>Fall Semester</i>		<i>Spring Semester</i>			
BUGB 211 Bus Communications	3	47	CISB 102 Computer Literacy	1	16
Elective	3	47	CISB 103 Computer Concepts	1	16
MANG 201 Prin of Management	3	47	CISB 104 BASIC Programming or		
*Literature	3	47	CISB 105 Intro to Bus Software.	1	16
*Social Science (Suggest ECON 201			Electives	6	94
Prin of Macroeconomics)	3	47	OFAD 201 Office Management or		
		235	OFAD 202 Records Mgmt.	3	47
			*Social Science (Suggest ECON 202		
			Prin of Microeconomics)	3	47
					236

*See pp. 37-39 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 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,
OFAD 101 (3)	121 or 127 (3,4)
OFAD 201 (3)	BUGB 211 (3)
OFAD 202 (3)	BUGB 231 (3)
OFAD 264 (3)	BUGB 241 (3)
OFAD 270 (3)	MANG 121 (3)
ACCT 201 (3)	MANG 201 (3)
3. *Other Course Requirements:* (6 hrs.)

ECON 201 (3)	ECON 202 (3)
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SUGGESTED COURSE SEQUENCING:

		First Year:			
		<i>Sem</i>	<i>Con</i>		
<i>Fall Semester</i>	<i>Hrs</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Sem</i>	<i>Con</i>
				<i>Hrs</i>	<i>Hrs</i>
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		
CISB 104 BASIC Programming or			ENGW 115 Technical Writing ...	3	47
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			OFAD 264 Word Info Processing...3		47
or Psychology	3	47	PE Activity, 1st mod	1	24
OFAD 101 Bkping for Small Bus .3	47		PE Activity, 2nd mod	1	24
Business Elective	2	32			283
PE Activity, 1st mod	1	24			
PE Activity, 2nd mod	1	24			
		269			

		Second Year:			
<i>Fall Semester</i>		<i>Spring Semester</i>			
ACCT 202 Prin of Acct. II	3	47	BUGB 231 Sarvey of Bus. Law ...	3	47
ACCT 205 Ten Key Operations ...1	24		BUGB 241 Income Tax	3	47
BUGB 141 Business Math or			ECON 202 Prin of Microeconomics.3		47
MATH 113 College Algebra or			*Literature, Social Science		
MATH 121 Math Found of Bus			or Psychology	3	47
or MATH 127 Marh of Fin ...3-4	47-63		OFAD 201 Office Management ...3		47
BUGB 211 Bus Communications ...3	47				235
ECON 201 Prin of Macroeconomics.3	47				
MANG 201 Prin of Mgmt	3	47			
OFAD 270 Microcomputer App....3	47				
		306-322			

*See pp. 37-39 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 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 264 (3)
 - OFAD 152 (3) OFAD 266 (4)
 - OFAD 201 or 202 (3) OFAD 270 (3)
 - OFAD 221 (3) OFAD 271 (2)
 - OFAD 263 (3)
4. *Electives:* (9 hrs. — of which 6 hrs. must be business electives)

SUGGESTED COURSE SEQUENCING:

		First Year:			
<i>Fall Semester</i>	<i>Sem</i>	<i>Con</i>	<i>Spring Semester</i>	<i>Sem</i>	<i>Con</i>
	<i>Hrs</i>	<i>Hrs</i>		<i>Hrs</i>	<i>Hrs</i>
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		
CISB 104 BASIC Programming	1	16	Business	3	47
ENGW 111 English Composition	3	47	*Social Science, Psychology or		
OFAD 152 Doc Format/Skill Devel...	3	47	Literature	3	47
OFAD 264 Word Info Processing	3	47	PE Activity	1	24
PE Activity	1	24			259
		260			

		Second Year:			
<i>Fall Semester</i>	<i>Sem</i>	<i>Con</i>	<i>Spring Semester</i>	<i>Sem</i>	<i>Con</i>
	<i>Hrs</i>	<i>Hrs</i>		<i>Hrs</i>	<i>Hrs</i>
BUGB 211 Bus Communications	3	47	Electives	3	47
OFAD 221 Transcription Machines	3	47	MANG 121 Human Relations in Bus.	3	47
OFAD 263 Word Process/Ind.	3	47	OFAD 201 Office Management or		
*Social Science, Psychology or			OFAD 202 Records Mgmt.	3	47
Literature	3	47	OFAD 266 Adv Word/Info Proc	4	62
OFAD 270 Office Auto: Microcomp	3	47	OFAD 271 Office Auto: Concepts	2	32
PE Activity	1	24	PE Activity	1	24
		259			259

*See pp. 37-39 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:* (45 hrs.)

BUGB 141	(3)	OFAD 202	(3)
BUGB 211	(3)	OFAD 221	(3)
BUGB 231	(3)	OFAD 244	(3)
Business Electives	(3)	OFAD 264	(3)
CISB 102, 103, 104	(3)	OFAD 266	(4)
OFAD 101	(3)	OFAD 270	(3)
OFAD 152	(3)	OFAD 271	(2)
OFAD 201	(3)		
3. *Other Course Requirements:* (3 hrs.)
 - SPCH 101 (3)

SUGGESTED COURSE SEQUENCING:

		First Year:			
		Sem	Con	Sem	Con
Fall Semester	Hrs	Hrs	Spring Semester	Hrs	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		
OFAD 264 Word Info Processing ...	3	47	ENGW 115 Technical Writing ...	3	47
*Social Science, Psychology or			OFAD 266 Adv Word Proc.: Doc ...	4	62
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, 2nd mod ...	1	24	PE Activity, 2nd mod ...	1	24
		283			298
		Second Year:			
Fall Semester	Hrs	Hrs	Spring Semester	Hrs	Hrs
Business Electives ...	3	47	BUGB 211 Business Commun ...	3	47
OFAD 101 Bookkeeping for Small			OFAD 201 Office Management ...	3	47
Business ...	3	47	OFAD 271 Office Auto: Concepts ...	2	32
OFAD 202 Records Management ...	3	47	SPCH 101 Interpersonal Commun ...	3	47
OFAD 221 Transcription Machines ...	3	47	*Social Science, Psychology or		
OFAD 270 Microcomputer Applic. ...	3	47	Literature ...	3	47
		235			220

*See pp. 37-39 for listing of approved general education courses.

OFFICE SUPERVISION AND MANAGEMENT: MEDICAL SECRETARY

(Associate of Applied Science)

DEGREE REQUIREMENTS:

- 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)
- Business Course Requirements:* (29 hrs.)

BUGB 141	(3)	OFAD 154	(2)
BUGB 211	(3)	OFAD 159	(3)
OFAD 101	(3)	OFAD 231	(3)
OFAD 147	(3)	OFAD 264	(3)
OFAD 152	(3)	OFAD Elective	(3)
- 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:			
<i>Fall Semester</i>	<i>Sem Hrs</i>	<i>Con Hrs</i>	<i>Spring Semester</i>	<i>Sem Hrs</i>	<i>Con Hrs</i>
BUGB 141 Business Math	3	47	BUGB 211 Bus Communications	3	47
ENGW 111 English Composition	3	47	ENGW 112 English Composition or		
OFAD 152 Doc. Format/Skill Devel.	3	47	ENGW 115 Technical Writing	3	47
OFAD 264 Word Info Processing	3	47	OFAD 101 Bookkeeping for Small		
*Social Science, Psychology or			Business	3	47
Literature	3	47	OFAD Elective	3	47
PE Activity, 1st mod	1	24	*Social Science, Psychology or		
PE Activity, 2nd mod	1	24	Literature	3	47
		283	PE Activity, 1st mod	1	24
			PE Activity, 2nd mod	1	24
					283

Second Year:

<i>Fall Semester</i>			<i>Spring Semester</i>		
BIOL 141 Human Anatomy and			Elective	3	47
Physiology	3	47	OFAD 154 Laboratory Techniques	2	32
BIOL 141I. Human Anatomy and			OFAD 159 Medical Office		
Physiology Lab	2	60	Procedures	3	47
OFAD 147 Medical Terminology	3	47	OFAD 231 Medical Transcription	3	47
PHYA 265 Standard First Aid and			PSYC 233 Human Growth and		
Cardio-Pulmonary Resuscitation	3	47	Development	3	47
Elective	3	47			220
SOCO 260 General Sociology	3	47			
		295			

*See pp. 37-39 for listing of approved general education courses.

CERTIFICATE 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)

CERTIFICATE REQUIREMENTS: (34 hrs. consisting of 28 hrs. business and 6 hrs. English — no deviation without course substitution approval by adviser)

SUGGESTED COURSE SEQUENCING:

<i>Fall Semester</i>	<i>Sem Hrs</i>	<i>Con Hrs</i>	<i>Spring Semester</i>	<i>Sem Hrs</i>	<i>Con Hrs</i>
ENGW 111 English Composition	3	47	BUGB 141 Business Math	3	47
OFAD 101 Bkpping for Small Bus	3	47	BUGB 211 Bus Communications	3	47
OFAD 152 Doc Format/Skill Devel.	3	47	ENGW 112 English Composition or		
OFAD 264 Word Info Processing	3	47	ENGW 115 Technical Writing	3	47
OFAD 270 OA: Microcomp App	3	47	OFAD 201 Office Management or		
		235	OFAD 202 Records Management	3	47
			OFAD 221 Transcription Machines.	3	47
			OFAD 266 Adv Word Proc.: Doc	4	62
					297

OFFICE SUPERVISION AND MANAGEMENT: LEGAL CLERICAL _____

(Certificate)

CERTIFICATE REQUIREMENTS: (34 hrs. consisting of 25 hrs. of business and 6 hrs. English - no deviation without course substitution approval by adviser)

SUGGESTED COURSE SEQUENCING:

<i>Fall Semester</i>	<i>Sem</i>	<i>Con</i>	<i>Spring Semester</i>	<i>Sem</i>	<i>Con</i>
	<i>Hrs</i>	<i>Hrs</i>		<i>Hrs</i>	<i>Hrs</i>
BUGB 141 Business Math	3	47	ENGW 112 English Composition or		
ENGW 111 English Composition	3	47	ENGW 115 Technical Writing	3	47
OFAD 101 Bookkeeping/Small Bus . .	3	47	BUGB 211 Bus Communications . . .	3	47
OFAD 152 Doc Format/Skill Devel. . .	3	47	OFAD 201 Office Management or		
OFAD 244 Legal Procedures	3	47	OFAD 202 Records Management . .	3	47
OFAD 264 Word Info Processing	3	47	OFAD 221 Transcription Machines . .	3	47
		<u>282</u>	OFAD 266 Adv Word Proc: Doc . . .	4	62
					<u>250</u>

OFFICE SUPERVISION AND MANAGEMENT:**MEDICAL OFFICE ASSISTANT** _____

(Certificate)

CERTIFICATE REQUIREMENTS: (34 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:

<i>Fall Semester</i>	<i>Sem</i>	<i>Con</i>	<i>Spring Semester</i>	<i>Sem</i>	<i>Con</i>
	<i>Hrs</i>	<i>Hrs</i>		<i>Hrs</i>	<i>Hrs</i>
BIOL 141 Human Anatomy and			BUGB 211 Bus Communications . . .	3	47
Physiology	3	47	OFAD 101 Bookkeeping for Small		
BIOL 141L Human Anatomy and			Business	3	47
Physiology Lab	2	60	OFAD 154 Laboratory Techniques . .	2	32
ENGW 111 English Composition	3	47	OFAD 159 Medical Office Proc. . . .	3	47
OFAD 147 Medical Terminology . . .	3	47	OFAD 231 Medical Transcription . . .	3	47
OFAD 152 Doc Format/Skill Dev. . . .	3	47	PHYA 265 Standard First Aid and		
OFAD 264 Word Info Process: Doc. . .	3	47	Cardio-Pulmonary Resuscitation . .	3	47
		<u>295</u>			<u>267</u>

OFFICE SUPERVISION & MANAGEMENT: WORD PROCESSING _____

(Certificate)

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

SUGGESTED COURSE SEQUENCING:

<i>Fall Semester</i>	<i>Sem</i>		<i>Spring Semester</i>	<i>Sem</i>	
	<i>Hrs</i>	<i>Con</i>		<i>Hrs</i>	<i>Hrs</i>
BUGB 141 Business Math	3	47	BUGB 211 Bus Communications	3	47
ENGW 111 English Composition	3	47	ENGW 112 English Composition or		
OFAD 101 Bookkeeping/Small Bus	3	47	ENGW 115 Technical Writing	3	47
OFAD 152 Doc Format/Skill Dev.	3	47	OFAD 201 Office Management or		
OFAD 270 Microcomputer Applic.	3	47	OFAD 202 Records Management	3	47
OFAD 264 Word Info Processing	3	47	OFAD 221 Transcription Machines.	3	47
		282	OFAD 263 Word/Info Process	3	47
			OFAD 266 Adv Word Process: Doc	4	62
					297

SCHOOL OF HUMANITIES AND FINE ARTS

Laurence W. Mazzeno, Dean

Departments
and
Faculties

- Art
 - S. Cahill, C. Hardy, M. Krasnow,
 - D. Meyers (Chair), L. Mosher
- Languages and Literature
 - R. Berkey, E. Broughton, B. Crowell, M. Djos,
 - R. Frohock, J. Gallegos, R. Johnson (Chair),
 - S. Matchett, D. MacKendrick, D. Pilkenton,
 - J. Rider, R. Sowada, M. Spelman, B. Tharaud,
 - J. Zeigel
- Music
 - G. Asquith, M. Atkinson (Chair), K. Cochrane,
 - G. Cope, K. Gustafson, L. Sanford, P. Schneider,
 - G. Smith, E. Van Camp
- Theatre and Communications
 - P. Carmichael, V. Carmichael, D. Cox, B. Evers,
 - M. Gerlach (Chair), J. Keener, M. Robb, L. Scott

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.

<i>English*</i>	B.A. p.68	A.A. p.76
<i>Fine Arts:</i>		
Art	B.A. p.70	A.A. p.76
Music	B.A. p.71	A.A. p.76
Theatre	B.A. p.72	A.A. p.77
Music Theatre	B.A. p.73	
<i>Humanities</i>	B.A. p.74	A.A. p.76
<i>Mass Communications</i>	B.A. p.74	

*Certification for Secondary Education also available. See "Consortium Programs" section of this catalog for details.

Other fields of study available within the Humanities and Fine Arts include: *Creative Writing, Dance, Foreign Languages, Philosophy, Speech*. A program in *Commercial Art* is available through the School of Industry and Technology (see page 88).

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 37-39
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 equivalent courses for those listed below.

- | | <i>Hrs.</i> |
|--|-------------|
| I. <i>Introductory Studies</i> | (6) |
| Art | |
| ARTE 115 | |
| Communications | |
| MASS 101 | |
| Literature | |
| ENLI 131 or 132, 141 | |
| Music | |
| MUSA 220 | |
| Theatre | |
| THEA 141 | |
| II. <i>*Historical Studies</i> | (9-12) |
| (Must include at least two disciplines.) | |
| Art | |
| ARTE 211 or 212, 315, 316 | |
| Communications | |
| MASS 121 or 131 | |
| Literature | |
| ENLI 134, 135, 142, 145, 254, 255, 261,
262, 318, 413 | |
| Music | |
| MUSA 266, 326, 327 | |
| Philosophy | |
| PHIL 251 or 252 | |
| Theatre | |
| THEA 143, 331, 345, 346, 411 | |
| III. <i>*Applied Studies</i> | (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, 231, 316, 317, 450, 451A or B
MUSP 100-400, MUSI. 100-400 | |

Speech

SPCH 101 or 102, 112

Creative Writing

ENGW 251 or 252

Theatre

THEA 142, 143, 147, 148, 242, 243, 244, 251, 252, 114-414,
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. Acting in one major production or three one-acts counts as one credit of Drama Performance.

*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

ENGLISH:

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

Group I: (All courses required)

Total of 9 hours Credit Hours

ENLI 355 or 356	Shakespeare I or II	(3)
ENLI 254	English Literature I	(3)
ENLI 261	United States Literature I	(3)

Group II: Total 6 hours

ENLI 435	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 316	American Novel	(3)
ENLI 324	Short Story	(3)
ENLI 413	Contemporary Drama	(3)

Group III: Upper Division (300-400 level)

(Two required)

Total of 6 hours

ENLI 318	Frontier American Literature	(3)
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 382	The Romantics	(3)
ENLI 395	Independent Study	(3)
ENLI 410	The British Novel	(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 367	Modern English Grammar (For Sec. Ed. Students)	(3)
ENSS 440	History of the English Language	(3)
ENSS 450	Linguistics	(3)
ENSS 455	Methods of Teaching English	(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:	
		<i>Sem</i>	<i>Sem</i>
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
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:	
		<i>Sem</i>	<i>Sem</i>
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
Fine Arts Elective	3	ENLI 255 English Literature I or ENLI 262 U.S. Literature II	3
ENLI 254 English Literature I or ENLI 261 U.S. Literature I	3	PE Activity	1
ARTE 211 Art History (Ancient) or adviser approved elective	3	General Education	6
PE Activity	1	English Elective	3
PHIL 251 History of Philosophy I	3	Elective	3
General Education	3		

Other Suggested Courses:

ARTE 212	ENGW 394
ENLI 134, 135, 142, 251, 252, 316, 318, 324, 350, 355, 360, 370, 380, 381	ENSS 421, 440, 450

ENGLISH WITH TEACHER CERTIFICATION

Students preparing to teach English on the secondary level must confer with the Director of Teacher Education 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. See "Consortium Programs."

SECONDARY ENGLISH TEACHING REQUIREMENTS:

I. Lower Division		Credit Hours
ENLI 131	World Literature I	(3)
ENLI 254	English Literature I (Emphasis Group D)	(3)
ENLI 261	United States Literature I (Emphasis Group D)	(3)
ENLI 262	United States Literature II	(3)
II. Upper Division		
ENSS 367	Modern English Grammar (Emphasis Group III)	(3)
ENSS 440	History of the English Language (Emphasis Group III)	(3)
ENSS 450	Linguistics (Emphasis Group III)	(3)
ENSS 455	Methods of Teaching English: Secondary (Core — Applied Studies)	(3)
ENLI 365	Adolescent Literature (Core — Historical Studies)	(3)
ENGW 394	Seminar/Advanced Writing (Emphasis Group III)	(3)
EDU 328	Teaching Reading/Content Areas (Metro Courses)	(3)
SPCH 403	Teaching of Speech & Drama (Core — Applied Studies)	(3)

ENGLISH SEQUENCE FOR TEACHER CERTIFICATION CANDIDATES IN OTHER AREAS

Students electing this sequence must confer with the Director of Teacher Education.

ENGW 121	Spelling/Vocabulary	(3)
ENLI 254 or 255	English Literature I or II	(3)
ENLI 261 or 262	U.S. Literature I or II	(3)
ENGW 115	Technical Writing	
or 251	Creative Writing	(3)
ENSS 455	Methods of Teaching English	(3)
<i>Plus 9 hours of Upper Division English courses, choice open to students.</i>		(9)
		(24)

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:	
		<i>Sem</i>	<i>Sem</i>
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
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:	
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
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
HIST 205 Civilizations/China/Japan	3	ENLJ 135 Mythology (Medieval)	3
CSCI 100 Computers in Our Society	3	GEOG 100 Survey of Earth Sciences	3
PE Activity	1	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:	
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
ENGW 111 English Composition	3	ENGW 112 English Composition	3
MUSA 114 Theory I	3	MUSA 115 Theory II	3
MUSA 116 Ear Training & Sightsinging	2	MUSA 117 Ear Training & 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:

<i>Fall Semester</i>		<i>Spring Semester</i>	
MUSA 214 Theory III	3	SPCH 112 Voice and Diction	3
MUSA 220 Music Appreciation	3	MUSL Music Lessons	1
MUSL Music Lessons	1	Performance Organizations	1
Performance Organizations	1	PE Activiey	1
PE Activity	1	General Education	3
General Education	6	Electives	6
MUSA 230 Class Piano III	2	MUSA 216 Keyboard Harmony	2

Other Suggested courses:

MUSA 137, 138, 160, 241, 260, 262, 266, 270, 271, 316,
317, 326, 327, 337, 341, 450, 451A or B

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

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

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 or 356, 413 Shakespeare I or II, Contemporary Drama	
THEA 345 or 346, 411 World Drama I or II, American 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:		
	<i>Sem</i>		<i>Sem</i>
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
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:

<i>Fall Semester</i>	<i>Spring Semester</i>
THEA 243 Theatre Practice or	THEA 244 Theatre Practice or
THEA 251 Acting I .....3	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. All baccalaureate degree students 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 Chairman 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*	Music Theatre (3 hours of Drama Performance may be substituted)	A total of (12)
370/371	Music Theatre	twelve
470/471	Music Theatre	credits

*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:

<i>Fall Semester</i>	<i>Sem Hrs</i>	<i>Spring Semester</i>	<i>Sem Hrs</i>
ENGW 111 English Composition .....3		ENGW 112 English Composition .....3	
MUSA 130 Class Piano .....2		MUSA 138 Class Voice II .....2	
MUSA 137 Class Voice I .....2		MUSA 131 Class Piano .....2	
MUSA 110 Standard Notation .....2		THEA 222 Improv & Compos Dance .....3	
MUSA 116 Ear Trng & 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:

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

Other Suggested Courses

MUSA 326, 327, 337, SPCH 112, THEA 331, 455, 456, PHVA 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.

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.

MASS COMMUNICATIONS:

	<i>Credit Hours</i>
<i>Print Track (20 credits)</i>	
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	(6)
<i>Broadcast Track (21 credits)</i>	
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	(6)
<i>Public Relations Track (24 credits)</i>	
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	(6)

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; may be taken as part of General Education or Core requirements.

SUGGESTED COURSE SEQUENCE:

		First Year:	
		<i>Sem</i>	<i>Sem</i>
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
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 221 Radio Production & Announ.	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:	
<i>Fall Semester</i>		<i>Spring Semester</i>	
MASS 231 News Writing & Reporting	3	(PRINT)	
PE Activity	1	MASS Course (see adviser)	3
General Education	12	PE Activity	1
		General Education	12
		(BROADCAST)	
		MASS Courses (see adviser)	6
		PE Activity	1
		General Education	9

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 crucial 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:* (30 hrs. plus 4 hrs. physical education)

English Composition*	(6)	
Literature/Humanities	(6)	Specific courses to satisfy
Social Sciences	(6)	these requirements are
Physical Science/Math	(6)	listed on pages 37-39
Life Sciences (Psych/Biol)	(6)	of this catalog.

*Students not ready for the Composition sequence will be required to enroll in English 090.

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* twelve hours of electives chosen in consultation with Art Adviser.

ENGLISH

ENLI 131, 132 -- World Literature	(6)
134 <i>or</i> 135 -- Mythology	(3)
141 <i>or</i> 142 -- Intro. to Lit.	(3)
254 -- English Literature	(3)
261 -- U.S. Literature	(3)

Plus General Education requirements (listed above) *and* twelve hours of electives chosen in consultation with English Adviser.

HUMANITIES

Thirty 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	
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. Eleven 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 or	
244 — Beginning Lighting	(3)
251 — Beginning Acting 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. Thirteen hours of electives also must be chosen in consultation with the Adviser.

SPECIALIZED STUDY PROGRAMS**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, SOCI 210, SOCO 310, ENLI 335

Allied Courses

Literature

ENLI 131, 132, 134, 135, 145, 340, 341

General

ANTH 232, HIST 205

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.

SCHOOL OF INDUSTRY AND TECHNOLOGY

A. D. Anderson, Dean

Departments
and
Faculties

Main Campus (Medesy Building)
B. Beden, B. Buchholz, D. Duff,
C. Fetters, J. Fresquez, E. Goodwin,
R. Greb, K. McDonald, P. Wells (Chair)

South Campus (29th and D Road)
W. Branton (Chair), F. Holgate,
G. Looft

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 Industry and 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

Areas of Emphasis: Auto Body and Fender
Automotive Mechanics
Electronics Technology
Graphic Communications:
 Commercial Art
 Graphic Communications Technology
Machining Technology
Welding

ASSOCIATE OF SCIENCE

Areas of Emphasis: Electronic Engineering Technology
Manufacturing Technology

CERTIFICATE OF OCCUPATIONAL PROFICIENCY

Areas of Emphasis: Auto Body Repair, General
Automotive Mechanics
Electric Lineworker
Electronics Technology
Heavy Equipment — Diesel Mechanics
Machine and Manufacturing Trades
Welding

ASSOCIATE OF APPLIED SCIENCE**DEGREE REQUIREMENTS**

Coursework required for a degree consists of general education, technical courses, physical education and, in some cases, electives. Programs are designed to provide preparation for career responsibilities.

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, 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. 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 emphasis available (together with the degrees or certificates offered and reference to the catalog page on which detailed information can be found):

<i>Areas of Study Emphasis Available</i>	<i>Degrees/Certificates</i>	<i>Details</i>
Auto Body Repair	AAS, Certificate	pp. 80, 81
Automotive Mechanics	AAS, Certificate	pp. 81-83
Electric Lineworker	Certificate	pp. 83, 84
Electronic Engineering Technology	AS	pp. 84-86
Electronics Technology	AAS, Certificate	pp. 86-87
Graphic Communications:		
Commercial Art	AAS	pp. 88-89
Graphic Communications Technology	AAS	pp. 89-90
Heavy Equipment -- Diesel Mechanics	Certificate	p. 91
Machine and Manufacturing Trades	AAS, Certificate	pp. 91-92
Manufacturing Technology	AS	pp. 93-95
Welding	AAS, Certificate	pp. 95-97

AUTO BODY AND FENDER

(Associate of Applied Science)

Practical application covers all phases of auto body repair, including a comprehensive unit in auto painting. The training covers necessary shop skills, knowledge of theory, principles and related subjects essential to enter and progress competitively in the occupation. 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, except AUBF 100, and must satisfy all other graduation requirements.

Minimum Semester Hours Required (75)

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

Six (6) semester hours of English satisfied by completing any one of the following sequences:

ENGW 086 and 087, or 121

or

ENGW 111 and 087, 112, 115, or 121

or

ENGW 126 and 127

Plus six (6) semester hours selected from the following:

ANTH 101, 102, 222

POLS 101, 102, 256, 261, 262

ECON 201, 202

PSYC 121, 122

ENLI 131, 132, 134, 135,

SOCI 210

141, 142, 143, 145

SOCO 144, 260, 264

GEOG 103

HIST 101, 102, 120, 131

132, 136, 137

2. *Required Courses:* (56 hrs.)

AUBF 100 (2) AUBF 130 (3) AUBF 220 (3)

AUBF 108 (4) AUBF 141 (2) AUBF 230 (6)

AUBF 109 (4) AUBF 150 (3) AUBF 240 (8)

AUBF 118 (4) AUBF 200 (6) AUBF 250 (3)

AUBF 119 (4) AUBF 210 (4)

3. *Electives:* (3 hrs.)

SUGGESTED COURSE SEQUENCING:

	First Year:						
	Sem		Con		Sem		Con
<i>Fall Semester</i>	<i>Hrs</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>	<i>Hrs</i>	<i>Hrs</i>	<i>Hrs</i>
AUBF 100 Applied Mathematics	2	32	AUBF 118 Intro to Painting/Prep	4	114		
AUBF 108 Intro to Auto Body Repair	4	114	AUBF 119 Complete Auto Painting	4	114		
AUBF 109 A.B. Repair & Prep	4	114	AUBF 130 Auto Reconditioning	3	77		
AUBF 150 A.B. Welding	3	67	AUBF 141 Suspension/Alignment	2	47		
PE Activity	2	48	PE Activity	2	48		
English Comp or Vocat. Comm	3	47	English Comp or Vocat. Comm	3	47		
		18			422		
						18	447

		Second Year:			
<i>Fall Semester</i>				<i>Spring Semester</i>	
AUBF 200 Panel/Spot Painting	6	153		AUBF 220 Shop Management	47
AUBF 210 Frame Repair	4	92		AUBF 240 A.B. Repair Refinish. IV..8	302
AUBF 230 A.B. Repair/Refinish. III..6		152		AUBF 250 Estimating	47
Social Science	3	47		Social Science	47
		19	443	Elective	47
					20 490

AUTO BODY REPAIR

(Certificate of Occupational Proficiency)

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

COMPLETION REQUIREMENTS

Students seeking a Certificate of Occupational Proficiency must obtain a minimum of 2.00 ("C") in each AUBF course, except AUBF 100, and must satisfy all other graduation requirements.

Minimum Semester Hours Required (33)

SUGGESTED COURSE SEQUENCING:

<i>Fall Semester</i>		<i>Sem</i>	<i>Con</i>	<i>Spring Semester</i>		<i>Sem</i>	<i>Con</i>
		<i>Hrs</i>	<i>Hrs</i>			<i>Hrs</i>	<i>Hrs</i>
AUBF 100 Applied Mathematics	2	32		AUBF 118 Intro to Painting/Prep	4	114	
AUBF 108 Intro to Auto Body Repair	4	114		AUBF 119 Complete Auto Painting	4	114	
AUBF 109 A.B. Repair & Prep	4	114		AUBF 130 Auto Reconditioning	3	77	
AUBF 150 A.B. Welding	3	67		AUBF 296 Topics/Comptuety			
AUBF 230 A.B. Repair/Refinish. III .6		152		Based Lab	3	105	
		19	479			14	410

Students may enroll in additional auto body repair courses and receive a Certificate of Occupational Proficiency as long as the above requirements are met. Veterans benefits will be based on the above only.

AUTOMOTIVE MECHANICS

(Associate of Applied Science)

The Automotive Mechanics 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 an approved regional Ford, GMC, and Nissan training center.

No new students will be admitted to this program for the 1990-91 academic year.

DEGREE REQUIREMENTS:

Students seeking an Associate of Applied Science degree must obtain a minimum of 2.00 ("C") in each MECA and MECH course, except MECH 105 and MECH 111, and must satisfy all other graduation requirements.

Minimum semester hours (75)

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

Six (6) semester hours of English satisfied by completing any one of the following sequences:

ENGW 086 and 087, or 121

or

ENGW 111 and 087, 112, 115, or 121

or

ENGW 126 and 127

Plus six (6) semester hours selected from the following:

ANTH 101, 102, 221, 222

POLS 101, 102, 256, 261, 262

ECON 201, 202

PSYC 121, 122

ENLI 131, 132, 134, 135,

SOCI 210

141, 142, 143, 145

SOCO 144, 260

GEOG 103

HIIST 101, 102, 120, 131

132, 136, 137

2. *Required Core and Emphasis Courses:* (55 hrs.)

INSA 110, 110L (4) *MECH 105 (3)

MANG 121 (3) MECH 111 (2)

Plus 43 semester hours selected from MECA or MECH courses below:

	Sem Hrs	Con Hrs
MECH 113 Internal Combust Engines	5	75
MECH 121 Clutches/Std Transmission	2	52
MECH 125 Light Duty Brakes	3	65
MECA 123 Auto Tune-up	7	127
MECA 222 4x4 Components and Repair	5	100
MECH 227 Automatic Transmission	4	75
MECH 133 Air Conditioning	3	52
MECA 122 Drivelines/Differentials	2	40
MECA 142 Suspension/Alignment	5	977
MECA 239 Emission Control	4	75
MECA 243 Transaxles	3	60
MECA 250 Trblshooting/Diagnosis	3	60
MECA 254 Auto Electronics	4	75

3. *Electives:* (4 hrs.)

*MECH 105 may be waived by previous training or experience upon the recommendation of the instructor.

SUGGESTED COURSE SEQUENCING:

		First Year:				
<i>Fall Semester</i>		<i>Sem</i>	<i>Con</i>	<i>Spring Semester</i>	<i>Sem</i>	<i>Con</i>
		<i>Hrs</i>	<i>Hrs</i>		<i>Hrs</i>	<i>Hrs</i>
ENGW 086 Voca Communications . . .	3	47	MANG 121 Human Relations/Busi. . .	3	47	
INSA 110, 110L Basic Electronics . . .	4	69	MECH 111 Applied Math/Auto Mech. .	2	32	
MECH 105 Intro/Shop Practice . . .	3	77	Elective	2	32	
MECA or MECH (from list above) . . .	10	257	MECA or MECH (from list above) . . .	11	225	
		20	450		18	336

		Second Year:				
<i>Fall Semester</i>		<i>Spring Semester</i>				
		<i>Sem</i>	<i>Con</i>	<i>Sem</i>	<i>Con</i>	
		<i>Hrs</i>	<i>Hrs</i>	<i>Hrs</i>	<i>Hrs</i>	
ENGW 115 Technical Writing	3	47	Social Science	3	47	
Social Science	3	47	PE Activity	2	48	
PE Activity	2	48	Electives	2	32	
MECA or MECH (from list above) . . .	11	225	MECA or MECH (from list above) . . .	11	250	
		19	367		18	377

AUTOMOTIVE MECHANICS

(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 qualifies students for acceptance into the second year Associate of Applied Science program. NOTE: Coursework included in this program is subject to change pending State approval.

COMPLETION REQUIREMENTS:

Students seeking a Certificate of Occupational Proficiency must obtain a minimum of 2.00 ("C") in each course, except ENGW, MANG 121, and MECH 111, and must satisfy all other graduation requirements.

Minimum Semester Hours Required (44)

		<i>Sem</i>	<i>Con</i>			
<i>Fall Semester</i>		<i>Hrs</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Sem</i>	<i>Con</i>
		<i>Hrs</i>	<i>Hrs</i>		<i>Hrs</i>	<i>Hrs</i>
ENGW 086 Voca Communications . . .	3	47	MECH 111 Appl. Math/Auto Mech. . .	2	32	
MECH 105 Intro/Shop Practice . . .	3	77	MECH 133 Air Conditioning	3	52	
MECH 113 Internal Combust. Engr. . .	5	77	MECA 122 Drivelines/Differentials . . .	2	42	
MECH 121 Clutch/Standard Trans . . .	2	52	MECA 123 Auto Tune-up	7	127	
INSA 110,110L Basic Elect/Lab	4	69	MECA 142 Suspension/Alignment . . .	5	97	
MECH 125 Light Duty Brakes	3	65	MANG 121 Human Relations/Bus. . . .	3	47	
		20	387		24	397

ELECTRIC LINEMAN

(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 course, except ELCL 111 and ELCL 120, and must satisfy all other graduation requirements.

Minimum Semester Hours Required (40)

<i>Fall Semester</i>	<i>Sem</i>	<i>Con</i>	<i>Spring Semester</i>	<i>Sem</i>	<i>Con</i>
	<i>Hrs</i>	<i>Hrs</i>		<i>Hrs</i>	<i>Hrs</i>
ELCL 111 Math Basic Electricity	5	77	ELCL 132 Elect Distrib Theory II	6	115
ELCL 120 Fundamentals/Electricity I	5	77	ELCL 137 Related Fundamentals II	6	152
ELCL 131 Elect Distrib Theory I	4	77	ELCL 140 Underground Procedure	5	152
ELCL 136 Related Fundamentals I	4	190	ELCL 145 Hotline Procedure	3	82
PHYA 265 Standard First Aid/CPR	3	47			
	21	468		20	501

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: (65-69 credit hours, minimum)1. *General Education:* (15 credit hours)

A. Six semester hours of English satisfied by completing one of the following sequences:

ENGW 111 English Composition and (3)

ENGW 112 English Composition or ENGW 115 Technical Writing* (3)

or

ENGW 126 and 127 Honors English (6)

*NOTE: Students should make certain of the transferability of the entire course sequence.

B. *Social Sciences/Literature/Humanities:* (9 credit hours)

To be selected from the following:

ANTH 101, 102, 222

ECON 201*, 202

ENLI 131, 132, 134, 135,

141, 142, 143, 145

GEOG 103

HIST 101, 102, 120, 131

132, 136, 137

POLS 101, 102, 256, 261, 262

PSYC 121, 122

SOCI 210

SOCO 144, 260, 264

*Recommended as one selection.

2. *Laboratory Science, Computer Science or Mathematics:* (26 credit hours)
 - A. Ten semester hours of Physics
 PHYS 111, 111L, 112, and 112L (10)
 - B. Ten or twelve semester hours of mathematics through Calculus I level satisfied by one of the following:
 MATH 113, 130, 151 (12)
 or
 MATH 119, 151 (10)*
 - C. Four semester hours of Computer Science:
 CSCI 133, 133L (4)

*Two additional semester hours of approved lab science, mathematics, or computer science electives needed if MATH 119, 151 sequence is taken.

3. *Electronics Technology:* (20 credit hours)

The following courses are required:

- ELCT 117, 117L (4)
- ELCT 118, 118L (4)
- ELCT 244, 244L (4)
- ELCT 264, 264L (4)
- ELCT 265, 265L (4)

4. *Physical Education Activities:* (4 credit hours)

Successful completion of 4 credit hours selected from courses numbered PHYE 100-199. See "Associate Degree Requirements," page 40.

SUGGESTED COURSE SEQUENCING:

<i>Full Semester</i>	First Year:		<i>Sem</i> <i>Hrs</i>
	<i>Sem</i> <i>Hrs</i>	<i>Spring Semester</i>	
ENGW 111 English Composition	3	ENGW 112 English Composition	3
MATH Math (see above)	4	MATH Math (see above)	3
ELCT 117 DC Passive Circuits	3	ELCT 118 AC Passive Circuits	3
ELCT 117L DC Passive Circuits Lab	1	ELCT 118L AC Passive Circuits Lab	1
Soc Sci/Literature/Humanities	3	CSCI 133 Pascal Programming	3
PHYE Physical Ed Activity	2	CSCI 133L Pascal Programming Lab	1
		PHYE Physical Ed Activity	2

Second Year:			
ELCT 244 Electronic Circuits I	3	ELCT 264 Electronic Circuits II	3
ELCT 244L Elect. Circuits I Lab	1	ELCT 264L Elect. Circuits II Lab	1
PHYS 111 General Physics I	4	PHYS 112 General Physics II	4
PHYS 111L General Physics I Lab	1	PHYS 112L General Physics II Lab	1
MATH 151 Calculus I (see above)	5	ELCT 265 Digital Circuits I	3
Soc Sci/Literature/Humanities	3	ELCT 265L Digital Circuits I Lab	1
		Soc Sci/Literature/Humanities	3

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 student 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.

Minimum Semester Hours Required (77 hrs.)

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

Six (6) semester hours of English satisfied by completing any one of the following sequences:

ENGW 086 and 087, or 121

or

ENGW 111 and 087, 112, 115, or 121

or

ENGW 126 and 127

Plus six (6) semester hours selected from the following:

ANTH 101, 102, 222

POLS 101, 102, 256, 261, 262

ECON 201, 202

PSYC 121, 122

ENLI 131, 132, 134, 135,
141, 142, 143, 145

SOCI 210

SOCO 144, 260, 264

GEOG 103

HIST 101, 102, 120, 131

132, 136, 137

2. *Required Courses:* (55-56 hrs.)

ELCT 117, 117L	(4)	ELCT 262, 262L	(4)
ELCT 118, 118L	(4)	ELCT 264, 264L	(4)
ELCT 232, 232L	(4)	ELCT 270, 270L	(4)
ELCT 244, 244L	(4)	ELCT 272, 272L	(5)
ELCT 246, 246L	(4)	ELCT 280, 280L	(3)
ELCT 254, 254L	(4)	ENGT 101, 102	(8)
ELCT 256, 256L	(4)		

3. *Computer Science Software:* (3 hrs.)

CISB 102, 103 and 105 or
CSCI 120 (3)

4. *Approved electives:* (3 hrs.)

SUGGESTED COURSE SEQUENCING:

		First Year:				
<i>Fall Semester</i>		<i>Sem</i>	<i>Con</i>	<i>Spring Semester</i>	<i>Sem</i>	<i>Con</i>
		<i>Hrs</i>	<i>Hrs</i>		<i>Hrs</i>	<i>Hrs</i>
ENGW 111 English Composition	3	45		ENGW 115 Technical Writing	3	45
ELCT 117 DC Passive Circuits	3	45		ELCT 232 Personal Computers I	2	30
ELCT 117L DC Passive Circuits Lab 1	3	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	3	30		ELCT 244L Elec Circuits I Lab	1	30
ENGT 101 Technical Math I or				ELCT 264 Electronic Circuits II	3	45
MATH 113 College Algebra	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:				
<i>Fall Semester</i>		<i>Sem</i>	<i>Con</i>	<i>Spring Semester</i>	<i>Sem</i>	<i>Con</i>
		<i>Hrs</i>	<i>Hrs</i>		<i>Hrs</i>	<i>Hrs</i>
ELCT 246 Applied Digital Circuits	2	30		ELCT 254 Communication Circuits II.3	3	45
ELCT 246L Appl. Digital Circ. Lab	2	60		ELCT 254L Comm Circuits II Lab	1	30
ELCT 256 Electronic Communication.3	3	45		ELCT 272 Microprocessors I	3	45
ELCT 256L Elect. Commun. Lab	1	30		ELCT 272L Microprocessors I Lab	2	60
ELCT 262 Personal Computers II	2	30		ELCT 280 Microprocessors II	1	15
ELCT 262L Personal Comp. II Lab.	2	60		ELCT 280L Microprocessors II 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		19	375

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 (56 hrs.)

		First Year:				
<i>First Semester</i>		<i>Sem</i>	<i>Con</i>	<i>Second Semester</i>	<i>Sem</i>	<i>Con</i>
		<i>Hrs</i>	<i>Hrs</i>		<i>Hrs</i>	<i>Hrs</i>
ELCT 117 DC Passive Circuits	3	45		ELCT 244 Electronic Circuits I	3	45
ELCT 117L DC Passive Circ. Lab	1	30		ELCT 244L Elect. 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	30
CSCI 120 Computer Software	3	45		ELCT 232L Pers. Computers I Lab	2	60
MATH 020 Beginning Algebra	3	45			12	240
		14	240			

		Second Year:				
<i>Third Semester</i>		<i>Sem</i>	<i>Con</i>	<i>Fourth Semester</i>	<i>Sem</i>	<i>Con</i>
		<i>Hrs</i>	<i>Hrs</i>		<i>Hrs</i>	<i>Hrs</i>
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	3	45		ELCT 272 Personal Computers III	3	45
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	1	15
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			14	280
		16	330			

*Approved elective may be chosen from an electronics independent study, computer science, business, or mathematics.

Students should check with an Electronics instructor/advisor about various other possible certificate options.

GRAPHIC COMMUNICATIONS

(Associate of Applied Science)

There are two program emphases offered in Graphic Arts: Graphic Communications Technology and Commercial Art. Both are designed to prepare students for employment in two years. Students may also wish to complete both program options. Since there are a number of core courses required which are the same for both, it is possible for a student to complete the two options in six semesters of study. Some Commercial Art courses may be applied towards a B.A. in Liberal Arts.

No new students will be admitted to either of the Graphic Communications programs for the 1990-91 academic year.

COMMERCIAL ART EMPHASIS

Designed to prepare a student for 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.

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.

Minimum Semester Hours Required (73)

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

Six (6) semester hours of English satisfied by completing any one of the following sequences:

ENGW 086 and 087, or 121

or

ENGW 111 and 087, 112, 115 or 121

or

ENGW 126 and 127

Plus six (6) semester hours selected from the following:

ANTH 101, 102, 222

POLS 101, 102, 256, 261, 262

ECON 201, 202

PSYC 121, 122

ENLI 131, 132, 134, 135,

SOCI 210

141, 142, 143, 145

SOCO 144, 260, 264

GEOG 103

HIST 101, 102, 120, 131

132, 136, 137

2. *Required Courses*: (54 hrs.)

ARTE 101 (3) ARTE 292 (3) GRCO 141, 141L (3)

ARTE 151 (3) ENGW 115 or 251 (3) GRCO 220 (3)

ARTE 154 (1) GRCO 120 (2) GRCO 221 (3)

Choose one from: GRCO 121 (2) GRCO 230, 230L (4)

ARTE 190 (1) GRCO 130 (1) GRCO 240, 240L (4)

ARTE 192 (1) GRCO 131 (1) GRCO 241, 241L (4)

ARTE 193 (1) GRCO 132 (1) GRCO 270 (1)

ARTE 251 (3) GRCO 140, 140L (3) MARK 232 (3)

ARTE 257 (1)

3. *Electives*: (3 hrs.)

SUGGESTED COURSE SEQUENCING:

		First Year:				
		<i>Sem</i>	<i>Con</i>		<i>Sem</i>	<i>Con</i>
<i>Fall Semester</i>	<i>Hrs</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>	<i>Hrs</i>	
ENGW 111 English Composition	3	47	ENGW 112 English Composition	3	47	
ARTE 101 Two Dimensional Design.	3	70	ART 251 Figure Drawing	3	92	
ARTE 151 Basic Drawing	3	92	GRCO 130 Basic Photography	1	17	
GRCO 120 Basic Layout & Design I.	2	32	GRCO 132 Darkroom Techniques	1	24	
GRCO 140, 140L Basic Typesetting			GRCO 141 Advanced Typesetting	1	17	
Lab	3	62	GRCO 141L Advanced Typesetting			
PSYC 121 General Psychology	3	47	Lab	2	45	
		17	GRCO 121 Basic Layout & Design II.	2	32	
		350	PSYC 122 General Psychology	3	47	
			PE Activity	2	48	
				18	369	
		Second Year:				
<i>Fall Semester</i>			<i>Spring Semester</i>			
ARTE 193 Airbrush	1	32	ENGW 115 Technical Writing or			
ARTE 190 Water Media or			ENGW 251 Creative Writing	3	47	
ARTE 192 Pastels	1	32	ARTE 154 Ink Drawing	1	32	
GRCO 220 Adv Layout & Design I.	3	45	ARTE 257 Cartooning	1	32	
GRCO 230 Process Photo I	1	17	ARTE 292 Paint/Acrylics	3	92	
GRCO 230L Process Photo I Lab	3	60	GRCO 131 Photo Finish	1	17	
GRCO 240 Image Preparation I	1	17	GRCO 221 Adv Layout & Design II	3	45	
GRCO 240L Image Prep I Lab	3	60	GRCO 241 Image Prep II	1	17	
PE Activity	2	48	GRCO 241L Image Prep II Lab	3	60	
Elective	3	47	GRCO 270 Portfolio Development	1	17	
	18	358	MARK 232 Advertising	3	47	
				20	406	

GRAPHIC COMMUNICATIONS TECHNOLOGY EMPHASIS

A two-year technical program designed to prepare a student for business, industry, and education graphics 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 of 2.00 ("C") in each GRCO course and must satisfy all other graduation requirements.

Minimum Semester Hours Required (72-73)

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

Six (6) semester hours of English satisfied by completing any one of the following sequences:

ENGW 086 and 087, or 121

or

ENGW 111 and 087, 112, 115 or 121

or

ENGW 126 and 127

Plus six (6) semester hours selected from the following:

ANTH 101, 102, 222

POLS 101, 102, 256, 261, 262

ECON 201, 202

PSYC 121, 122

ENLI 131, 132, 134, 135,
141, 142, 143, 145

SOCl 210

SOCO 144, 260, 264

GEOG 103

HIST 101, 102, 120, 131

132, 136, 137

2. *Required Courses:* (47-48 hrs.)

ARTE (Any three semester hrs.)	(3)	GRCO 140,140L	(3)	GRCO 250,250L	(4)
GRCO 120	(2)	GRCO 141,141L	(3)	GRCO 251,251L	(4)
GRCO 121	(2)	GRCO 230,230L	(4)	GRCO 260	(3)
GRCO 130	(1)	GRCO 231,231L	(4)	MARK 232	(3)
GRCO 132	(1)	GRCO 240,240L	(4)	MATH 110 or	
		GRCO 241,241L	(4)	BUGB 141	(2-3)

3. *Electives:* (9 hrs.)

SUGGESTED COURSE SEQUENCING:

	First Year:			
	Sem Hrs	Con Hrs	Spring Semester	Sem Hrs
<i>Fall Semester</i>				
ENGW 111 English Composition	3	47	ENGW 112 English Composition	3
ARTE Any 3 semester hrs. art.	3	92	MARK 232 Advertising	3
GRCO 120 Basic Layout/Design I.	2	32	GRCO 121 Basic Layout/Design II.	2
GRCO 130 Basic Photography	1	17	GRCO 141 Advanced Typesetting.	1
GRCO 132 Darkroom Techniques	1	24	GRCO 141L Adv Typesetting Lab	2
GRCO 140 Basic Typesetting	1	17	PE Activity	2
GRCO 140L Basic Typesetting Lab 2	2	45	General Education	3
PE Activity	2	48	Elective	3
General Education	3	47		
	18	369		19
				330

		Second Year:	
<i>Fall Semester</i>		<i>Spring Semester</i>	
BUGB 141 Business Math or		GRCO 231 Process Photo II	1
MATH 110 Finite Math.	3-2	GRCO 231L Process Photo II Lab	3
GRCO 230 Process Photo I.	1	GRCO 241 Image Prep II	1
GRCO 230L Process Photo I Lab	3	GRCO 241L Image Prep II Lab	3
GRCO 240 Image Prep I	1	GRCO 251 Offset Press II.	1
GRCO 240L Image Prep I Lab	3	GRCO 251L Offset Press II Lab	3
GRCO 250 Offset Press I	1	GRCO 260 Cost Estimating	3
GRCO 250L Offset Press I Lab	3	Elective	3
Elective	3		
	18-17	47	18
	349-334		349

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 of 2.00 ("C") in each MECH course and in MECH 125 and must satisfy all other graduation requirements.

Minimum Semester Hours Required (75)

SUGGESTED COURSE SEQUENCING:

		First Year:			
		Sem	Con		
<i>Fall Semester</i>		Hrs	Hrs	<i>Spring Semester</i>	Sem Con
					Hrs Hrs
*MECH 105 Intro/Shop Practices	...3	77		MECD 115 Heavy Equip Maint	...3 52
MECH 113 Internal Combust Eng	...5	77		MECD 120 Diesel Engn Recond	...4 77
MECH 121 Clutch/Standard Trans	...2	52		MECD 150 Hydraulic System I	...4 65
INSA 110,110L Basic Elect./Lab	...4	69		MECD 132 Heavy Equip Drivetr	1.5 102
MECH 125 Light Duty Brakes	...3	60	**	Elective-Communications	...3 47
MECD 131 Heavy Duty Brakes	...4	77		MECH 115 Appl. Math/Mech.	...2 32
		21	412		21 375

		Second Year:			
<i>Fall Semester</i>				<i>Spring Semester</i>	
MECD 222 Fuel Systems	...2	47		MECD 275 Heavy Equip Trbshoet	3 65
MECD 225 Diesel Engn Recond II	...4	90		MECD 223 Diesel Engine Analysis	
MECD 232 Hvy Equip Drivetr II	...5	102		Troubleshoot	...3 77
INSA 220 Industrial Safety Pract	...3	47		MECD 251 Hydraulics Systems II	...3 65
WELD 151 Industrial Welding I	...2	47		MECH 133 Air Conditioning	...3 52
		16	333	WELD 152 Industrial Welding II	...2 47
				MANG 121 Human Relation/Business	
				or equivalent	...3 47
					17 353

*MECH 105 may be waived by previous training or experience upon the recommendation of the instructor.

**Exact course to be approved by faculty adviser according to individual needs.

MACHINE TRADES AND MANUFACTURING TECHNOLOGY

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. Also, 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 mathematical sciences is 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.

Minimum Semester Hours Required (78)**1. General Education: (24-25 hrs.)**

Six semester hours of English

ENGW 111 and 112 or 115

(6)

Seven (7) or eight (8) semester hours of Mathematics satisfied by completing one of the following:

ENGT 101, 102 Technical Math I and II

or

MATH 113, 130 College Algebra, Trigonometry

(7-8)

Five semester hours of Physics

PHYS 111, PHYS 111L General Physics and Lab

(5)

Six semester hours selected from the following:

(6)

ANTH 101, 102, 222

POLA 101, 102, 256, 261, 262

ECON 201*, 202

PSYC 121, 122

ENLI 131, 132, 134, 135,

SOCL 210

141, 142, 143, 145

SOCO 144, 260, 264

GEOG 103

HIST 101, 102, 120, 131

132, 136, 137

*Recommended as one selection

2. Related Courses: (11 credits as follows)

INSA 110, 110L Basic Electronics and Lab

(4)

ENGT 210, 210L Computer Aided Drafting and Lab (or equivalent)

(4)

MANG 201 Principles of Management

(3)

3. Required Courses: (39 hrs.)

MAMT 105 (2) MAMT 125 (4) MAMT 151 (4)

MAMT 106 (1) MAMT 130 (4) MAMT 155 (4)

MAMT 110 (1) MAMT 135 (3) MAMT 160 (2)

MAMT 115 (3) MAMT 140 (3) MAMT 165 (2)

MAMT 120 (4) Plus either MAMT 145 (2) or MAMT 207 (2)

4. Physical Education Activities: (4 hrs.)

Completion of four credit hours selected from courses numbered PHYE 100-199.

See "Associate Degree Requirements," page 40.

SUGGESTED COURSE SEQUENCING:

		First Year:			
<i>Fall Semester</i>	<i>Sem</i>	<i>Con</i>	<i>Spring Semester</i>	<i>Sem</i>	<i>Con</i>
	<i>Hrs</i>			<i>Hrs</i>	
MAMT (from above list)	9	120	MAMT (from above list)	12	268
ENGW 111 English Composition . . .	3	47	ENGW 112 English Composition or		
ENGT 101 Technical Math I or			ENGW 115 Technical Writing . . .	3	47
MATH 113 College Algebra	4	60	ENGT 102 Technical Math II or		
Social Science	3	47	MATH 130 Trigonometry	3-4	47-62
PE Activity	1	24	PE Activity	1	24
	20	298		19-20	386-401
Second Year:					
MAMT (from above list)	9	172	MAMT (from above list)	13	292
INSA 110 Basic Electronics	3	47	ENGT 210 Comp Aided Drafting . . .	2	32
INSA 110L Basic Electronics Lab . .	1	25	ENGT 210L Comp Aided Drafting		
PHYS 111 General Physics	4	62	Lab	2	64
PHYS 111L General Physics Lab . . .	1	32	MANG 201 Prin of Management . . .	3	47
Social Science	3	47	PE Activity	1	24
PE Activity	1	24		21	459
	22	409			

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 (74-76)

1. *General Education:* (15 credit hours)

A. Six semester hours of English:

- ENGW 111 English Composition and (3)
- ENGW 112 English Composition or ENGW 115 Technical Writing* (3)
- or
- ENGW 126 and 127 Honors English (6)

*NOTE: Students should make certain of the transferability of the entire course sequence.

B. *Social Sciences/Literature/Humanities:* (9 credit hours)

To be selected from the following:

- | | |
|--------------------------|------------------------------|
| ANTH 101, 102, 222 | POLS 101, 102, 256, 261, 262 |
| ECON 201*, 202 | PSYC 121, 122 |
| ENLI 131, 132, 134, 135, | SOCI 210 |
| 141, 142, 143, 145 | SOCO 144, 260, 264 |
| GEOG 103 | |
| HIST 101, 102, 120, 131 | |
| 132, 136, 137 | |

*Recommended as one selection.

2. *Laboratory Science and Mathematics:* (29 to 31 credit hours)

A. Twelve or fourteen semester hours of mathematics chosen from the following:

MATH 113, 130, 151 (12)

or

MATH 151, 152, 253 (14)

B. Ten semester hours of Physics:

PHYS 111, 111L, 112, 112L (10)

C. Five semester hours of Chemistry:

CIEM 121, 121L (5)

D. Two semester hours of

Computer Science (2)

3. *Engineering Technology:* (7 credit hours)

The following are required:

ENGT 105, 105L or 210, 210L, and 241.*

*NOTE: Course equivalents for ENGT 105 or 210 series are acceptable with prior approval only.

4. *Machining and Manufacturing:* (19 credit hours)

The following courses are required:

MAMT 105 MAMT 125

MAMT 115 MAMT 151

MAMT 120 MAMT 165

5. *Physical Education Activities:* (4 credit hours)

Successful completion of 4 credit hours selected from courses numbered PHYE 100-199. See "Associate Degree Requirements", page 40.

SUGGESTED COURSE SEQUENCING:

		First Year:	
		Sem	Sem
Fall Semester	Hrs	Spring Semester	Hrs
ENGW 111 English Composition	3	ENGW 112 English Composition	3
MATH 113 College Algebra	4	MATH 130 Trigonometry	3
CSCI A Computer course	2	CHEM 121 General Chemistry I	4
Soc Sci/Literature/Humanities	3	CHEM 121L General Chemistry I Lab	1
MAMT 105 Blueprint-Machinist	2	ENGT 105 Engineering Drawing*	2
MAMT 115 Intro. to Mach. Shop	3	ENGT 105L Engineering Drawing Lab*	2
PHYE Physical Ed Activity	1	MAMT Machine-Mfg. requirement	4

*Equivalents acceptable with prior approval only.

		Second Year:	
		Spring Semester	
PHYS 111 General Physics I	4	PHYS 112 General Physics II	4
PHYS 111L General Physics I Lab	1	PHYS 112L General Physics II Lab	1
Soc Sci/Literature/Humanities	3	Soc Sci/Literature/Humanities	3
MATH 151 Calculus I	5	ENGT 241 Statics/Strength Mat'ls	3
MAMT Machine-Mfg. requirement	4	MAMT 151 Numerical Control I	4
PHYE Physical Ed Activity	1	MAMT 165 Manufacturing Processes	2
		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)

<i>Fall Semester</i>		<i>Sem</i>	<i>Con</i>	<i>Spring Semester</i>		<i>Sem</i>	<i>Con</i>
		<i>Hrs</i>	<i>Hrs</i>			<i>Hrs</i>	<i>Hrs</i>
MAMT 105 Blueprint Reading	2	30	MAMT 130 Machine Technology III	4	90		
MAMT 106 Geometric Tolerance	1	15	MAMT 165 Manu. Processes	2	30		
MAMT 110 Gauging & Meas. Tools	1	15	MAMT 136 Job Shop Machining I	3	60		
MAMT 115 Intro to Machine Shop	3	60	MAMT 151 Numerical Control-				
MAMT 107 Machine Shop Math	2	30	Machining I	4	75		
MAMT 120 Machine Technology I	4	90	MAMT 140 Job Shop Machining II	4	82		
MAMT 125 Machine Technology II	4	90	MAMT 155 Numerical Control-				
MAMT 160 Properties of Materials	2	30	Machining II	4	82		
		19	360	ENGW Vocational Communications or			
				equiv ENGW 086 minimum	3	47	
					24	467	

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, and FCAW 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 (74)

1. *General Education:* (12 hrs. plus 4 hrs. physical education)
 Six (6) semester hours of English satisfied by completing any one of the following sequences:
 ENGW 086 and 087, or 121
 or
 ENGW 111 and 087, 112, 115 or 121
 or
 ENGW 126 and 127
 Plus six (6) semester hours selected from the following:
 ANTH 101, 102, 222 POLS 101, 102, 256, 261, 262
 ECON 201, 202 PSYC 121, 122
 ENLI 131, 132, 134, 135, SOCI 210
 141, 142, 143, 145 SOCO 144, 260, 264
 GEOG 103
 HIST 101, 102, 120, 131
 132, 136, 137

2. *Required Courses:* (53 hrs.)
 WELD 110 (8) WELD 122 (2) WELD 145 (3)
 WELD 112 (4) WELD 131 (2) WELD 230 (8)
 WELD 120 (8) WELD 132 (2) WELD 240 (8)
 WELD 121 (2) WELD 141 (4) WELD 115 (2)

3. *Electives:* (5 hrs)

SUGGESTED COURSE SEQUENCING:

		First Year:			
		<i>Sem</i>	<i>Con</i>		
<i>Fall Semester</i>	<i>Hrs</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Sem</i>	<i>Con</i>
				<i>Hrs</i>	<i>Hrs</i>
ENGW 086 Vocational Communicatns or ENGW 111 English Composition	3	47	ENGW 087 Vocational Communicatns or ENGW 112 English Composition	3	47
WELD 110 Welding Lab I	8	227	WELD 120 Welding Lab II	8	227
WELD 112 Weld Theory	4	70	WELD 121 Blueprint Reading I	2	47
WELD 115 Applied Math	2	32	WELD 131 Fabrication Layout I	2	47
PE Activity	2	48	PE Activity	2	48
	19	424		17	416
Second Year:					
		<i>Sem</i>	<i>Con</i>		
<i>Fall Semester</i>	<i>Hrs</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Sem</i>	<i>Con</i>
				<i>Hrs</i>	<i>Hrs</i>
WELD 122 Blueprint Reading II	2	47	WELD 132 Fabrication Layout II	2	47
WELD 141 Shop Mgmt/Structural Theory	4	62	WELD 145 Metallurgy	3	47
WELD 230 Welding Lab III	8	227	WELD 240 Welding Lab IV	8	227
General Education, Social Science	3	47	General Education, Social Science	3	47
	17	383	Electives	5	77
				21	445

WELDING

(Certificate of Occupational Proficiency)

COMPLETION REQUIREMENTS:

First Year:					
<i>First Semester</i>	<i>Sem</i>	<i>Con</i>	<i>Second Semester</i>	<i>Sem</i>	<i>Con</i>
	<i>Hrs</i>	<i>Hrs</i>		<i>Hrs</i>	<i>Hrs</i>
WELD 110 Welding Lab I	8	227	WELD 120 Welding Lab II	8	227
WELD 112 Welding Theory	4	70	WELD 141 Shop Mgmt/Struct Thry..4		62
WELD 115 Applied Mathematics	2	32	WELD 145 Metallurgy	3	47
	<u>14</u>	<u>329</u>		<u>15</u>	<u>336</u>
Second Year:					
<i>Third Semester</i>			<i>Fourth Semester</i>		
WELD 121 Blueprint Reading I	2	47	WELD 122 Blueprint Reading II	2	47
WELD 131 Fabrication & Layout I	2	47	WELD 132 Fabrication & Layout II	2	47
WELD 230 Welding Lab III	8	227	WELD 240 Welding Lab IV	8	227
ENGW 106 Vocational Commun.	3	47	Restricted Elective	3	47
	<u>15</u>	<u>368</u>		<u>15</u>	<u>368</u>

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

SCHOOL OF NATURAL SCIENCES AND MATHEMATICS

James B. Johnson, Acting Dean

Departments
and

Faculties

Agriculture and Home Economics

R. Moran, (Chair), C. Taylor

Biological Sciences

R. Ballard, B. Bauerle, P. Chowdry, E. Hurlbut,
W. Kelley, G. McCallister (Chair), 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. Britton, J. Brock, W. Davenport,
A. Ektare, D. Hafner, E. Hawkins (Chair),
J. Henson, C. Kerns, J. Kramer, D. Mottram,
T. Mourcy, T. Novotny, L. Payne, J. Reuszer,
J. Rybak, D. Scott, J. Wethington, Z. Wu

Geology

D. Foutz, J. Johnson, V. Johnson,
J. Roadifer (Chair)

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 associate degrees 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.

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

Areas of Emphasis:	Agriculture
	Biology
	Computer Science
	*Engineering
	*Forestry
	Geology
	Health Related Studies for transfer into a baccalaureate program at another institution:
	Medical Technology
	Pharmacy
	Physical Therapy
	Mathematics
	Physics
	*Transfer programs. See additional discussion below.

ASSOCIATE OF APPLIED SCIENCE

Areas of Emphasis:	Civil Engineering Technology
	Environmental Restoration (proposed)

CERTIFICATE

Areas of Emphasis:	Drafting Technology
	Farm and Ranch Business Management

General Information*Preprofessional Preparation*

Pre-dentistry	Pre-optometry
Pre-medicine	Pre-veterinary Medicine

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.

Health Related Studies

Pre-medical Technology	Pre-physical Therapy
Pre-pharmacy	

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.

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.

Teacher Certification

Certification to teach mathematics or science in the secondary schools and certification to teach in elementary schools can be obtained at Mesa State College. This can be done by earning a bachelor's degree with an appropriate emphasis from Mesa State College while also earning credit in prescribed Metropolitan State College professional education courses taught on the Mesa State College campus. Certification is thus from Metropolitan State College.

Certification to teach mathematics is obtained with a mathematics emphasis as described on p 113 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 physics as described on pp 102 and 112 of this catalog. For information about elementary certification and additional information about secondary certification the student should refer to the Consortium section of this catalog.

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.

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):

<i>Areas of Study Emphasis Available</i>	<i>Degrees/Certificates</i>	<i>Details</i>
Agriculture	AS	p. 101
Biology	BS, AS	pp. 101-104
Civil Engineering Technology	AAS	pp. 104-105
Computer Science	BS, AS	pp. 105-106
Computer Science Business Software	BS	p. 107
Drafting Technology	Certificate	p. 108
Engineering	AS	pp. 108-109
Environmental Restoration (approval pending)		p. 109
Farm and Ranch Business Management	Certificate	p. 110
Geology	BS, AS	pp. 110-112
Health Related Studies		
For transfer into a baccalaureate program at another institution:		
Medical Technology		p. 117
Pharmacy		p. 118
Physical Therapy		pp. 118-119
Mathematics	BS, AS	pp. 112-114
Physics	BS, AS	pp. 114-116
Pre-Forestry	AS	pp. 116-117

3. *Electives:* (28-29 hrs.)

Some of the elective courses are usually chosen from the disciplines chemistry and mathematics.

SUGGESTED COURSE SEQUENCING:

		First Year:		
		<i>Sem</i>		<i>Sem</i>
<i>Fall Semester</i>	<i>Hrs</i>		<i>Spring Semester</i>	<i>Hrs</i>
ENGW 111 English Composition	3		ENGW 112 English Composition	3
BIOL 105,105L Attributes Lvng Sys	5		BIOL 106,106L Prin Animal Biology	5
MATH 113 College Algebra	4		MATH 130 Trigonometry	3
*Literature or Social Science	3		*Literature or Social Science	3
PE Activity	1		PE Activity	1
Second Year:				
<i>Fall Semester</i>			<i>Spring Semester</i>	
BIOL 107,107L Prin Plant Biology	5		BIOL 201,201L Devopmental Biology or	
CHEM 131,131L General Chemistry	5		BIOL 202,202L Cellular Biology or	
Electives	5		BIOL 211,211L Ecosystem Biol	4-5
PE Activity	1		CHEM 132,132L General Chemistry	5
			Electives	5
			PE Activity	1

*See pp. 37-39 for listing of approved general education courses.

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 hours credit selected from:	
BIOL 107,107L	(5)		
BIOL 301,301L	(5)		
BIOL 482	(2)		
BIOL 483	(2)		
or		MATH 113	(4)
BIOL 499	(4)	MATH 130	(3)
		MATH 146	(5)
		MATH 151, 152	(10)
		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	(10)

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:	
		<i>Sem</i>	<i>Sem</i>
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
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:	
<i>Fall Semester</i>		<i>Spring Semester</i>	
BIOL 107,107L Prin Plant Biology	5	BIOL 201,201L Developmental Biol or	
CHEM 131,131L General Chemistry	5	BIOL 202,202L Cellular Biology or	
*Psychology	3	BIOL 211,211L Ecosystem Biol	4-5
*Literature	3	CHEM 132,132L General Chemistry	5
PE Activity	1	*Social Science	3
		*Arts	3
		PE Activity	1

*See pp. 37-39 for listing of approved general education courses.

BIOLOGY EMPHASIS WITH TEACHER CERTIFICATION

(Bachelor of Science in Biological and Agricultural Sciences)

DEGREE REQUIREMENTS:

The student must satisfy the requirement listed previously for a bachelor's degree with an emphasis in biology.

The student must also elect the following required courses for teacher certification:

BIOL 393	(3)	**EDU 328	(3)
EDUC 221,222	(6)	**EDU 360, 361	(6)
**EDU 320,321,322	(9)	**EDU 429	(3)

**Metropolitan State College courses offered on the Mesa State College Campus.

CIVIL ENGINEERING TECHNOLOGY

(Associate of Applied Science)

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

ENGW 111 English Composition	(3)		
ENGW 115 Technical Writing	(3)		
*Behavioral or Social Science or Literature	(6)		

2. *Required Core Courses:* (39 hrs.)

ENGT 101,102	(8)	ENGT 240	(3)
ENGT 120	(3)	ENGT 241	(3)
ENGT 210,210L	(3)	ENGT 242	(3)
ENGT 220	(3)	ENGT 245,245L	(3)
ENGT 225,225L	(4)	ENGT 253,253L	(3)
ENGT 230	(3)		

3. *Related Study Area Requirements:* (19 hrs.)

a. Computer Science			
CSCI 120	(3)		
b. Engineering:			
ENGR 105,105L	(4)	ENGT 231,231L	(3)
ENGR 111	(3)	ENGR 232,232L	(3)
ENGR 159	(3)		

SUGGESTED COURSE SEQUENCING:

	First Year:			
	Sem Hrs	Con Hrs	Spring Semester	Sem Hrs
<i>Fall Semester</i>				
ENGW 111 English Composition ...	3	47	ENGT 115 Technical Writing ...	3 47
ENGT 101 Technical Math I ...	4	62	ENGR 111 Engr. Graphic Des ...	3 77
ENGT 105,105L Basic Engr Draw...	3	79	ENGT 102 Technical Math II ...	4 62
CSCI 120 Tech. Software ...	3	47	ENGT 210,210L Comp Aided Draft...	4 94
*Literature or Psychology			ENGT 241 Statics/Stren Materials I...	3 47
or Social Science ...	3	47	PE Activities ...	2 48
PE Activities ...	2	48		

Second Year:

<i>Fall Semester</i>		<i>Spring Semester</i>	
ENGT 120 Engineering Economics .3	47	ENGT 220 Spec and Cost Estimates.3	47
ENGT 242 Strength of Materials II..3	47	ENGT 225,225L Concrete & Soils...4	79
ENGT 245,245L Fluid Mech & Hyd.3	64	ENGT 240 Timber & Steel Design ...3	47
ENGR 159 Energy & Society.....3	47	ENGT 253,253L Topo/Civil Drafting..3	64
ENGR 231,231L Surveying I.....3	64	ENGT 230 Water Resources Design..3	47
*Literature or Psychology or Social Science	3 47	ENGR 231,231L Surveying II.....3	64

COMPUTER SCIENCE

(Associate of Science)

DEGREE REQUIREMENTS:

1. *General Education:* (12 hrs. plus 4 hrs. physical education)
 - ENGW 111 English Composition (3)
 - ENGW 115 Technical Writing (3)
 - *Literature or Social Science (6)
2. *Required Core Courses:* (19 hrs.)

CSCI 111,112	(6)	CSCI 242	(3)
CSCI 131,131L	(4)	CSCI 250	(3)
CSCI 241	(3)		
4. *Electives:* (29 hrs.)
It is strongly recommended that these include MATH 260 or 265, MATH 270 and STAT 200

SUGGESTED COURSE SEQUENCING:

	First Year:		
	<i>Sem</i>		<i>Sem</i>
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
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 Prog.....4		STAT 200 Probability & Statistics.....3	
MATH 151 Calculus I.....5		MATH 152 Calculus II.....5	
PE Activities	2	PE Activities	2

Second Year:

<i>Fall Semester</i>		<i>Spring Semester</i>	
CSCI 241 Computer Architecture I.....3		CSCI 242 Computer Architecture II.....3	
CSCI 250 Data Structures	3	MATH 265 Linear Algebra.....3	
MATH 253 Calculus III	4	*Literature or Social Science	3
MATH 270 Discrete Math I	3	Electives.....	6
*Literature or Social Science	3		

*See pp. 37-39 for listing of approved general education courses.

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 361	(4)
CSCI 131,131L	(4)	MATH 370	(3)
CSCI 250	(3)	PHYS 121	(4)
MATH 265	(3)	PHYS 122,122L	(5)
MATH 270	(3)		

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:			
	<i>Sem</i>		<i>Hrs</i>
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
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:			
<i>Fall Semester</i>		<i>Spring Semester</i>	
CSCI 241 Computer Architecture I	3	CSCI 242 Computer Architecture II	3
CSCI 250 Data Structures	3	MATH 253 Calculus III	4
MATH 270 Discrete Math I	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. 37-39 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 270	(3)
CSCI 321	(3)	MATH 361	(4)
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 332	(3)
CSCI 460	(3)	CISB 391	(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:	
		Sem	Sem
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
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		
		<i>Spring Semester</i>	
<i>Fall Semester</i>		CSCI 131,131L FORTRAN Prog	4
CSCI 250 Data Structures	3	STAT 214 Business Statistics	3
BUGB 231 Survey of Business Law	3	ACCT 202 Principles of Acct II	3
ACCT 201 Prin of Accounting I	3	*Biology	3
MANG 270 Prin. of Mgmt	3	*Arts	3
MATH 270 Discrete Math	3	PE Activity	1
PE Activity	1		

*See pp. 37-39 for listing of approved general education courses.

DRAFTING TECHNOLOGY

(Associate of Applied Science)

STUDENTS ARE NO LONGER BEING ADMITTED TO THIS PROGRAM. Please contact the chairman of the Department of Mathematics, Computer Science and Engineering concerning alternative programs in Civil Engineering Technology and Environmental Restoration.

Students currently enrolled in this program will have until December, 1991 to complete the program.

DRAFTING TECHNOLOGY

(Certificate of Occupational Proficiency)

COMPLETION REQUIREMENTS:

The courses on the following list must be completed with a minimum grade point average of 2.00. They generate 42 hrs. of credit from 822 contact hours.

		First Year:			
	Sem Hrs	Con Hrs		Sem Hrs	Con Hrs
ENGT 101,102 Technical Math I,II	.8	124	ENGT 252,252L Struct Drafting	3	64
RNGR 105,105L Basic Engr Draw	.4	79	ENGT 253,253L Topo/Civ Draft/Des	3	64
FNGT 158,158L Arch Drafting I	.4	79	ENGT 254,254L Piping Drafting	3	64
ENGT 162,162L Arch Draft II, Lab	.4	79	ENGT 256,256L Mech/Elec Draft	3	64
ENGT 210,210L Comp Aided Draft	.4	94	CSCI 120 Technical Software	3	47
ENGT 251,251L Elect Draft Des I	.3	64			

ENGINEERING

(Associate of Science)

DEGREE REQUIREMENTS:

- General Education:* (12 hrs. plus 4 hrs. physical education)
 - ENGW 111,112 English Composition (6)
 - HIST 101,102 Western Civilizations (6)
- Required Core Courses:* (18 hrs.)
 - ENGR 111 (3) ENGR 251,251L (4)
 - ENGR 240 (3) **ENGR 252,252L (4)
 - ENGR 241 (3) **ENGR 253 (2)
 - **ENGR 231,231L (3) PHYS 341 (3)
 - **ENGR 232,232L (3) PHYS 342 (3)

3. *Related Study Area Requirements:* (3512 hrs)

- a. Chemistry:
CHEM 151,151L (5)
- b. Computer Science
CSCI 131,131L (4)
- c. Mathematics:
MATH 151,152,253(14) MATH 260 (3)
- d. Physics
PHYS 121,122 (8) PHYS 122L (1)

4. *Electives*

Since the requirements indicated above exceed the 64 semester-hour minimum requirement for an Associate of Science degree, there are no electives. For transfer into engineering programs, however, MATH 265 and PHYS 223,223L are strongly recommended. An adviser should be consulted.

SUGGESTED COURSE SEQUENCING:

First Year:

<i>Fall Semester</i>	<i>Sem Hrs</i>	<i>Spring Semester</i>	<i>Sem Hrs</i>
ENGW 111 English Composition	3	ENGW 112 English Composition	3
ENGR 111 Engr Graphics & Design	3	CSCI 131,131L FORTRAN Prog.	4
MATH 151 Calculus I	5	MATH 152 Calculus II	5
CHEM 151,151L Engineering Chem	5	PHYS 121 Classical Phys I	4
History or Social Science Elective	3	PE Activities	2

Second Year:

<i>Fall Semester</i>	<i>Sem Hrs</i>	<i>Spring Semester</i>	<i>Sem Hrs</i>
ENGR 240 Statics	3	ENGR 241 Dynamics	3
ENGR 251,251L Circuit Analysis	4	**ENGR 253 Electromechanical Devices	3
MATH 253 Calculus III	4	PHYS 342 Fluid/Thermal Sciences II	3
PHYS 122 Classical Phys II	4	MATH 260 Differential Equations	3
PHYS 122L Exper Mechanics Lab	1	History or Social Science Elective	3
PHYS 341 Fluid/Thermal Sciences I	3	PE Activities	2

**An adviser should be consulted about selections among these courses based upon the chosen branch of engineering.

ENVIRONMENTAL RESTORATION

(Associate of Applied Science)

An Associate of Applied Science degree in Environmental Restoration is proposed. Students interested in this degree should request specific information from the chairman of the Department of Mathematics, Computer Science and Engineering. Approval to offer this program is pending.

FARM AND RANCH BUSINESS MANAGEMENT

(Certificate)

COMPLETION REQUIREMENTS:

Eight of the courses AGRM 101 through AGRM 109, Farm and Ranch Business Management I through IX, must be completed with a minimum grade point average of 2.00. Each course generates 3 hours of credit from 94 contact hours, for a minimum of 24 hours of credit and 752 contact hours.

	<i>Sem Hrs</i>	<i>Con Hrs</i>
AGRM 101 Farm & Ranch Business Management I	3	94
AGRM 102 Farm & Ranch Business Management II	3	94
AGRM 103 Farm & Ranch Business Management III	3	94
AGRM 104 Farm & Ranch Business Management IV	3	94
AGRM 105 Farm & Ranch Business Management V	3	94
AGRM 106 Farm & Ranch Business Management VI	3	94
AGRM 107 Farm & Ranch Business Management VII	3	94
AGRM 108 Farm & Ranch Business Management VIII	3	94
AGRM 109 Farm & Ranch Business Management IX	3	94

GEOLOGY

(Associate of Science)

DEGREE REQUIREMENTS:

- General Education:* (12 hrs. plus 4 hrs. physical education)
 - ENGW 111,112 English Composition (6)
 - *Literature or Social Science (6)
- Required Core Courses:* (16 hrs.)

GEOL 111,111L	(5)	GEOL 201,201L	(3)
GEOL 112,112L	(5)	GEOL 203	(3)
- Electives:* (32 hrs.)

The elective courses chosen are usually in the disciplines biology, chemistry, mathematics, and physics.

SUGGESTED COURSE SEQUENCING:

		First Year:	
		<i>Sem</i>	<i>Sem</i>
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
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
 <i>Fall Semester</i>		 <i>Spring Semester</i>	
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. 37-39 for listing of approved general education courses.

GEOLOGY

(Bachelor of Science in Physical 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 (3)
 - 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:	
		<i>Sem</i>	<i>Sem</i>
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
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:

<i>Fall Semester</i>		<i>Spring Semester</i>	
GEOL 201,201L Stratigraphy	3	GEOL 203 Intro to Environ Geology	3
CHEM 131,131L General Chemistry	5	CHEM 132,132L General Chemistry	5
PHYS 111,111L General 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. 37-39 for listing of approved general education courses.

MATHEMATICS

(Associate of Science)

DEGREE REQUIREMENTS:

- General Education:* (12 hrs. plus 4 hrs. physical education)
 - ENGW 111 English Composition (3)
 - ENGW 115 Technical Writing (3)
 - *Literature or Social Science (6)
- Required Core Courses:* (20 hrs.)
 - MATH 151,152,253 (14) MATH 265 (3)
 - MATH 260 (3)
- Electives:* (28 hrs.)

It is strongly recommended that these include CSCI 120 and STAT 200.

SUGGESTED COURSE SEQUENCING:

Fall Semester	First Year:		Spring Semester	Semi Hrs
	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 Prog.		4	MATH 152 Calculus II	5
MATH 151 Calculus I		5	*Literature or Social Science	3
PE Activities		2	PE Activities	2

Second Year:

<i>Fall Semester</i>		<i>Spring Semester</i>	
MATH 253 Calculus III	4	MATH 260 Differential Equations	3
STAT 200 Probability & Statistics	3	MATH 265 Linear Algebra	3
*Literature or Social Science	3	Electives	10
Electives	6		

*See pp. 37-39 for listing of approved general education courses.

MATHEMATICS

(Bachelor of Science in Physical and Mathematical Sciences)

DEGREE REQUIREMENTS:

- 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:		<i>Sem</i>
<i>Fall Semester</i>	<i>Hrs</i>	<i>Hrs</i>
ENGW 111 English Composition	3	ENGW 115 Technical Writing
CSCI 111 Computer Science I	3	CSCI 112 Computer Science II
CSCI 131,131L FORTRAN Programming	4	MATH 152 Calculus II
MATH 151 Calculus I	5	PHYS 121 Classical Physics I
PE Activities	2	PE Activities

Second Year:		<i>Sem</i>
<i>Fall Semester</i>	<i>Hrs</i>	<i>Hrs</i>
CSCI 241 Architecture I	3	CSCI 242 Architecture II
CSCI 250 Data Structures	3	MATH 260 Differential Equations
MATH 253 Calculus III	4	MATH 265 Linear Algebra
MATH 270 Discrete Math I	3	*STAT 200 Probability & Statistics
PHYS 122 Classical Physics II	4	*Arts
PHYS 122L Experimental Mech Lab	1	*Literature

*See pp. 37-39 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	(3)
ENGW 115	(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)	MATH 253	(4)
CSCI 131,131L	(4)	or MATH 260	(3)
CSCI 120	(3)	CHEM 131,131L,132,132L	(10)
MATH 151,152	(10)	or GEOL 111,111L,112,112L	(10)
		or PHYS 121,122,122L	(9)

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

MATH 265	(3)	MATH 310 or 390	(3)
MATH 347	(3)	MATH 450 or 452	(3)
MATH 380	(2)	STAT 200	(3)
MATH 385	(4)	STAT 311	(3)

4. *Electives:* (36 hrs.)

The student must elect the following required courses for teacher certification:

EDUC 221, 222	(6)	**EDU 360, 361	(6)
**EDU 320, 321, 322	(9)	*EDU 429	(12)
**EDU 328	(3)		

**Metropolitan State College courses taught at the Mesa State College location.

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

		First Year:	
		Sem	Sem
Fall Semester	Hrs	Spring Semester	Hrs
ENGW 111 English Composition	3	ENGW 112 English Composition	3
CSCI 111 Computer Science I	3	CSCI 112 Computer Science II	3
MATH 151 Calculus I	5	MATH 152 Calculus II	5
EDUC 221 Intro to Education	3	EDUC 222 Intro to Classroom	3
PE Activities	2	PE Activities	2

Second Year:

Fall Semester	Hrs	Spring Semester	Hrs
CSCI 120 Technical Software	3	STAT 200 Probability & Statistics	3
MATH 253 Calculus III or MATH 260 Differential Equatns	3-4	MATH 265 Linear Algebra	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
*Biology or Psychology	3	*Biology or Psychology	3

*See pp. 37-39 for listing of approved general education courses.

PHYSICS

(Associate of Science)

DEGREE REQUIREMENTS:

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

ENGW 111,112 English Composition	(6)
*Literature or Social Science	(6)
- Physics Course Requirements:* (16 hrs.)

PHYS 121,122	(8)	PHYS 223L	(1)
PHYS 122L	(1)	PHYS 224	(3)
PHYS 223	(3)		
- Related Study Area Requirements:* (17 hrs.)

MATH 151,152,253	(14)
MATH 260	(3)
- Electives:* (15 hrs.)

It is strongly recommended that these include BIOL 105,105L and CHEM 151,151L.

SUGGESTED COURSE SEQUENCING:

		First Year:		
		<i>Sem</i>		<i>Sem</i>
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>		<i>Hrs</i>
ENGW 111 English Composition	3	ENGW 112 English Composition	3	
PHYS 121 Classical Physics I	4	PHYS 122 Classical Phys II	4	
MATH 151 Calculus I	5	PHYS 122L Exper Mech Lab	1	
HIST 101 Western Civilizations	3	MATH 152 Calculus II	5	
PE Activities	2	HIST 102 Western Civilizations	3	
		PE Activities	2	

		Second Year:		
		<i>Sem</i>		<i>Sem</i>
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>		<i>Hrs</i>
MATH 253 Calculus III	4	PHYS 223 Classical Phys III	3	
CHEM 151,151L Engineering Chem	5	PHYS 223L Exper Electromag Lab	1	
BIOL 105,105L Attributes Liv Sys	5	PHYS 224 Modern Physics	3	
Elective	3	MATH 260 Differential Equations	3	
		Electives	6	

*See pp. 37-39 for listing of approved general education courses.

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 Civ (6)
 - *Social Science (3)
2. *Core Requirements:* (39 hrs.)
 - PHYS 121,122,122L,223,223L (13) MATH 360 (3)
 - PHYS 482 (1) CHEM 131,131L,132,132L (10)
 - PHYS 494 (2) or GEOL 111,111L,112,112L (10)
 - MATH 253 (4) or Computer Science courses,
 - MATH 260 (3) CSCI 111 and higher, yield-
 - MATH 265 (3) ing 10 hours credit (10)
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:* (12-13 hrs.)
 - Two courses from the following list:
 - PHYS 352 (3) PHYS 432 (3)
 - PHYS 396 (3) PHYS 441 (3)
 - PHYS 431 (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:			
	<i>Sem</i>		<i>Sem</i>
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
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
		PE Activities	2

Second Year:			
<i>Fall Semester</i>		<i>Spring Semester</i>	
MATH 253 Calculus III	4	PHYS 223 Classical Physics III	3
CHEM 151,151L Engeering Chemistry	5	PHYS 223L Exper Electromag Lab	1
BIOL 105,105L Attib. of Liv Sys	5	PHYS 362 Stat & Thermal Physics	3
PSYC 121 Gen Psychology	3	MATH 260 Differential Equations	3
		PSYC 122 Gen Psychology	3
		*Literature	3

*See pp. 37-39 for listing of approved general education courses.

PHYSICS EMPHASIS WITH TEACHER EDUCATION

(Bachelor of Science in Physical and Mathematical Sciences)

DEGREE REQUIREMENTS:

The student must satisfy the requirements listed previously for a bachelor's degree with an emphasis in physics.

The student must also elect the following required courses for teacher certification:

BIOL 393	(3)
EDUC 221,222	(6)
**EDU 320,321,322	(9)
**EDU 328	(3)
**EDU 360,361	(6)
**EDU 429	(3)

**Metropolitan State College courses taught at the Mesa State College location.

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

Same as for Physics baccalaureate program

PRE-FORESTRY EMPHASIS

(Associate of Science)

DEGREE REQUIREMENTS:

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

ENGW 111, 112 English Composition	(6)
*Literature or Social Science	(6)
- Required Core Courses:* (46 hrs.)
 - Biology:

BIOL 105,105L	(5)	BIOL 107,107L	(5)
BIOL 106,106L	(5)	BIOL 211,211L	(5)
 - Chemistry:

CHEM 121,121L	(5)	CHEM 122,122L	(5)
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 - Mathematics and Computer Science:

MATH 113	(4)	MATH 151	(5)
MATH 130	(3)	CSCI 131,131L	(4)

SUGGESTED COURSE SEQUENCING:

		First Year:	
		Sem	Sem
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
ENGW 111 English Composition	3	ENGW 112 English Composition	3
BIOL 105,105L Attributes Liv Sys	5	BIOL 106,106L Prin Animal Biology	5
CHEM 121,121L Intro Inorg Chem	5	CHEM 122,122L Intro Organ Chem	5
MATH 113 College Algebra	4	MATH 130 Trigonometry	3
PE Activities	2	PE Activities	2

		Second Year:	
		Sem	Sem
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
BIOL 107,107L Prin Plant Biology	5	BIOL 211,211L Ecosystem Biology	5
MATH 151 Calculus I	5	CSCI 131,131L FORTRAN Prog.	4
*Literature	3	SPCH 102 Speechmaking	3
*Social Science	3	*Literature	3
		*Social Science	3

PREPROFESSIONAL STUDIES for transfer into a Medical Technology program at another institution

(Associate of Science)

DEGREE REQUIREMENTS:

1. *General Education:* (12 hrs. plus 4 hrs. physical education)
 - ENGW 111,112 (6)
 - *Literature or Social Science (6)
2. *Required Core Courses:* (35 hrs.)
 - a. Biology:
 - BIOL 105,105L (5) BIOL 250,250L (5)
 - BIOL 106,106L (5)
 - b. Chemistry:
 - CHEM 131,131L (5) CHEM 132,132L (5)
 - c. Mathematics:
 - MATH 119 (5) MATH 151 (5)
3. *Advised electives:* (35 hours)

SUGGESTED COURSE SEQUENCING:

		First Year:	
		Sem	Sem
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
ENGW 111 English Composition	3	ENGW 112 English Composition	3
BIOL 105,105L Attributes Liv Sys	5	BIOL 106,106L Prin Animal Biology	5
CHEM 131,131L General Chemistry	5	CHEM 132,132L General Chemistry	5
MATH 119 Precalculus Math	5	MATH 151 Calculus I	5

		Second Year:	
		Sem	Sem
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
SPCH 102 Speechmaking	3	BIOL 250,250L Gen Microbiology	5
*Literature or Social Science	3	*Literature or Social Science	3
Advised Electives	7	Advised Electives	6
PE Activities	2	PE Activities	2

*See pp. 37-39 for listing of approved general education courses.

PREPROFESSIONAL STUDIES for transfer into a Pharmacy program at another institution

(Associate of Science)

DEGREE REQUIREMENTS:

1. *General Education:* (15 hrs. plus 4 hrs. physical education)

ENGW 111,112 English Composition	(6)
Social Science	(6)
2. *Required Core Courses:* (35 hrs.)
 - a. *Biology:*

BIOL 105,105L	(5)	BIOL 250,250L	(5)
BIOL 106,106L	(5)		
 - b. *Chemistry:*

CHEM 131,131L	(5)	CHEM 132,132L	(5)
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 - c. *Mathematics:*

MATH 119	(5)	MATH 151	(5)
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3. *Related Study Area Requirements:*

SPCH 102	(3)
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3. *Advised Electives:* (10 hrs.)

SUGGESTED COURSE SEQUENCING:

		First Year:	
		Sem	
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
ENGW 111 English Composition	3	ENGW 112 English Composition	3
BIOL 105,105L Attributes Liv Sys	5	BIOL 106,106L Prin Animal Biol	5
CHEM 131,131L General Chemistry	5	CHEM 132,132L General Chemistry	5
MATH 119 Precalculus Math	5	MATH 151 Calculus I	5

		Second Year:	
		<i>Spring Semester</i>	
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
PHYS 111,111L Gen Physics	5	PHYS 112,112L Gen Physics	5
SPCH 102 Speechmaking	3	Advised Elective	5
Advised Elective	5	*Social Science	3
*Social Science	3	PE Activities	2
PE Activities	2		

*See pp. 37-39 for listing of approved general education courses.

PREPROFESSIONAL STUDIES for transfer into a Physical Therapy program at another institution

(Associate of Science)

DEGREE REQUIREMENTS:

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

ENGW 111,112 English Composition	(6)
*Social Science	(6)

2. *Science and Mathematics Course Requirements: (40 hrs.)*
 - a. *Biology:*

BIOL 105,105L	(5)	BIOL 141,141L	(5)
BIOL 106,106L	(5)		
 - b. *Chemistry:*

CHEM 121,121L	(5)	CHEM 122,122L	(5)
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 - c. *Mathematics:*

MATH 119	(5)		
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 - d. *Physics:*

PHYS 111,111L	(5)	PHYS 112,112L	(5)
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3. *Related Study Area Requirements: (6 hrs.)*

<i>Psychology:</i>			
PSYC 121	(3)	PSYC 233	(3)
4. *Advised Electives: (2 hrs.)*

SUGGESTED COURSE SEQUENCING:

First Year:			
	<i>Sem</i>		<i>Sem</i>
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
ENGW 111 English Composition	3	ENGW 112 English Composition	3
BIOL 105,105L Attributes Liv Sys	5	BIOL 106,106L Prin Animal Biology	5
CHEM 121,121L Intro Inorg Chem	5	CHEM 122,122L Intro Organic Chem	5
*Social Science	3	MATH 119 Precalculus Math	5
PE Activities	2		
Second Year:			
<i>Fall Semester</i>		<i>Spring Semester</i>	
BIOL 141,141L Hum Anat & Physiol	5	PHYS 112,112L Gen Physics	5
PHYS 111,111L Gen Physics	5	PSYC 233 Human Growth & Develop	3
PSYC 121 Gen Psychology	3	*Social Science	3
Advised Elective	2	Electives	3
		PE Activities	2

*See pp. 37-39 for listing of approved general education courses.

SCHOOL OF NURSING AND ALLIED HEALTH

Mary A. Turley, Dean

Departments
and
Faculties

Dental

V. Travis (Acting Chair)

Nursing

M. Conrad (ADN Chair), H. Covington, S. Dickson,

M. Forrest, J. Goodhart (Acting BSN Chair),

A. Lambeth, E. Mustee, G. Reichlin,

L. Stahl, E. Williams, D. Yocum

Radiologic Technology

C. Clark-Sorensen (Acting Director), C. Hines

The School of Nursing and Allied Health offers academic programs leading to the following baccalaureate (4-year) degrees, associate (2-year) degrees, and a certificate. Each program requires a separate admission application which must be received by March 1 of the desired year of admission.

Each new applicant will receive 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 Commission on Dental Accreditation, the National League for Nursing, and the Committee of Allied Health Accreditation of the American Medical Association.

BACHELOR OF SCIENCE IN NURSING (BSN)

ASSOCIATE OF APPLIED SCIENCE

Area of Emphasis: Radiologic Technology

ASSOCIATE OF SCIENCE -- NURSING

Area of Emphasis: Registered Nurse (ADN)

CERTIFICATE

Area of Emphasis: Dental Assistant Technology
(Program being eliminated -- NO NEW STUDENTS
ARE BEING ACCEPTED)

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):

<i>Areas of Study Emphasis Available</i>	<i>Degrees/Certificates</i>	<i>Details</i>
Dental Assistant Technology	Certificate	p. 121
Nursing (ADN)	AS -- Nursing	pp. 121-122
Nursing (BSN)	BSN	pp. 122-123
Radiologic Technology	AAS	pp. 124-125

DENTAL ASSISTANT TECHNOLOGY

(Certificate)

This program is being eliminated and NO NEW STUDENTS ARE BEING ACCEPTED. Students currently enrolled will have until May, 1991 to complete all requirements.

NURSING (ADN)

(Associate of 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 790 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.

Progression: Students are required to have a 2.0 grade point on all required general education and nursing courses for progression in the program.

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:* (20 hrs. plus 4 hrs. physical education)

ENGW 111,112 English Composition	(6)
BIOL 141,141L Human Anatomy	(5)
PSYC 121 or 122 General Psychology	(3)
PSYC 233 Human Growth and Development	(3)
*Social Sciences	(3)

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:* (12 hrs.)

HMEC 211	(3)
BIOL 241	(4)
BIOL 250,250L	(5)

SUGGESTED COURSE SEQUENCING:

		First Year:			
		<i>Sem</i>	<i>Con</i>		
<i>Fall Semester</i>	<i>Hrs</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Sem</i>	<i>Con</i>
				<i>Hrs</i>	<i>Hrs</i>
BIOL 141,141L Human Anatomy	5	107	BIOL 250,250L Microbiology	5	107
HMEC 211 Nutrition	3	47	NURS 123,123L Nurs Concepts II	9	257
NURS 113,113L Nurs Concepts I	9	197	PSYC 233 Hum Growth/Dev.	3	47
PE Activities	2	48	PE Activities	2	48
	19	399		19	459

		Second Year:			
		<i>Sem</i>	<i>Con</i>		
<i>Fall Semester</i>	<i>Hrs</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Sem</i>	<i>Con</i>
				<i>Hrs</i>	<i>Hrs</i>
ENGW 111 English Composition	3	47	ENGW 112 English Composition	3	47
PSYC 121 or 122 General Psychology 3	47	47	NURS 230,230L Nurs Concep IV	10	302
BIOL 241 Pathophysiology	4	62	NURS 273 Issues in Nursing	2	32
NURS 210,210L Nurs Concepts III	10	302	*Social Science	3	47
	20	458		18	428

*See pp. 37-39 for listing of approved general education courses.

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 a composite ACT score of 19 or above, a composite Enhanced ACT score 21 or above, or combined SAT score of 810 or above, 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 courses must be completed or in progress before a student can be admitted to the program. An admissions committee selects students from applicants who best meet requirements. All admission materials must be on file in the deans office March 1 for consideration the following fall semester. All nursing courses must be completed in sequence. A cumulative grade point average of 2.00 and a grade of 2.00 (C) or higher in all prerequisite, general education and nursing courses must be maintained.

Progression requirements: A cumulative grade point average of 2.00 with no grade below 2.00 ("C") in any course in the (BSN) curriculum for progression in the program. Faculty members of a program may withdraw a student due to unsafe clinical practice or behavior jeopardizing professional practice.

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: (53 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 336L | |
| | | (RN only) | (1) |

SUGGESTED COURSE SEQUENCING:

First Year:			
<i>Full Semester</i>	<i>Sem Hrs</i>	<i>Spring Semester</i>	<i>Sem Hrs</i>
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:			
<i>Fall Semester</i>		<i>Spring Semester</i>	
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:			
<i>Fall Semester</i>		<i>Spring Semester</i>	
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
Fourth Year:			
<i>Fall Semester</i>		<i>Spring Semester</i>	
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 Process 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. 37-39 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 October 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, algebra, geometry, or their college equivalent. 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 or required general education course 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 086, 087, 090, 111, 112, 115, 121 English Composition	(6)
Social Science or Psychology**	(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 Human Anat/Phys. Lab	(5)
CSCI 100 Computers in Our Society	(3)

SUGGESTED COURSE SEQUENCING:

		First Year:			
		Sem	Con		
<i>Spring Semester</i>		Hrs	Hrs		
ENGW 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			
<i>Fall Semester</i>		Sem	Con	<i>Spring Semester</i>	
		Hrs	Hrs		Sem
BIOL 141,141L Humn Anat/Phys. L.	5	107		ENGW English	3
RADT 121,121L Rad Tech I, Lab	3	62		Social Science or Psychology	3
RADT 122,122L Rad Prin I, Lab	3	62		RADT 131,131L Rad Tech II, Lab	3
RADT 123 Clinical Exp I	4	180		RADT 132,132L Rad Prin II, Lab	3
RADT 125 Radiologic Science I	2	32		RADT 133 Clinical Experience II	4
PHYE PE Activity	1	24		RADT 135 Radiologic Science II	2
	18	467		PE Activity	1
				19	454

Second Year:

Summer Session

RADT 243 Clinical Experience III . . .10 480

Fall Semester

RADT 251 Radiologic Technique III . .3 47

RADT 253 Clinical Experience IV . .10 640

13 687

Spring Semester

RADT 261 Radiologic Technique VI . .3 47

RADT 263 Clinical Experience V . . .10 640

13 687

*For spring sequence must be taken summer or fall

*See pp. 37-39 for listing of approved AAS general education courses.

SCHOOL OF SOCIAL AND BEHAVIORAL SCIENCES

Donald A. MacKendrick, Dean

Departments
and
Faculties

Behavioral Sciences

V. Beemer, C. Buys, J. Dorris,
K. Ford, T. Graves, M. Heinrich,
W. Meeker, G. Starbuck, H. Tiemann (Chair)

Physical Education and Recreation

R. Cortese, S. Kirkham, W. Kralicek,
J. Perrin, K. Perrin, A. Sanders,
D. Schakel, C. Shepherd, T. Swanson,
E. Tooker, B. Wiehe, S. Yeager (Chair)

Social Sciences

D. Arosteguy, J. Chambers, L. Chere,
D. MacKendrick, L. Morton, I. Nicholson,
J. Peer, P. Reddin (Chair), 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

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

BACHELOR OF ARTS IN SELECTED STUDIES

Areas of Emphasis: Individually designed curricula.
 Curricula leading to teacher certification through the
 Mesa/Metropolitan State College Education consortium.
 (See Consortium Programs section of this catalog, p. 10.)

ASSOCIATE OF ARTS

Areas of Emphasis: Anthropology
 Criminal Justice
 Early Childhood Education
 History
 Physical Education
 Political Science
 Psychology

CERTIFICATE

Area of Emphasis: Early Childhood Education

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):

<i>Areas of Study Emphasis Available</i>	<i>Degrees/Certificates</i>	<i>Details</i>
Anthropology	AA	p. 128
Career Counseling and Guidance	BA	pp. 128-129
Counseling Psychology	BA	pp. 129-130
Criminal Justice	AA, BA	pp. 130-132
Early Childhood Education	AA, Certificate	pp. 132-133
Economics	BA	p. 134
Education	Teacher Certification	p. 135
History	AA, BA	pp. 135-136
Human Services	BA	p. 137
Municipal Parks, Recreation Mgmt.	BA	p. 138
Outdoor Recreation	BA	p. 139
Physical Education	AA, Teacher Certification	p. 140
Political Science	AA, BA	pp. 141-142
Psychology	AA, BA	pp. 142-144
Selected Studies	BA	pp. 144-145
Social Science (General)	BA	p. 146
Sociology	BA	p. 147

ANTHROPOLOGY

(Associate in Arts)

DEGREE REQUIREMENTS:

1. *General Education* (30 hrs. plus 4 hrs. physical education)

ENGW 111 and 112	(6)
*Humanities/Literature	(6)
*Social Sciences	(6)
*Math/Physical Science	(6)
*Psychology or Biology	(6)
2. *Required Core Courses:* (12 hrs.)
 Twelve (12) semester hours from the following:

ANTH 101	(3)	ANTH 230	(3)
ANTH 102	(3)	ANTH 232	(3)
ANTH 222	(3)	ANTH 261	(3)
3. *Electives:* (18 hrs.)

SUGGESTED COURSE SEQUENCING:

		First Year:	
		<i>Sem</i>	<i>Sem</i>
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
ENGW 111 English Composition	3	ENGW 112 English Composition	3
*Social Science	3	*Social Science	3
ANTH 101 Physical Anthropology	3	ANTH 102 Cultural Anthropology	3
*Psychology/Biology	3	*Psychology/Biology	3
Elective	3	Elective	3
PE Activity	1	PE Activity	1

		Second Year:	
		<i>Sem</i>	<i>Sem</i>
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
Anthropology	3	Anthropology	3
*Math/Physical Science	3	*Math/Physical Science	3
*Humanities/Literature	3	*Humanities/Literature	3
Electives	6	Electives	6
PE Activity	1	PE Activity	1

*See pp. 37-39 for listing of approved general education courses.

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 221 | (3) | PCGU 497 | (4) |
| or EDU 360 (Metro) | (3) | and/or PCGU 499 | (4) |
3. *Electives:* (open, 8-9; restricted, 15)

SUGGESTED COURSE SEQUENCING (first two of the four years)

First Year:			
	Sem		Sem
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
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	*Lit/Philosophy/Foreign Language	3
		PE Activity	1
Second Year:			
<i>Fall Semester</i>		<i>Spring Semester</i>	
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. 37-39 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:

- 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)
 - *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 427 | |
| + PCGU 320 | | and/or PCGU 499 | (4-8) |
| and/or 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:	
		<i>Sem</i>	<i>Sem</i>
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
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:	
<i>Fall Semester</i>		<i>Spring Semester</i>	
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. 37-39 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

(Associate of Arts)

DEGREE REQUIREMENTS:

1. *General Education:* (30 hrs. plus 4 hrs. physical education)

ENGW 111 and 112	(6)
PSYC 121 and 122	(6)
SPCH 101 or 102	(3)
POLS 101 and 102	(6)
CSCI 100	(3)
*Humanities/Fine Arts/Literature	(3)
*Computer Science/Math/Physical Science	(3)
Physical Education	(4)

2. *Required Emphasis Courses:* (21 hrs.)
- | | | | |
|----------|-----|----------|-----|
| CSJU 111 | (3) | POLS 256 | (3) |
| CSJU 112 | (3) | SOCO 260 | (3) |
| CSJU 222 | (3) | SOCO 264 | (3) |
| CSJU 251 | (3) | | |
3. *Electives:* (9 hrs.)

SUGGESTED COURSE SEQUENCING:

		First Year:	
		<i>Sem</i>	<i>Sem</i>
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
ENGW 111 English Composition	3	ENGW 112 English Composition	3
CSJU 111 Intro to Admin of Justice	3	CSJU 112 Police and Society	3
POLS 101 American Government	3	POLS 102 American Government	3
PSYC 121 General Psychology	3	PSYC 122 General Psychology	3
CSCI 100 Computers/Society	3	SPCH 101 Interpersonal Communication	
PE Activity	2	or SPCH 102 Speechmaking	3
		PE Activity	2

		Second Year:	
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
*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. 37-39 for listing of approved general education courses.

CRIMINAL JUSTICE

(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) |
| 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* (57 hrs.)

+ CSJU 111	(3)	+ POLS 312	(3)
+ CSJU 112	(3)	POLS 420	(3)
+ CSJU 222	(3)	+ SOCO 260	(3)
+ CSJU 251	(3)	+ SOCO 264	(3)
+ CSJU 304	(3)	+ SOCO 330	(3)
CSJU 401	(3)	+ SOCI 310	(3)
PCGU 420	(3)	PSYC 320	(3)
+ POLS 310	(3)	PSYC 330	(3)
+ Additional upper division behavioral science	(6)	PSYC 420	(3)

3. *Electives*: (open, 16 hrs.; restricted, 6 hrs.)

SUGGESTED COURSE SEQUENCING:

See Associate of Arts curriculum, above, for course sequencing for the first two years.

*See pp. 37-39 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

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*: (30 hrs. plus 4 hrs. physical education)

ENGW 111 and 112	(6)
PSYC 121 and 233	(6)
Computer Science, Math, or Physical Science	(6)
Social Science, including SOCO 144	(6)
Literature/Humanities, including SPCH 102	(6)
Physical Education	(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)	THEA 211 or PHYA 256	(2)
EDEC 252	(5)	THEA 213	(2)
EDEC 260	(3)		

3. *Elective*: (1 hr.)

4. First Aid to be taken through Red Cross.

SUGGESTED COURSE SEQUENCING:

		First Year:	
		<i>Sem</i>	<i>Sem</i>
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
ENGW 111 English Composition	3	ENGW 112 English Composition	3
PSYC 121 General Psychology	3	PSYC 233 Human Growth/Development	3
EDEC 110 Infant/Toddler Curr	2	EDEC 111 Curr. Early Childhood Edu.	3
EDEC 121 Intro/Early Childhood	2	ARTE 210 Early Childhood Art	2
THEA 213 Creative Play Act/Drama	2	THEA 211 Creative Play Act/Dance	2
MUSA 241 Music Methods	2	Elective	1
PE Activity	2	PE Activity	2

		Second Year:	
		<i>Sem</i>	<i>Sem</i>
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
ENLI 240 Children's Literature	3	HMEC 211 Nutrition	3
EDEC 252 Student Teaching	5	EDEC 260 Child-Care Center Mgmt.	3
SOCO 144 Marriage and the Family	3	SPCH 102 Speechmaking	3
Literature/Humanities	3	Social Science	3
Computer Sci/Math/Physical Sci	3	Computer Sci/Math/Physical Sci	3

EARLY CHILDHOOD EDUCATION

(Certificate)

Certain courses in early childhood education are required for state licensing. These are included in the curriculum which follows:

CERTIFICATE REQUIREMENTS: (Minimum of 29 hours required)

PSYC 121	(3)	EDEC 252	(5)
SOCO 144	(3)	EDEC 260	(3)
*PHYA 265	(3)	HMEC 211	(3)
EDEC 111	(3)	HMEC 238	(3)

Two courses from:

ARTE 110; EDEC 110, EDEC 121; ENLI 240;
HMEC 141; MUSA 241; THEA 213 (4-6)

SUGGESTED COURSE SEQUENCING:

		<i>Sem</i>	<i>Con</i>			<i>Sem</i>	<i>Con</i>
		<i>Hrs</i>	<i>Hrs</i>	<i>Spring Semester</i>			<i>Hrs</i>
<i>Fall Semester</i>	<i>Hrs</i>				<i>Hrs</i>	<i>Hrs</i>	
PSYC 121 General Psychology	3	47	EDEC 260 Child-Care Cen. Mgmt	3	47		
HMEC 211 Nutrition	3	47	EDEC 252 Student Teaching	5	240		
HMEC 238 Child Development	3	47	Required Electives	4-6	64-96		
EDEC 111 Curriculum in Early Childhood Education	3	47					
SOCO 144 Marriage & the Family	3	47					
#PHYA 265 Stan. First Aid & CPR	3	47					

#Or current Red Cross First Aid Card

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)
*Humanities/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:			
<i>Fall Semester</i>	<i>Sem</i>	<i>Spring Semester</i>	<i>Sem</i>
<i>Hrs</i>	<i>Hrs</i>	<i>Hrs</i>	<i>Hrs</i>
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	*Humanities/Fine Arts	3
*Social Science	3	*Social Science	3
PE Activity	2	PE Activity	2
Second Year:			
<i>Fall Semester</i>	<i>Sem</i>	<i>Spring Semester</i>	<i>Sem</i>
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. 38-39 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

EDUCATION

Teacher certification programs at both elementary and secondary levels are available at Mesa State College through an agreement with Metropolitan State College. Details of these programs may be obtained from the Dean, School of Social and Behavioral Sciences, Lowell Henry Hall 240 or from the Mesa/Metro Education Consortium, Lowell Henry Hall, Room 214.

HISTORY

(Associate of Arts)

DEGREE REQUIREMENTS:

1. *General Education:* (30 hrs. plus 4 hrs. physical education)
 - ENGW 111 and 112 (6)
 - *ENLI/Humanities/Fine Arts (6)
 - *Social Sciences (6)
 - *CSCI/MATH/Physical Science (6)
 - *Psychology/Biology (6)
 - Physical Education (4)
2. *Required Emphasis Courses:* (12 hrs.)
 Select 12 hours from:

HIST 101	(3)	HIST 132	(3)
HIST 102	(3)	HIST 136	(3)
HIST 120	(3)	HIST 137	(2)
HIST 131	(3)		
3. *Electives:* (18 hrs.)

SUGGESTED COURSE SEQUENCING:

		First Year:			
		Sem			Sem
<i>Fall Semester</i>		<i>Hrs</i>	<i>Spring Semester</i>		<i>Hrs</i>
ENGW 111 English Composition	.....	3	ENGW 112 English Composition	.....	3
*Literature/Humanities/Fine Arts	.....	3	*Literature/Humanities/Fine Arts	.....	3
*Social Sciences	.....	3	*Social Sciences	.....	3
History	.....	3	History	.....	3
Elective	.....	3	Elective	.....	3
PE Activity	.....	2	PE Activity	.....	2

		Second Year:			
<i>Fall Semester</i>		<i>Spring Semester</i>			
*Comp Sci/Math/Physical Science	3	*Comp Sci/Math/Physical Science	.....	3
*Psychology/Biology	3	*Psychology/Biology	.....	3
History	3	History	.....	3
Electives	6	Electives	.....	6

*See pp. 37-39 for listing of approved general education 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)
*Humanities/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:* (52 hrs.)

+ ANTH 101 and 102	(6)	+ HIST 131 and 132	(6)
+ ECON 201 and 202	(6)	HIST 404	(1)
+ 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:* (26-28 hrs.)

SUGGESTED COURSE SEQUENCING:

First Year:				
		<i>Sem</i>		
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>	
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	*Humanities/Fine Arts	3	
Elective	3	*Comp Sci/Math/Physical Science	3	
PE Activity	2	PE Activity	2	
Second Year:				
<i>Fall Semester</i>		<i>Spring Semester</i>		
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. 37-39 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)
 - *Humanities/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:	
		<i>Sem</i>	<i>Sem</i>
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
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	*Biology	3
Elective	3	Elective	3
PE Activity	2	PE Activity	2

		Second Year:	
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
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		ECON 202 Prin of Microeconomics or	
HIST 101 Western Civilizations or		HIST 102 Western Civilizations or	
HIST 131 U.S. History or		HIST 132 U.S. History or	
POLS 101 American Government	3	POLS American Government	3
*Literature/Philosophy/F.Lang	3	*Social Science	3
*Biology	3	Elective	3

*See pp. 37-39 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)
*Humanities/Fine Arts		(3)
*ENLI/PHIL/Foreign Language		(3)
*Social Science		(8-9)
Physical Education		(4)

2. *Required Core and Emphasis Courses:* (55 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 499	(12)
RECR 390	(3)		

3. *Electives:* (16-19 hrs.)

SUGGESTED COURSE SEQUENCING:

First Year:			
	<i>Sem</i>		<i>Sem</i>
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
ENGW 111 English Composition	3	ENGW 112 English Composition	3
*Psychology/Biology	3	*Psychology/Biology	3
POLS 101 American Government	3	POLS 102 American Government	3
*Literature	3	*Humanities/Fine Arts	3
*Comp Sci/Math/Physical Science	3	*Comp Sci/Math/Physical Science	3
PE Activity	2	PE Activity	2
Second Year:			
<i>Fall Semester</i>		<i>Spring Semester</i>	
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. 37-39 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)
 - *Humanities/Fine Arts (3)
 - *ENLI/PHIL/Foreign Language (3)
 - *Social Sciences (8-9)
 - Physical Education (4)

2. *Required Core and Emphasis Courses:* (58-59 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 499	(12)
RECR 390	(3)	BIOL 113	(3)
RECR 425	(3)	PHYA 265	(3)
+ RECR 480	(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, PIYE 141, PHYE 143,
 PHYA 211, PHYA 250, RECR 396.

3. *Electives:* (19-23 hrs.)

SUGGESTED COURSE SEQUENCING:

		First Year:	
		Sem	Sem
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
ENGW 111 English Composition	3	ENGW 112 English Composition	3
*Psychology/Biology	3	*Psychology/Biology	3
*Social Science	3	*Social Science	3
*Literature	3	*Humanities/Fine Arts	3
*Comp Sci/Math/Physical Sci	3	*Comp Sci/Math/Physical Science	3
PE Activity	2	PE Activity	2

		Second Year:	
		<i>Fall Semester</i>	<i>Spring Semester</i>
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. 37-39 for listing of approved general education courses.

+Core courses

PHYSICAL EDUCATION

(Associate in Arts)

DEGREE REQUIREMENTS:

1. *General Education*: (30 hrs. plus 4 hrs. physical education)
 - ENGW 111 and 112 (6)
 - *Humanities/Literature (6)
 - *Social Sciences (6)
 - *MATH/Physical Science (6)
 - *Psychology/Biology (6)
2. *Required Core Courses*: (12 hrs.)

Selected from:

 - PHYA 200 (1)
 - PHYA 233 (2)
 - Any Methods course (PHYA 211-232) (1-2)
 - Any Sports Officiating course (PHYA 240-246) (1)
 - PHYA 234 (2) PHYA 265 (3)
 - PHYA 250 (2) PHYA 276 (1)
 - PHYA 251 (2) PHYA 277 (1)
 - PHYA 256 (3) PHYA 280 (1)
 - PHYA 257 (1) PHYA 281 (1)
 - PHYA 260 (3) PHYA 297 (1)
3. *Electives*: (18 hrs.)

SUGGESTED COURSE SEQUENCING:

		First Year:	
		Sem	Sem
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
ENGW 111 English Composition	3	ENGW 112 English Composition	3
*Social Science	3	*Social Science	3
*Psychology/Biology	3	*Psychology/Biology	3
PHYA Courses	2	PHYA Courses	2
Elective	3	Elective	3
PE Activity	1	PE Activity	1

		Second Year:	
		<i>Fall Semester</i>	<i>Spring Semester</i>
<i>Fall Semester</i>	<i>Hrs</i>	<i>Fall Semester</i>	<i>Spring Semester</i>
*Math/Physical Science	3	*Math/Physical Science	3
*Humanities/Literature	3	*Humanities/Literature	3
PHYA Courses	4	PHYA Courses	4
Electives	6	Electives	6
PE Activity	1	PE Activity	1

*See pp. 37-39 for listing of approved general education courses.

PHYSICAL EDUCATION

(Teacher Certification, Secondary Level)

This program is available by pursuing a Bachelor of Arts program in Selected Studies. Consult with the Department of Physical Education and Recreation for details.

POLITICAL SCIENCE

(Associate of Arts)

DEGREE REQUIREMENTS:

1. *General Education:* (30 hrs. plus 4 hrs. physical education)
 - ENGW 111 and 112 (6)
 - *Literature and/or Humanities (6)
 - *Social Science (6)
 - *Physical Science and/or Math (6)
 - *Psychology and/or Biology (6)
 - Physical Education (4)
2. *Required Emphasis Courses:* (12 hrs.)

Twelve (12) hours selected from:

 - POLS 101, 102, 261
 - HIST 131, 132
3. *Electives:* (18 hrs.)

SUGGESTED COURSE SEQUENCING:

		First Year:			
		Sem		Sem	
<i>Fall Semester</i>	<i>Hrs</i>		<i>Spring Semester</i>	<i>Hrs</i>	
ENGW 111 English Composition	3		ENGW 112 English Composition	3	
POLS 101 American Government	3		POLS 102 American Government	3	
*Psychology or Biology	3		*Psychology or Biology	3	
*Social Science	3		*Social Science	3	
Elective	3		Elective	3	
PE Activity	2		PE Activity	2	

		Second Year:			
<i>Fall Semester</i>			<i>Spring Semester</i>		
*Phys Sci. or Math	3		*Physical Science or Math	3	
*ENLI or Humanities	3		*Literature or Humanities	3	
POLS Emphasis Course	3		POLS Emphasis Course	3	
Elective	3		Elective	3	

*Sec pp. 37-39 for listing of approved general education courses.

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:* (55 hrs.)

+ HIST 131 and 132	(6)
+ POLS 101 and 102	(6)
+ POLS 256	(3)
+ POLS 261	(3)
POLS 490	(1)
+ 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), 420 (3),	
422 (3)	
SOCO 300 (3)	
POLS 399A, 399B (3 hours only).	

3. *Electives:* (23-25 hrs.)

SUGGESTED COURSE SEQUENCING:

		First Year:			
		Sem		Sem	
<i>Fall Semester</i>	<i>Hrs</i>		<i>Spring Semester</i>		<i>Hrs</i>
ENGW 111 English Composition	3		ENGW 112 English Composition	3	
POLS 101 American Government	3		POLS 102 American Government	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:					
<i>Fall Semester</i>			<i>Spring Semester</i>		
POLS 256 State/Local Government	3		ANTH 102 Cultural Anthropology	3	
POLS 261 Comparative Governments	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. 37-39 for listing of approved general education courses.

+ Core Courses

PSYCHOLOGY

(Associate of Arts)

DEGREE REQUIREMENTS:

1. *General Education:* (30 hrs. plus 4 hrs. physical education)

ENGW 111 and 112	(6)
*ENLI and/or Humanities	(6)
*Social Sciences	(6)
*MATH or Physical Science	(6)
PSYC 121 and 122	(6)
Physical Education	(4)

2. *Required Emphasis Courses:* (12 hrs.)
 12 Hours selected from:
 PSYC 200 (3), 210 (3), 220 (3)
 233 (3), 254 (3)
3. *Electives:* (18 hrs.)

SUGGESTED COURSE SEQUENCING:

		First Year:			
		<i>Sem</i>		<i>Sem</i>	
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>	<i>Fall Semester</i>	<i>Hrs</i>
ENGW 111 English Composition	3	ENGW 112 English Composition	3		
PSYC 121 General Psychology	3	PSYC 122 General Psychology	3		
*Social Science	3	*Social Science	3		
*Math/Physical Science	3	*Math/Physical Science	3		
Elective	3	Elective	3		
PE Activity	2	PE Activity	2		

		Second Year:			
		<i>Spring Semester</i>			
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>	<i>Fall Semester</i>	<i>Hrs</i>
*Literature/Humanities	3	*Literature/Humanities	3		
*PSYC Emphasis Courses	6	*PSYC Emphasis Courses	6		
Electives	6	Electives	6		

*See pp. 37-39 for listing of approved general education 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)
*Humanities/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:	
		<i>Sem</i>	<i>Sem</i>
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
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	*Humanities/Fine Arts	3
Elective	3	*Social Science	3
PE Activity	2	PE Activity	2

		Second Year:	
		<i>Sem</i>	<i>Sem</i>
<i>Fall Semester</i>	<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>
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	
ECON 201 Prin/Macroeconomics or		HIST 102 Western Civilizations or	
HIST 101 Western Civilization or		HIST 132 U.S. History or	
HIST 131 U.S. History or		POLS 102 American Government	3
POLS 101 American Government	3	*Social Science	3
*Social Science	3	Elective	3

*See pp. 37-39 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)

This program leads to teacher certification in some areas or allows students to design a curriculum suited to individual needs, background, interests, and goals.

Early consultation with the program director is essential because a formal declaration of major is required and a curricular plan must be filed before program admission.

Requirements:

Minimum Semester Hours Required	(120, 40 of which must be upper division, plus 4 hrs. Physical Education)
General Education	(39-42)
Major	(72)
Electives	varies

Detailed Major Requirements:

The degree requires the completion of 72 credit hours in two or three subject areas (academic departments). The subject areas of the major shall be designated primary and secondary areas. The faculties of the respective academic departments shall have the prerogative of designating acceptable primary and secondary areas and the courses which shall compose the Selected Studies Major.

A student may elect a two or three area major as follows:

- Option I: A two area major consisting of two primary areas of at least 36 semester hours each. The two areas cannot be taught in the same academic department.
- Option II: A two area major consisting of a primary area of at least 48 semester hours and a secondary area consisting of at least 24 semester hours. The two areas cannot be taught in the same academic department.
- Option III: A three area major consisting of a primary area of at least 36 semester hours and two secondary areas consisting of at least 18 semester hours each. Each area must be taught in a different academic department.

Students may choose a vocational/technical discipline as a secondary area under Option II, or as a secondary area under Option III. No more than 30 credit hours from one vocational/technical discipline and no more than 40 from two vocational/technical disciplines may be counted toward the degree.

Additionally, students seeking this degree must file a formal application for admission to the program with the Dean, School of Social and Behavioral Sciences. 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 statement which includes:
 - a. A description of academic and career goals.
 - b. A definition and description of a clear, unifying theme in the major program.
 - c. A statement of reasons for choosing particular disciplines included in the proposed major program.
 - d. Such other information the student may wish to include in support of the application.
4. Have the application statement reviewed by the Director of Selected Studies and the Chairs of the affected departments. Departmental 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 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 affected departmental Chairs.
6. File the approved preliminary program proposal with the Director of Selected Studies.

Of the 72 semester hours composing the major, at least 40 semester hours must be at the upper division level. (One half of all credits in the primary areas and one half of all credits in each secondary area must be at the upper division level, unless the secondary area is in a vocational/technical discipline).

All program areas must include courses which define the philosophy, intellectual tradition and/or methodology of the academic disciplines comprising the primary and secondary areas.

All students entering the program must complete 48 semester hours after completion of the application process. At least 24 of these credits must be at the upper division level. Students must have earned at least a 2.50 GPA in coursework completed prior to admission to the program.

Individual academic departments may establish additional requirements for subject areas in their department.

SOCIAL SCIENCE (GENERAL)

(Bachelor of Arts in Social and Behavioral Sciences)

DEGREE REQUIREMENTS:1. *General Education:* (39-42 hrs. plus 4 hrs. physical education)

ENGW 111 and 112	(6)
*Biology and Psychology	(8-9)
*Literature	(3)
*Humanities/Fine Arts	(3)
*ENLI/PHIL/Foreign Language	(3)
*CSCI/MATH/Physical Science/STAT	(8-9)
*Social 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, 102	(6)
+ GEOG 103	(3)	+ Three additional hours of	
+ HIST 101 and 102 or		behavioral science	(3)
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:	
		Sem	Sem
Fall Semester	Hrs	Spring Semester	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 102 American Government	3
*Literature	3	*Humanities/Fine Arts	3
*Comp Sci/Math/Physical Science		*Literature/Philosophy/F. Language	3
Statistics	3	PE Activity	2
PE Activity	2		

Second Year:

		Spring Semester	
Fall Semester	Hrs	Hrs	Hrs
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 102 Western Civilizations or	
HIST 131 U.S. History	3	HIST 132 U.S. History	3
ANTH 101 Physical Anthropology	3	ANTH 102 Cultural Anthropology	3
*Comp Sci/Math/Physical Science/		*Comp Sci/Math/Physical Science/	
Statistics	3	Statistics	3

*See pp. 37-39 for listing of approved general education courses.

+ Core Courses

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) + A social science core series (6)
 - + SOCO 400 (3) + Six additional hours of social science (6)
 - + SOCO 410 (3) + Six additional hours of behavioral science (6)
 - + SOCO 260,264 (6)

Eighteen (18) hours selected from:
 IISER 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:			
		Sem		Sem	
<i>Fall Semester</i>		<i>Hrs</i>	<i>Spring Semester</i>	<i>Hrs</i>	
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		
Elective	3	Statistics	.....	3
PE Activity	2	Elective	.....	3
			PE Activity	.....	2
Second Year:					
<i>Fall Semester</i>			<i>Spring Semester</i>		
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			ECON 202 Prin/Microeconomics or		
IIST 101 Western Civilizations or			IIST 102 Western Civilizations or		
IIST 131 U.S. History or			IIST 132 U.S. History or		
POLS 101 American Government	3	POLS 102 American Government	.....	3
Elective	3	Elective	.....	3

*See pp. 37-39 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

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 01-099 are preparatory in nature, not intended for transfer purposes and will not usually fulfill degree requirements.

THE DESIGNATION §denotes a course that will fulfill general education (GE) requirements.

Mesa State College reserves the right to withdraw any program or course which is not justified due to lack of enrollment or availability of instructor. 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.

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 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. (Fall)

- ACCT 321 Intermediate Accounting I** (4)
Development of a foundational understanding of Generally Accepted Accounting Principles and their application to external financial statements. Prerequisite: ACCT 202. (Fall)
- ACCT 322 Intermediate Accounting II** (4)
Continuation of ACCT 321. Prerequisite: ACCT 321. (Spring)
- ACCT 331 Cost Accounting I** (3)
Costs and their relationship to planning, controlling, inventory valuation, and decision making. Prerequisite: ACCT 202. (Fall)
- ACCT 332 Cost Accounting II** (3)
Continuation of ACCT 331. Prerequisite: ACCT 331. (Spring)
- ACCT 395 Independent Study** (1,2)
Individual study beyond the scope of the required curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog). Student must prepare a comprehensive proposal outlining the study and its justification and complete an application at least six weeks prior to the end of the semester preceding the semester in which they wish to take the Independent Study. (Fall/Spring)
- ACCT 396 Topics** (1,2,3)
Material of special interest not considered elsewhere in the curriculum. Subjects vary from year to year. Prerequisites: vary with course material; consent of instructor. (On demand)
- ACCT 401 Governmental Accounting** (3)
Accounting principles as they apply to governmental units and non-profit operations. Prerequisite: ACCT 322 or consent of instructor. (Fall)
- ACCT 402 Advanced Accounting** (5)
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. (Spring)
- 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 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 311,322. (Spring/even numbered years)
- ACCT 441 Income Tax** (5)
For accounting majors. 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 472 Computerized Auditing** (3)
Current professional requirements and auditing standards as they apply to audits of computer-based accounting systems and techniques used to meet the standards. Prerequisite: ACCT 411 and consent of instructor. (Spring)

Agriculture

School of Natural Sciences 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. (Spring)
- AGRM 102 Farm and Ranch Business Management II** (3)
 Utilization of the Lotus 1-2-3 spreadsheet in farm budgeting to maximize profits. (Summer)
- AGRM 103 Farm and Ranch Business Management III** (3)
 Basic principles of agricultural economics, credit, ratio analysis, depreciation, and income tax strategies. (Fall).
- AGRM 104 Farm and Ranch Business Management IV** (3)
 An introduction to agricultural marketing alternatives with emphasis on the futures and options markets. (Spring)
- 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. (Summer)
- AGRM 106 Farm and Ranch Business Management VI** (3)
 The use of financial ratios as indicators in business planning and profitability. (Fall)
- 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. (Spring)
- AGRM 108 Farm and Ranch Business Management VIII** (3)
 Designed to minimize costs and risks through insurance and business expansion. (Summer)
- 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. (Fall)

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 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)

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. (Spring)

§ARTE 115 Art Appreciation (3)

Some of the hows, whys, and whos of painting, sculpture, and functional design in selected periods and places. (Fall)

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 (1)

Prerequisite: ARTE 151 or consent of instructor. (Spring)

ARTE 170 Printmaking (On demand) (1)

§ARTE 190 Water Media (1)

Prerequisite: ARTE 151 or consent of instructor. (Fall)

ARTE 192 Pastels (1)

Prerequisite: ARTE 151 or consent of instructor. (Fall)

ARTE 193 Airbrush (1)

Prerequisite: ARTE 151 or consent of instructor. (Fall/Spring)

§ARTE 151 Basic Drawing (3)

Frechand 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 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/Spring)

- §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** (2)
Chronological study of European painting, sculpture, and architecture from the Italian Renaissance to the beginning of the Modernist Period. (Spring)
- ART PROCESSES AND MEDIA** These courses introduce traditional materials of the visual arts through studio experiences with lectures on theory and history of the media. (Fee charged for some materials.) One hour of lecture and four hours of studio per week.
- | | | |
|--------------|---|-------|
| ARTE 221 | Metalsmithing | (3) |
| | Prerequisite: ARTE 102 or consent of instructor. (On demand) | |
| ARTE 231 | Fibers | (3) |
| | Prerequisite: ARTE 101 or consent of instructor. (On demand) | |
| ARTE 241 | Ceramics, Handbuildings | (3) |
| | Prerequisite: ARTE 102 or consent of instructor. (On demand) | |
| ARTE 242 | Ceramics, Potters' wheel | (3) |
| | Prerequisite: ARTE 241 or consent of instructor. (On demand) | |
| ARTE 271 | Printmaking — Relief and Intaglio | (3) |
| | Prerequisite: ARTE 151 or consent of instructor. (Fall) | |
| ARTE 272 | Printmaking — Lithography | (3) |
| | Prerequisite: ARTE 151 or consent of instructor. (Spring) | |
| ARTE 281 | Sculpture — Modeling and Mold Making | (3) |
| | Prerequisite: ARTE 102 or consent of instructor. (Fall) | |
| ARTE 282 | Sculpture — Foundry | (3) |
| | Prerequisite: ARTE 102 or consent of instructor. (Fall) | |
| ARTE 283 | Sculpture — Carving and Construction | (3) |
| | Prerequisite: ARTE 102 or consent of instructor. (Spring) | |
| ARTE 291,292 | Painting | (3,3) |
| | Prerequisites: ARTE 101, 151, or consent of instructor. (Fall/Spring) | |
| ARTE 293 | Watercolor Painting | (3) |
| | Prerequisites: ARTE 101, 151, or consent of instructor. (On demand) | |
- 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 257 Cartooning** (1)
Fundamentals of exaggeration, caricature, gesture, sequence, technique, and presentation. Two hours of studio per week. Prerequisite: ARTE 151 or permission 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 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)	(3)
ARTE 341	Pottery Production (Fall/Spring)	(3)
ARTE 342	Ceramic Sculpture (On demand)	(3)
ARTE 352	Drawing (Spring)	(3)
ARTE 371, 372	Printmaking (Fall/Spring)	(3,3)
ARTE 381, 382	Sculpture (Fall/Spring)	(3,3)
ARTE 391, 392	Painting (Fall/Spring)	(3,3)

ARTE 395 Independent Study (2)
Individual study beyond the scope of the existing curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog).

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)

ARTE 410 Elementary Art Education Methods (3)
Theory and methods of art education K-6: teaching art to children, lesson planning and materials, and the role of art in education. Two hours of lecture and two hours of laboratory per week. (Fall/Spring)

ARTE 412 Secondary Art Education Methods (3)
Theory, methods, and materials for teaching art in secondary schools. Two hours of lecture and two hours of laboratory per week. (On demand)

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)	(3)
ARTE 441	Glaze Calculation (On demand)	(3)
ARTE 442	Kiln Construction (On demand)	(3)
ARTE 452	Drawing (Spring)	(3)
ARTE 471, 472	Printmaking (Fall/Spring)	(3,3)
ARTE 481, 482	Sculpture (Fall/Spring)	(3,3)
ARTE 491, 492	Painting (Fall/Spring)	(3,3)

ARTE 455 Visual Art Workshop (1)
Advanced study of a selected art medium. Thirty hours of studio work. Prerequisite: permission of instructor. (Sturner, on demand)

ARTE 494 Seminar (2)
Topics related to art criticism, history, and aesthetics. Prerequisite: senior standing. (Fall)

ARTE 495 Independent Study (2)
Individual study beyond the scope of the existing curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog).

Auto Body and Fender Repair

School of Industry and Technology

AUBF 100 Applied Mathematics (2)
Brief review of arithmetic and shop mathematics needed to handle the mathematical aspects of auto body repair. Three hours arranged per week. Prerequisite: MATH 105 or equivalent. (Fall/Spring)

AUBF 108 Introduction to Auto Body Repair (4)
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. Prerequisite: consent of the instructor. (Fall)

- AUBF 109 Auto Body Repair and Preparation** (4)
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. Prerequisite: AUBF 108. (Fall)
- AUBF 118 Introduction to Painting/Preparation** (4)
Student is provided with training in the use of paint spraying equipment, and auto body panel paint preparation, such as 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. Prerequisite: consent of instructor. (Spring)
- AUBF 119 Complete Auto Painting** (4)
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. Prerequisite: AUBF 118. (Spring)
- AUBF 130 Auto Reconditioning** (3)
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. Ten hours per week. (Spring)
- AUBF 141 Auto Body Suspension and Aligning** (2)
Automotive suspension systems including the theory, functions and identification of parts and components. Emphasis will be placed on diagnosis and analysis of actual suspension and alignment problems. Repair and replacement of appropriate parts and aligning both front and rear end systems is included as well as application to body shop responsibilities. Four hours per week. Prerequisites: Auto Body major and consent of instructor. (Spring)
- AUBF 150 Auto Body Welding** (3)
Basic oxy-fuel welding, cutting and brazing, stick electrode welding and inert gas wire feed welding as required in auto body repair. Emphasis will be on techniques involved in welding thin gauge and modern metals. Prerequisites: Auto Body major and consent of instructor. Four hours per week. (Fall/Spring)
- AUBF 200 Panel and Spot Painting** (6)
Paint composition, refinishing products and their correct usage, color matching, and procedures to be used in making lacquer or acrylic spot repairs. Ten hours per week. (Fall)
- AUBF 210 Frame Repair** (4)
Inspection, measurement, and repair methods used to repair unitized and conventional frames. Six hours 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 230 Auto Body Repair and Refinishing III** (6)
Continuation of shop learning practices and severe collision repair procedures. Emphasis on metal work and spot painting with a concentration of shop and learning experiences in areas in which students wish to specialize. Prerequisite: AUBF 120 or consent of instructor. Ten hours per week. (Fall/Spring)
- AUBF 240 Auto Body Repair and Refinishing IV** (8)
Continuation of AUBF 230. Prerequisite: AUBF 230 or consent of instructor. Fifteen hours per week. (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)
Individual study beyond the scope of the required curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog). Students must enter into an agreement for specialized training prior to registration. Hours vary. (On demand)
- AUBF 296 Topics** (1,2)
Material of special interest not considered elsewhere in the curriculum. Subjects vary from year to year. Prerequisites: vary with course material; consent of instructor. Hours vary. (On demand)

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. (Spring)
- BIOL 315 Epidemiology** (3)
 Characteristic patterns of communicable disease occurrence as related to individuals, geographic location, and time; factors affecting disease occurrence, the nature of vital statistics, sampling procedures, and study design. An independent project is required. (Alternate Fall)
- BIOL 320 Plant Systematics** (3)
 Systematic botany encompassing principles of classification, nomenclature, and evaluation of current classifications of angiosperms. 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** (1,2)
Individual study beyond the scope of the published curriculum. See index for "Independent Study" under General Academic Regulations section of this catalog.
- BIOL 396 Special Topics in Biology** (1,2,3)
BIOL 396L Special Topics in Biology Laboratory (1,2)
Advanced or specialized study for qualified undergraduates in various areas of biology not covered in regular classes. Offered on an irregular basis; may be taken twice with different topics. Combination of lecture and laboratory classes not to exceed three credit hours. Specific topic is identified on transcript. Distribution of credit and work between lectures and laboratory varies with topic. Prerequisite: consent of instructor. (On demand)
- 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 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 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 filing out personal tax returns, exemptions, determining taxable income, adjustments to gross income, itemized deductions, rental income, depreciation, capital gains and losses. Not for accounting majors. (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 396 Topics** (1,2,3)
Varies from year to year, selected from areas of general interest in the business area. Prerequisite: varies with course material and consent of instructor. (On demand)

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. (Fall/Spring)
- 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. Prerequisite: 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)

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. Prerequisite: CISB 102 or equivalent. (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 (1,2)

Individual study beyond the scope of the required curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog). Students must apply for this course through their adviser at least three weeks prior to the end of the semester preceding the semester in which they wish to take Independent Study. (Fall/Spring)

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 management and accounting majors as well as data processing majors. Prerequisites: CISB 102, 103, 105 and MANG 201. (Fall)
- CISB 395 Independent Study (1,2,3)**
Individual study beyond the scope of the required curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog). Student must prepare a comprehensive proposal outlining the study and its justification and complete an application at least six weeks prior to the end of the semester preceding the semester in which they wish to take the Independent Study. (Fall/Spring)
- CISB 396 Topics (1,2,3)**
Material of special interest not considered elsewhere in the curriculum. Subjects vary from year to year. Prerequisites: vary with course material; consent of instructor. (On demand)
- 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)
- Computer Science**
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- School of Natural Sciences and Mathematics
- SCSCI 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)
- SCSCI 111 Computer Science I (3)**
Fundamental topics of computer science including an overview of computer architecture, algorithms, control structure, trees and stacks, and compilation of arithmetic statements. PASCAL language is employed as the programming vehicle. Corequisite: MATH 119 or consent of instructor. (Fall/Spring)
- SCSCI 112 Computer Science II (3)**
Continuation of SCSCI 111, including all constructs of the PASCAL language, data structures, and algorithm design. Finite state machines and their application to the design of lexical analysis are emphasized. Prerequisite: SCSCI 111. (Fall/Spring)
- 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)

- §CSCI 131 FORTRAN Programming** (3)
§CSCI 131L FORTRAN Programming Laboratory (1)
 FORTRAN language emphasizing structured programming. Sub-programs, sequential files, direct access files, and FORTRAN data structures are stressed in programs written. Three lectures and two one-hour laboratories per week. Prerequisite: Math 113 or consent of instructor. (Fall/Spring)
- §CSCI 133 PASCAL Programming** (3)
§CSCI 133L PASCAL Programming Laboratory (1)
 PASCAL and the concepts of structured programming. Includes programming topics and techniques such as character manipulation, arrays, modular programming, searching and sorting techniques, files and records, and data structures. Three lectures and two one-hour laboratories per week. Prerequisite: MATH 113. (Fall/Spring)
- CSCI 135 COBOL Programming** (3)
 See CISB 131. Computer science students normally enroll in CISB 131 but are offered this course upon demand when CISB 131 is not offered. (Fall/Spring)
- CSCI 241 Computer Architecture I** (3)
 Architecture of a representative processor and its assembly language, introduction to hardware description language, register transfers and sequence control, realization of fetch, address, branch and execute cycles, start, stop and reset the computer, interrupt and memory mapped input-output, peripherals and interfacing. Prerequisite: CSCI 112. (Fall)
- CSCI 242 Computer Architecture II** (3)
 Computer classes and description using PMS or ISPS, description of a few commercial computers, computer arithmetic, binary/octal/hexadecimal number system, hardware for arithmetic operations including floating-point type, processor management, memory organization and schemes, input-output management, control unit and microprogramming, multi- and parallel processors. Prerequisite: CSCI 241. (Spring)
- §CSCI 250 Data Structures** (3)
 Information representation, relationships between forms of representations and processing techniques, transformation between storage media, referencing of information as related to the structure of its representation, concepts of arrays, records, files, trees, list and list structure, sorting and search techniques. Prerequisite: CSCI 112. (Fall/Spring)
- CSCI 321 Assembly Language Programming** (3)
 Introduction to assembler, creating and executing assembly language program, organization of machine under study, data definition, addressing techniques, data movement instruction, branching instructions, flag and PSW registers, arithmetic instructions, macros and their implementation, hardware and software interrupts, storing instructions, typical applications. Prerequisite: CSCI 112. (Fall)
- CSCI 330 Programming Languages** (3)
 Algorithmic languages, declarations, storage allocation, subroutines, coroutines, 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 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 373. (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** (1,2)
Individual study beyond the scope of the published curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog).

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 112 ~~Police~~ Police and Society** (3)
The institution of law enforcement in a generic sense encompassing a wide variety of formal social control mechanisms with particular attention to the relationship between major police problems and the cultural context in which they exist. (Spring)
- CSJU 222 ~~Police~~ Police Patrol Operations** (3)
Responsibilities, techniques, and methods of police patrol in the protection of life and property including an examination of reporting systems, communication systems, and law enforcement equipment as well as highway traffic management, accident investigation, crowd control, and disaster operations. (Fall)
- CSJU 251 ~~Law Enforcement Procedures~~ Justice Procedures** (3)
Court cases relative to the procedural rights of the criminally accused and the implications thereof for the criminal justice agent. (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** (1,2)
Individual study beyond the scope of the required curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog). Student must enter into an agreement prior to registration. (On demand)

CSJU 396 Topics**(1,2,3)**

Allows the study and exploration of contemporary issues and topics in the field of Criminal Justice. Prerequisite: consent of instructor. (On demand)

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)

Dental Assistant Technology

School of Nursing and Allied Health

DENT 110 Orientation to Dentistry**(3)**

Overview of the dental profession. Includes history of dentistry, professional, educational, and licensure requirements, and an introduction to clinical skills. Prerequisite: acceptance into the dental assisting program or consent of the instructor.

DENT 112 Dental Science I**(3)**

Head and neck anatomy including oral histology; tooth anatomy; nervous, venous, circulatory, skeletal, respiratory and digestive systems; and medical/dental terminology. Prerequisite: acceptance into the dental assisting program or consent of the instructor.

DENT 113 Radiology I**(2)**

Principles of diagnostic radiation, basic radiation physics and production with an emphasis on radiation safety. Prerequisite: acceptance into the dental assisting program or consent of the instructor.

DENT 118 Preventive Dentistry**(3)**

Basic principles of proper oral hygiene, etiological factors in common oral diseases, and components of a home care program. Nutritional counseling, patient motivation, and behavioral modification is included. Prerequisite: acceptance into the dental assisting program or consent of the instructor.

DENT 120 Dental Science II**(2)**

This course is divided into three modules.

ORAL PATHOLOGY — Common oral manifestations of disease, oral embryology and associated developmental disturbances.

MICROBIOLOGY — Basic principles and control of disease transmission in the dental environment.

PHARMACOLOGY AND EMERGENCY PROCEDURES — Basic knowledge of drugs and anesthetic agents, with emphasis on emergency medications.

Prerequisites: DENT 110 and 112.

DENT 130 Chairside I**(2)****DENT 130L Chairside I Laboratory****(2)**

Dental procedures, identification of armamentarium and processes involved, and proper patient management techniques. Prerequisites: DENT 110, 112, and 118.

DENT 140 Dental Materials I**(2)****DENT 140L Dental Materials I Laboratory****(2)**

Physical, chemical and mechanical properties of dental materials. Includes laboratory experiments and clinical application. Prerequisites: DENT 110, 112, and 118.

DENT 155 Radiology II**(1)****DENT 155L Radiology II Laboratory****(1)**

Advanced study of intraoral and extraoral dental radiography, including film evaluation. Prerequisite: DENT 113.

DENT 160 Dental Office Procedures**(2)****DENT 160L Dental Office Procedures Laboratory****(1)**

Designed to give the student sufficient knowledge to maintain the business aspect of a dental office. Includes basic control procedures, human relations, and practice in marketing techniques. Prerequisites: DENT 110 and 112.

- DENT 190 Clinical Dentistry** (4)
DENT 190L Clinical Dentistry Laboratory (2)
DENT 190E Clinical Dentistry Clinic (7)
 Presents didactic and laboratory instruction in dental specialties. Clinical component provides planned experiences in various clinical settings. Prerequisite: successful completion of all dental assisting courses.

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. Prerequisites: ECON 201, 202, or equivalent, or consent of instructor. (Fall)
- ECON 343 Intermediate Microeconomic Theory** (3)
 Problems of resource scarcity in a market economy. Emphasis is placed on an analysis of resource allocation under different forms of competition. Covers theory of the firm, theories of market structure, efficiency, equity, and the application of public policy. Prerequisites: ECON 201, 202, or equivalent, or consent of instructor. (Spring)
- ECON 395 Independent Study** (1,2)
 Individual study beyond the scope of the required curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog).
- ECON 401 Economic Organization and Public Policy** (3)
 Political economy of economic organization and public policy including analysis of the structure/conduct dimensions of industry and government institutions and their effects on resource allocation, income distribution, and economic performance. Antitrust, regulation, and other policies are treated concurrently. Counts as a management course for BBA candidates. Prerequisites: ECON 201, 202 or equivalent. (Spring)

ECON 410 Public Sector Economics (3)

Political economy of government finance including analysis of the effects of government revenue and expenditure policies on resource allocation, income distribution, and economic performance. Counts as a management course for BBA candidates. Prerequisites: ECON 201, 202, or equivalent. (Fall)

ECON 420 International Economics (3)

International trade theory and policy such as balance of payments analysis, international investment flows, and the position of the dollar in foreign exchange transactions. Prerequisites: ECON 201, 202, or equivalent. (On demand)

ECON 496 Topics (3)

Material of special interest not considered elsewhere in the curriculum. Subjects vary from year to year. Prerequisites: vary with course material; consent of instructor. (Spring)

Education, Early Childhood

School of Social and Behavioral Sciences

EDEC 100 Parent Education and Preschool (1)

Parenting skills in a preschool situation. Enrollment of both parent and child is required. (Fall/Spring)

EDEC 110 Infant and Toddler 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. (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. (Fall)

EDEC 196 Topics (1)

Material of special interest not considered elsewhere in the curriculum. Subjects vary from year to year. Prerequisites: vary with course material; consent of instructor. (On demand)

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. (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. (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

School of Social and Behavioral Sciences

EDUC 221 Introduction to Education (3)

The history of American public education, the school as a social and cultural institution, legal perspectives, school finance and the role of the individual school teacher. Required for secondary teacher certification. (Fall/Spring)

EDUC 222 Introduction to the Classroom (3)

Basic course for the future educator. The student is placed in a local school to observe and take part in the educational process. Prerequisite: EDUC 221. (Fall)

Electric Lineworker

School of Industry and Technology

NOTE: Twenty-five hours 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** (6)
 Installation and operation of protective equipment, transformer hookups, voltage regulation, hot-stick maintenance, troubleshooting, and gloving from the pole. (Spring)
- ELCL 136 Related Fundamentals I** (4)
 Examination of National electric safety code, truck maintenance, equipment operation, material records, electrical test meters, and introduction to transformers. (Fall)
- ELCL 137 Related Fundamentals II** (6)
 Meter safety, connector installation, street lighting, rubber cover up, and public relations. (Spring)
- ELCL 140 Underground Procedure** (5)
 Safety practices, terminology, fault finding, cable locating, switching procedure, installation of terminal devices, splicing, and transformer application. (Spring)
- ELCL 145 Hotline Procedures** (3)
 Two weeks of training by outside specialists covering current hotline maintenance and underground installation methods. Forty hours per week. (Spring)
- ELCL 195 Independent Study** (1,2)
 Individual study beyond the scope of the required curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog). Students must enter into an agreement for specialized training prior to registration. (On demand)
- ELCL 196 Topics** (1,2)
 Material of special interest not considered elsewhere in the curriculum. Subjects vary from year to year. Prerequisites: vary with course material; consent of instructor. (On demand)

Electronics Technology

School of Industry and Technology

NOTE: Enrollment, with instructor approval, may occur at any time 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, four hours laboratory per week; seven and one-half week module. Corequisite: ENGT 101 or MATH 113 or consent of instructor. (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 MSDOS 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 254 Industrial Circuits** (3)
ELCT 254L Industrial Circuits Laboratory (1)
 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 264 Electronic Circuits II** (3)
ELCT 264L Electronic Circuits II Laboratory (1)
 Analysis of field effect transistor amplifier circuits, amplifier frequency response, thyristors, unijunction transistors, optoelectronic devices and circuits. Ten hours lecture, six hours laboratory per week; seven and one-half week module. Prerequisite: ELCT 244 or consent of instructor. (Spring)
- ELCT 265 Digital Circuits I** (3)
ELCT 265L Digital Circuits I Laboratory (1)
 Binary logic, combinational design, minimization, sequential circuits, and digital computer principles. Six hours lecture, four hours laboratory per week; seven and one-half week module. Prerequisite: ELCT 264 or consent of instructor. (Fall)
- 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)
Individual study beyond the scope of the required curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog). Students must enter into an agreement for specialized training prior to registration for the course. Hours vary. (On demand)
- ELCT 296 Topics** (1,2)
Material of special interest not considered elsewhere in the curriculum. Subjects and hours vary from year to year. Prerequisites: vary with course material; consent of instructor. (On demand)

Engineering

School of Natural Sciences and Mathematics

- ENGR105 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 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 159 Energy and Society** (3)
Energy and modern energy production technology for non-engineering students. Topics include oil, natural gas, coal, hydropower, solar, wind, geothermal, biomass, nuclear, thermonuclear, MHD and ocean energy sources together with their impact on society. Prerequisite: MATH 113 or equivalent. (Fall/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 three one-hour laboratories 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. Prerequisites: 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)

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 158 Architectural (Buildings) Drafting I** (3)
ENGT 158L Architectural (Buildings) Drafting I Laboratory (1)
 Fundamentals of perspective drawing, shadows, and architectural rendering using symbols, templates, special equipment, working drawings, and specifications. Three lectures and two one-hour laboratories per week. Corequisite: ENGR 111. (Fall)
- ENGT 162 Architectural (Mechanical and Electrical) Drafting II** (3)
ENGT 162L Architectural (Mechanical and Electrical) Drafting II Laboratory (1)
 Mechanical and electrical aspects of architecture including plumbing, heating, ventilating, air conditioning, solar effects, lighting, and wiring. Three lectures and two one-hour laboratories per week. Prerequisites: ENGT 158 and ENGR 105. (Spring)
- ENGT 210 Computer Aided Drafting** (2)
ENGT 210L Computer Aided Drafting Laboratory (2)
 Basic principles of computer aided drafting, drawing with the computer and complex drawing programs, and use and development of computer aided drafting (CAD) libraries. Two lectures and two two-hour laboratories per week. Prerequisites: ENGR 105 and CSCI 120 or equivalent.
- 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 225 Concrete Soils Design** (2)
ENGT 225L Concrete Soils Design Laboratory (2)
 Materials, tests, and design procedures for structures involving reinforced concrete and soils. Two lectures and two two-hour laboratories per week. Prerequisite: ENGT 242. (Spring)
- ENGT 230 Water Resources Design** (3)
 Design of systems for storm drainage, sewage, irrigation, and water supply. Prerequisite: ENGT 245. (Spring)
- ENGT 240 Timber and Steel Design** (3)
 Design of structures composed of steel and timber members. Prerequisites: ENGT 102, 241. Corequisite: ENGT 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 245 Fluid Mechanics and Hydraulics (2)**
ENGT 245L Fluid Mechanics and Hydraulics Laboratory (1)
Properties and behaviors of fluids under laminar and turbulent steady flow conditions in pipes and open channels. Hydrostatic pressure on submerged plane surfaces. Bernoulli's equation; pitot tube, venturi tubes, orifices, nozzles, and weirs; critical velocity and head loss in pipes, fittings, and valves; hydraulic turbo machinery. Two lectures and one two-hour laboratory per week. Prerequisite: ENGT 102. (Fall)
- ENGT 251 Electronics Drafting and Design I (2)**
ENGT 251L Electronics Drafting and Design I Laboratory (1)
Basic principles of drafting as applied to electricity and electronics including techniques and lettering, projections, device symbols, component outlines, printed circuit boards, integrated circuits, block and schematic diagrams. Two lectures and one two-hour laboratory per week. Prerequisite: ENGR 105 or consent of instructor. (By request only)
- ENGT 252 Structural Drafting (2)**
ENGT 252L Structural Drafting Laboratory (1)
Principles of design used in arriving at solutions to structural problems and presentation of these solutions in the form of detailed drawings using proper drafting techniques. Two lectures and one two-hour laboratory per week. Prerequisite: ENGR 105 or consent of instructor. (Spring)
- ENGT 253 Topographical and Civil Drafting & Design (2)**
ENGT 253L Topographical and Civil Drafting & Design Laboratory (1)
History, fundamentals, and methods of mapmaking. Two lectures and two one-hour laboratories per week. Prerequisites: ENGR 105, 230, 231, or consent of instructor. (Spring)
- ENGT 254 Piping Drafting (2)**
ENGT 254L Piping Drafting Laboratory (1)
Designing and drawing piping and plumbing systems ranging from an industrial to a residential scope. Two lectures and one two-hour laboratory per week. Prerequisite: ENGR 105 or consent of instructor. (Fall)
- ENGT 256 Machine and Electrical Drafting (2)**
ENGT 256L Machine and Electrical Drafting Laboratory (1)
Application of design principles to machine members. Drawing of designed members to standards of industry utilizing standard joining techniques and available stock items in designs. Two lectures and two one-hour laboratories per week. Prerequisite: ENGR 105. Corequisite: ENGT 242. (Spring)
- ENGT 295 Independent Study (1,2)**
Individual study beyond the scope of the required curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog). (Fall/Spring)

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)

SENGW 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)

SENGW 112 English Composition (3)

Theory and strategy of research, critical writing, and literature. Prerequisite: ENGW 111. (Fall/Spring)

SENGW 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 126, 127 Honors English (3,3)

For students whose high school records and ACT scores are in the 85th percentile or higher. Requirements during the two semesters include critical reviews, a short thesis, a long research paper, and an essay involving a critical analysis of a novel. (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 dialog. (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

SENL1 131 World Literature I (3)

Major works of Western literature from Classical, Medieval, and Renaissance periods including Homer and Dante. (Fall)

SENL1 132 World Literature II (3)

Major works of Western literature from post-Renaissance through modern periods including Goethe and Cervantes. (Spring)

SENL1 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. (Fall)
- ENLI 318 Frontier American Literature** (3)
Historical themes in American literature, often a result of the settling of new frontiers, which contributed to unique settings and characters. (Alternate 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)
- ENLI 356 Shakespeare II** (3)
Early and mature plays, including genres of comedy, history, tragedy, and romance, emphasizing close textual reading in conjunction with cultural and intellectual contexts. ENLI 355 — Early (Tudor) plays; 356 — Late (Stuart) plays. (Alternate Fall/Spring)
- 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, Whitier, Blake, Coleridge, Wordsworth, Byron, Shelley, and Keats. (On demand)
- 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 413 Contemporary Drama** (3)
Realistic and absurd playwrights of the world within the past 35 years. (Fall)
- ENLI 415 American Folklore** (3)
American folklore with an emphasis on collecting Colorado and especially Western Colorado lore. (Spring)
- 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 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)
- 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)

Special Studies

- ENSS 367 Modern English Grammar** (3)
Traditional, structural, and transformational methods of analyzing English grammar, including dialect study, usage and rhetoric, and the relationship between English grammar and the teaching of reading and writing in the English classroom. (Spring)
- ENSS 395 Independent Study** (1,2,3)
Individual study beyond the scope of the existing curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog).
- ENSS 450 Linguistics** (3)
Basic principles and practice in language analysis and description in phonology, morphology, and syntax. Covers language universals, semantics, sociolinguistics, applied linguistics, historical linguistics, and field linguistics. (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. (Spring)
- ENSS 496 Topics** (3)
Material of special interest not considered elsewhere in the curriculum. Subjects vary from year to year. Prerequisites vary with course material. (On demand)

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, capital budgeting, and financing strategies. Prerequisites: ACCT 202, MATH 121, STAT 214. (Fall)
- FINA 396 Topics** (1,2,3)
Material of special interest not considered elsewhere in the curriculum. Subjects vary from year to year. Prerequisites: vary with course material; consent of instructor. (On demand)
- 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)

Fine Arts

School of Humanities and Fine Arts

- FINE 494 Seminar in Critical Analysis of the Arts** (3)
Theory and practice of arts criticism. (Fall)
- 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.

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 101, 102 Introduction to Geology** (4,4)
§GEOL 101L, 102L Introduction to Geology Laboratory (1,1)
Earth and its origin, structures, and composition; the atmosphere, hydrosphere, development of life forms and meteorology; and Solar System: astronomy. Laboratory: rock, mineral, and fossil identification; introduction to topographic maps. Four lectures and one two-hour laboratory per week. (Fall/Spring)
- §GEOL 103 Weather and Climate** (3)
Non-mathematical introduction to elements of local and global weather: the atmosphere, cloud formation, precipitation, seasons, optical phenomena and violent storms. Students practice making 24-hour weather forecasts. (Fall)
- §GEOL 105 Geology of Colorado** (3)
Introduction to minerals, rocks, geologic time scale and basic geologic terms, followed by geology of Colorado taught with the aid of movies and slides. A one-day field trip is required. (Fall/Spring)
- §GEOL 111 Principles of Physical Geology** (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. (Spring)

- 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 spectroscopic, 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. Prerequisite: 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)
- 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** (1,2)
 Individual study beyond the scope of the published curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog).
- 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. Prerequisites: 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. (Spring)
- GEOL 495 Independent Study** (1,2)
 Individual study beyond the scope of the published curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog). (Fall/Spring)
- GEOL 496 Topics** (3)
 Well logging techniques and characteristics of well logs; recent developments, concepts, and theories relating to petroleum, mineral deposits, tectonics, and other topics of current interest are discussed by students in a seminar setting. (Spring)

Graphic Communications

School of Industry and Technology

- GRCO 120 Basic Layout and Design I** (2)
 Principles and techniques of pattern and design concepts, typography, and preparation of art work in both black-and-white and color media. Two hours lecture per week. (Fall)
- GRCO 121 Basic Layout and Design II** (2)
 Continuation of GRCO 120. Two hours lecture per week. Prerequisite: GRCO 120. (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 140 Basic Typesetting** (1)
GRCO 140L Basic Typesetting Laboratory (2)
 Basic typesetting functions with emphasis on operation of photo typesetting systems and production of camera-ready type. Two hours lecture, three hours laboratory per week. (Fall)
- GRCO 141 Advanced Typesetting** (1)
GRCO 141L Advanced Typesetting Laboratory (2)
 Advanced typesetting functions with emphasis on operation of photo typesetting systems and production of camera-ready type. One hour lecture, three hours laboratory per week. (Spring)
- GRCO 220 Advanced Layout and Design I** (3)
 Principles of advertising art and corporate commercial art gained through the design and production of layout projects using the various techniques and media applicable to advertising and corporate art production. Two and one-half hours lecture per week. Prerequisites: ARTE 151, GRCO 120. (Fall)

- GRCO 221 Advanced Layout and Design 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 half-tone, 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 240 Image Preparation I** (1)
GRCO 240L Image Preparation I Laboratory (3)
Basics of camera-ready copy preparation for reproduction using composing machines and paste-up techniques. Four hours of laboratory per week. Prerequisite: GRCO 140. (Fall)
- GRCO 241 Image Preparation II** (1)
GRCO 241L Image Preparation II Laboratory (3)
Advanced techniques of preparing camera-ready copy, including multiple-forms, two or more opaque color printing requirements, four-color transparency printing requirements, and newspaper copy preparation. Four hours of laboratory per week. Prerequisite: GRCO 240. (Spring)
- GRCO 250 Offset Press I** (1)
GRCO 250L Offset Press I Laboratory (3)
Offset press operation, maintenance of presses, and principles of offset including inks, fountain solutions, and plates. Four hours of laboratory per week. (Fall)
- 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 250. (Spring)
- GRCO 260 Printing Cost Estimating** (2)
Costs and cost-estimating techniques specifically related to the printing industry. Three hours lecture per week. Prerequisite: Graphic Communications majors only. (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 295 Independent Study** (1,2)
Individual study beyond the scope of the required curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog). Student must enter into an agreement prior to registration. (On demand)
- GRCO 296 Topics** (1,2)
Material of special interest not considered elsewhere in the curriculum. Subjects vary from year to year. Prerequisites: vary with course material; consent of instructor. (On demand)

History

School of Social and Behavior Sciences

- SHIST 101, 102 Western Civilizations** (3,3)
Political, social, economic, and cultural history of Western mankind from ancient times to modern times. (Fall/Spring)
- SHIST 120 History of Colorado** (3)
History of the state from pre-historic to modern times. (Fall/Spring)
- SHIST 131, 132 United States History** (3,3)
History of the United States from Colonial period to modern times. (Fall/Spring)
- SHIST 136 Introduction to the Afro-American Experience** (3)
Afro-American experience from beginnings in Africa to the present. (Fall)

- SHIST 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 300 History of England** (3)
England from ancient times to the opening of the Modern period. Prerequisites: HIST 101, 102, or consent of the instructor. (Fall)
- HIST 301 History of England Since 1688** (3)
Survey of the history of England from the opening of the modern period to the present. Prerequisites: HIST 300 or HIST 102. (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, or consent of instructor. (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, 330. (Fall)
- HIST 332 History of Modern Warfare** (3)
War, its causes, consequences, and impact on history from the 18th century to the present. Prerequisites: HIST 101, 102. (Fall)
- HIST 340 History of the Islamic World** (3)
The origins, spread, and influence of the Islamic world, including the Middle East and North Africa with emphasis on its position in modern world affairs. Prerequisites: HIST 101, 102. (Spring)
- HIST 342 The 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** (1,2)
Individual study beyond the scope of the required curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog).
- HIST 400 The Soviet Union and Eastern Europe** (3)
Imperial Russia, the Soviet Union, and Eastern Europe from 1900 to the present. Prerequisites: 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. Prerequisites: HIST 101, 102. (Spring)

- HIST 404 Introduction to Historical Research** (1)
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 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)

Home Economics

School of Natural Sciences and Mathematics

- HMEC 141 Meal Management in Early Childhood** (2)
HMEC 141L Meal Management in Early Childhood Laboratory (2)
Food preparation and meal service for pre-school. Laboratory: application of food preparation and meal service. Two lectures and two two-hour laboratories per week. (Spring)
- HMEC 151 Foreign Food Cookery** (1)
HMEC 151L Foreign Food Cookery Laboratory (1)
Preparation and service of foods as they are commonly prepared and served in countries outside the United States. One lecture and one two-hour laboratory per week. (Fall)
- HMEC 211 Nutrition** (3)
Nutrients and their relation to physical and mental health. (Fall/Spring)
- HMEC 212 Infant and Child Nutrition** (2)
Nutrition for maternal, infant, and child health. Prerequisite: HMEC 211. (Spring)
- HMEC 238 Child Development** (3)
Physical, emotional, intellectual, and social growth and development of young children, the effect of prenatal maternal behavior on fetus development, behavior and guidance of the child from birth through adolescence. (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 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)

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.
- 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** (1,2,3)
Individual study beyond the scope of the existing curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog).
- HUMA 396 Topics in Contemporary Religion** (1)
Subjects vary from year to year. Prerequisite: Upper division standing or consent of instructor. (Spring)
- HUMA 499 Internship** (8)
See faculty adviser for details. (On demand)

Industrial Science

School of Industry and Technology

- 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** (3)
Industrial safety regulations and practice including fire, electrical, mechanical, dust and vapor hazards, and appropriate accepted safety practice related to each; life support and trauma management relating to emergency care; Occupational Safety, and other regulations. Ten 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: upper-division 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 Industry and Technology

NOTE: Full-time student schedule is a minimum of five hours per day in MAMT courses. Enrollment, with instructor approval, may occur at any time in certain courses. Please check with the instructor.

- MAMT 100 Machine Shop Studies** (3)
Pre-employment machine operator training orientation. Concentrated and condensed introduction in the areas of calculator math, blueprint reading, geometric tolerancing, inspection, gauging, safety, and employee group skills. (On demand)
- MAMT 102 Machine Theory** (2)
Concentrated unit dealing with speeds and feeds of machines, materials, tooling, tapping, boring, and manufacturing processes. Operator pre-employment training course. (On demand)
- 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 used in the machine shop. A hand-held calculator of a specified type will be required of each student. Calculator required — type specified by instructor. Arithmetic background important. (On demand)
- MAMT 110 Gauging and Measuring Tools** (1)
Uses and techniques of various types of inspection equipment, including micrometers, Vernier scales, instruments, hole gauges in surface plate work, finish of parts and inspection techniques. Prerequisite: MAMT 106 or consent of instructor. (On demand)
- MAMT 115 Introduction to Machine Shop** (3)
Safety procedures: use of bench tools, layout tools, power saws, and taps; sharpening general purpose drills, grind lathe bits; and identification and operation of basic machines such as the bench grinder, drill press, band saw, and others. Corequisite: MAMT 106 or consent of instructor. (On demand)
- MAMT 120 Machine Technology I** (4)
Operation of engine lathes, milling machines and surface grinders. Prerequisites: MAMT 110, 115. (On demand)
- MAMT 125 Machine Technology II** (4)
Further development of MAMT 120. Emphasis will be placed on technical aspects of tooling and machining tolerances. Prerequisite: MAMT 120. (On demand)
- MAMT 130 Machine Technology III** (4)
Advanced machine operations including O.D. grinding, cutter tool grinding, gear cutting, indexing, and rotary table work with emphasis on accuracy, inspection and workmanship. Prerequisite: MAMT 125. (On demand)
- MAMT 135 Job Shop Machining I** (3)
Production of machined parts from a shop blueprint, writing process sheets, and estimating machine time. The machined parts may involve one or more machine operation. Machine time, paperwork, inspection, and accuracy will be emphasized. Prerequisites: MAMT 130 or consent of instructor. (On demand)
- MAMT 140 Job Shop Machining II** (3)
Further development of writing process sheets, estimating machine time, performing final inspection on the finished parts and using all machines in the shop including the numerical control machines. Prerequisite: MAMT 130 or consent of instructor. (On demand)
- MAMT 145 Machine Maintenance** (2)
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. 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 preemployment training. (On demand)
- MAMT 151 Numerical Control Machining I** (4)
Computerized and numerical control machining operations, including control functions, programming format, machine setup, and operation. Prerequisite: consent of instructor. (On demand)
- MAMT 155 Numerical Control Machining II** (4)
Further development of concepts introduced in MAMT 151 with emphasis on set up and operation of N.C./C.N.C. machines. Prerequisite: MAMT 151 or consent of instructor. (Spring)
- MAMT 160 Properties of Materials** (2)
Descriptions of smelting and refining various types of metals. Discussions and demonstrations on various methods of heat treating, hardness testing, and cutting chip theory. (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 196 Topics** (1,2)
Material of special interest not considered elsewhere in the curriculum. Subjects vary from year to year. Prerequisites: vary with course material; consent of instructor. (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 296 Topics** (1,2,3)
Workshops designed to cover specialized topics not considered in detail in other course offerings. Topics and credits may vary. Prerequisite: sophomore status or consent of instructor. (On demand)

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; 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 Personnel 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** (1,2)
Individual study beyond the scope of the required curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog). Students must prepare a comprehensive proposal outlining the study and its justification and complete an application at least six weeks prior to the end of the semester preceding the semester in which they wish to take the Independent Study. (Fall/Spring)
- MANG 396 Topics** (1,2,3)
Material of special interest not considered elsewhere in the curriculum. Subjects vary from year to year. Prerequisites: vary with course material; consent of instructor. (On demand)
- 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 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. (Spring/odd years only)
- 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 majors during the last semester of the senior year. Prerequisites: all required core and emphasis courses must be completed or concurrently enrolled and senior standing. (Spring)
- MANG 498 Related Work Experience** (1,2)
See ACCT 298 course profile. (Fall/Spring)
- MANG 499 Internship** (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 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 out side speakers supplement class lectures. Prerequisite: MARK 231. (Fall)
- MARK 395 Independent Study** (1,2)
Individual study beyond the scope of the required curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog). Students must prepare a comprehensive proposal outlining the study and its justification and complete an application at least six weeks prior to the end of the semester preceding the semester in which they wish to take the Independent Study. (Fall/Spring)
- MARK 396 Topics** (1,2,3)
Material of special interest not considered elsewhere in the curriculum. Subjects vary from year to year. Prerequisites: vary with course material; consent of instructor. (On demand)
- 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)

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. (Spring)
- 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. (Fall)
- 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. (Fall)
- MASS 321 Broadcast Writing** (3)
Techniques and practice in writing broadcast scripts, including news, advertising and documentary. Prerequisite: MASS 231 or consent of instructor. (Spring)

- MASS 335 Public Relations Concepts** (3)
Historical and theoretical approach to contemporary public relations with emphasis on the persuasion process and ethics, propaganda, and advertising techniques in the mass media. Prerequisites: MASS 231, MARK 232 or consent of instructor. (Fall)
- MASS 341 Copy Editing and Make-up** (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. (Spring/alternate years)
- 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)
- 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 494 Seminar** (3)
Major issues of the media in modern culture and media criticism. Prerequisite: Upper division standing. (Spring)
- 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. Prerequisites: 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 followed by a careful treatment of decimals and fractions. 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. Prerequisite: one year high school algebra or MATH 020. (Fall/Spring)
- SMATH 101 Programming** (1)
Theory and operation of calculators as applied to problems in mathematics, business, psychology, electronics, vocational-technical studies, physical sciences, and biological sciences. (On demand)

SMATH 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: consent of instructor. (Fall/Spring)

SMATH 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 108 Agricultural Mathematics (3)

Mathematical problems and examples in agricultural production, management, marketing, and mechanization including problems in agriculture as they relate to environmental quality. (On demand)

SMATH 110 Finite Mathematics (2)

Essential concepts of algebra for students in social science, sociology, guidance, etc. Topics include graphing, equations, sets, binomial theorem, permutations and combinations, probability and descriptive statistics. (Fall/Spring)

SMATH 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)

SMATH 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)

SMATH 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)

SMATH 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. Prerequisite: MATH 113 or consent of instructor. (Fall)

SMATH 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)

SMATH 131 Right and Oblique Triangle Solutions (Module 1) (1)

SMATH 132 Trigonometric and Circular Function and graphs (Module 2) (1)

SMATH 133 Conditional Equations and Trigonometric Identities (Module 3) (1)

SMATH 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)

SMATH 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)

SMATH 152 Calculus II (5)

Trigonometric and hyperbolic functions, techniques of integration, series, conics, polar coordinates, and parametric equations. Prerequisite: MATH 151. (Fall/Spring)

MATH 161 Programmable Calculator (1)

Theory and operation of the programmable calculator. Prerequisite: MATH 130 or consent of instructor. (On demand)

- SMATH 253 Calculus III** (4)
 Vectors in three-dimensional space, vector functions, partial derivatives, directional derivative and multiple integrals. Prerequisite: MATH 152. (Fall/Spring)
- SMATH 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)
- SMATH 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 270 Discrete Mathematics I** (3)
 Elementary logic, induction, recursion, recurrence relations, sets, combinatorics, relations, functions, graphs, trees and elementary abstract structures. Prerequisite: MATH 121 or MATH 151. (Fall)
- 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. Prerequisite: MATH 152. (Fall)
- MATH 370 Discrete Mathematics II** (3)
 Applications of logic, Boolean algebra, abstract structures, finite-state machines, computability, and formal languages. Prerequisite: MATH 265. (Spring)
- MATH 380 History of Mathematics** (2)
 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** (4)
 Classical Euclidean geometry of polygons and circles, synthetic geometry, constructions, inverse geometry, finite geometry, geometric transformations, and convexity. Prerequisite: MATH 253. (Fall)
- MATH 390 Abstract Algebra** (3)
 Algebraic systems of groups, rings, integrals, domains, fields, vector spaces, linear transformations, and convexity. Prerequisite: MATH 265. (Spring)
- 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)
Calculus of one variable, the real number system, continuity, differentiation, integration, and Riemann-Stieltjes integration. Prerequisite: MATH 253. (Spring)
- MATH 495 Independent Study** (1,2)
Individual study beyond the scope of the required curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog). (On demand)
- MATH 496 Topics** (3)
Study in a branch of mathematics not treated in an established course. The topic varies with interests of students and faculty and is included in the course name when it is offered. (On demand)

Mechanics

School of Industry and Technology

Automotive

- MECA 122 Drivelines and Differentials** (2)
Comprehensive study of drivelines and differentials, theory of operation, service and repair procedures including parts nomenclature and identification, testing and diagnosis of noises and malfunctions, gear and bearing failure, and adjustment of components. Twenty-five hours per week; five weeks. (Spring)
- MECA 142 Suspension and Alignment** (5)
Theory of operation, component parts, identification and repair procedures including testing procedures, diagnosis of suspension, alignment and wheel balance problems; repair or replacement of worn or defective suspension, steering, and related parts; theory and practice of the five basic angles of steering geometry, diagnosing tire wear, steering problems and alignment of the front end. Twenty-five hours per week; five weeks. (Fall/Spring)
- MECA 222 4X4 Components and Repair** (5)
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. Twenty hours per week; five weeks. (Spring)
- MECA 223 Automotive Engine Diagnosis, Tune-up and Performance** (7)
Carburetion, fuel injection, and ignitions systems studied using recent model components with emphasis on diagnosis of problems. Students learn to test and repair or replace carburetors, fuel pumps, injector pumps, and injectors, as well as beginning the study of certain electronic control devices as they relate to the function of carburetion, fuel injection, and ignition systems. Basic testing of emission control devices also included. Twenty-five hours per week; five weeks. (Spring)
- MECA 227 Automatic Transmissions** (4)
Principles of operation of planetary-gear sets, fluid couplings, torque converters, servo bands, clutch packs, and control circuits. Fifteen hours per week; five weeks. (Fall)
- MECA 239 Emission Control** (4)
Emission-control systems dealing with types, design, principles of operation, and problems encountered with these systems plus necessary adjustments and repairs. Fifteen hours per week; five weeks. (Spring)
- MECA 243 Standard Trans-Axles** (3)
Power transmission, standard and automatic; use, maintenance, troubleshooting and repair of trans-axle systems in frontwheel drive and rear engine foreign and domestic vehicles. Ten hours per week; five weeks. Prerequisites: sophomore standing, MECH 121 and MECA 227, or appropriate work experience and consent of instructor. (Spring)
- MECA 250 Troubleshooting and Diagnosis Procedures** (3)
Simulation of a working shop in which students gain additional experience and skill troubleshooting and diagnosing automotive problems on vehicles. Students will develop a logical approach to troubleshooting and prepare a concise written diagnosis on each vehicle assigned. Fifteen hours per week; five weeks. Prerequisites: sophomore standing and consent of instructor. (Spring)
- MECA 254 Automotive Electronics** (4)
Advanced automotive electronics as relates to solid state systems, command computers, and electronic advances in technology. Twelve hours per week; five weeks. Prerequisites: sophomore standing and MECH 124 or appropriate work experience and consent of instructor. (Spring)

MECA 295 Independent Study (1,2)
Individual study beyond the scope of the required curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog). Students must enter into an agreement for specialized training prior to registration. Hours vary. (On demand)

MECA 296 Topics (1,2)
Material of special interest not considered elsewhere in the curriculum. Subjects vary from year to year. Prerequisites: vary with course material; consent of instructor. Hours vary. (On demand)

Heavy Equipment — Diesel

MECD 115 Heavy Equipment Maintenance (3)
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. Fifteen hours per week; five weeks. (Spring)

MECD 120 Diesel Engine Reconditioning I (4)
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, and components. Fifteen hours per week; five weeks. (Spring)

MECD 131 Heavy Duty Brake Systems (4)
Fundamentals and repair of brake systems used on heavy equipment; correct disassembly, inspection, reassembly, adjustment, and troubleshooting procedures on these systems. Twelve hours per week; five weeks. (Fall)

MECD 132 Heavy Equipment Drivetrain I (5)
Powertrain component operating principles, construction, basic repair and maintenance of powertrain components according to standard operating procedure. Fifteen hours per week; five weeks. (Fall)

MECD 150 Hydraulic Systems I (4)
Principles of hydraulics and pneumatics, including application, types of systems, function of components, servicing, inspection, adjustments, and troubleshooting. Twelve hours per week; five weeks. (Spring)

MECD 222 Fuel Systems (2)
The design, construction, repair, and maintenance of fuel injection systems, components, pollution control devices, and governors. Five hours per week; five weeks. (Fall)

MECD 223 Diesel Engine Analysis and Trouble-shooting (3)
Application of analysis and trouble-shooting techniques, and adjustment of diesel engines for optimum operating performance. Fourteen hours per week; five weeks. (Spring)

MECD 225 Diesel Engine Reconditioning II (4)
Continuation of MECD 120 dealing specifically with the four-cycle diesel engine, including disassembly, inspecting, repairing, and reassembling a four cycle diesel engine according to operating specifications. Twenty-two hours per week; five weeks. (Fall)

MECD 232 Heavy Equipment Drivetrains II (5)
Continuation of MECD 132. Repair of final drives, steering clutches, undercarriages, powershift transmissions, and drivelines; analysis of condition and testing. Twenty hours per week; five weeks. (Fall)

MECD 251 Hydraulic Systems II (3)
Application of hydraulic fluids, conductors, reservoirs, pumps, pressure control, volume control, check valves, actuators, hydraulic motors, and flow control, including trouble-shooting, system design, preventive maintenance practice, and application. Twelve hours per week; five weeks. (Spring)

MECD 275 Heavy Equipment Troubleshooting and Repair (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; five hours per day. Prerequisites: sophomore standing and consent of instructor. (On demand)

MECD 295 Independent Study

(1,2)

Individual study beyond the scope of the required curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog). Student must enter into an agreement for specialized training which includes specific objectives and learning activities with an appropriate instructor prior to registration. (On demand)

MECD 296 Topics

(1,2)

Material of special interest not considered elsewhere in the curriculum. Subjects vary from year to year. Prerequisites: vary with course material; consent of instructor. (On demand)

Mechanics — General**MECH 105 Introduction to Shop Practices & Vehicle Systems**

(3)

Shop procedures, shop and personal safety, tool identification and use; use of proper terminology; test equipment, identification fasteners and basic rigging as they apply to automotive/heavy equipment systems and working shops. Ten hours per week; five weeks. (Fall)

MECH 111 Applied Math for Auto Mechanics

(2)

Aritmetic, shop math, and algebra needed to handle the mathematical aspects of mechanics. Two hours per week. Prerequisite: MATH 015 or equivalent. (Fall/Spring)

MECH 113 Internal Combustion Engines

(5)

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. Twenty-five hours per week; five weeks. (Fall)

MECH 121 Clutches and Standard Transmissions

(2)

Clutch assembly and standard transmission including theory of operation, removal and installation, and disassembly procedures with emphasis on the diagnosis and correction of malfunctions. (Fall)

MECH 125 Light Duty Brake Systems

(3)

Servicing and repair of hydraulic brake systems including basic principles of hydraulics; servicing the linings, drums, cylinders, lines and power booster units; adjusting and bleeding the system. Fifteen hours per week; five weeks. (Fall)

MECH 133 Air Conditioning

(3)

Refrigeration, methods of operation and control, proper handling of refrigeration, use of testing equipment, leak tests, efficiency tests, service procedures (including evacuation, purging, and charging the system), component and compressor replacement and repair, general maintenance, testing and diagnosis of malfunctions. Ten hours per week; five weeks. Prerequisite: consent of instructor. (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** (3)
The full use of chromaticism through secondary dominants, altered chords, Neapolitan and augmented sixth chords, and modulation techniques. Continues into 20th Century including the use of advanced chromaticism, serialism, and atonality. 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. Prerequisites: 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** (1)
A concentrated study of repertoire in preparation for the piano proficiency exam. Maximum keyboard time will develop coordination and flexibility. Prerequisites: MUSA 130, 131, or consent of instructor. (Fall)
- MUSA 231 Guitar Techniques and Materials** (2)
Methods and materials for teaching and performing on the guitar. Student must provide own instrument. Prerequisite: MUSA 110. (Alternate Spring)
- MUSA 232 String Techniques and Materials** (2)
Study of violin, viola, cello, and string bass in a class situation. Emphasis is on fundamentals of playing techniques at an elementary level. (Alternate Fall)
- MUSA 233A Woodwind Instrument Techniques and Materials** (2)
Study of flute, oboe, clarinet, bassoon, and saxophone in a class situation. Emphasis is on fundamentals of playing techniques at an elementary level. (Alternate Fall)

- MUSA 233B Recorder Techniques and Materials** (2)
The study of methods and materials for teaching the recorder in the public schools. The course provides practical instruction in the performance of the soprano, alto, tenor, and bass recorder from all eras of recorder literature. (Alternate Fall)
- MUSA 234 Brass Instrument Techniques and Materials** (2)
A concentrated course to develop a knowledge of the brass instruments and to acquire sufficient skill to demonstrate good tone, technique, and breath control. (Alternate Spring)
- MUSA 235 Percussion Instrument Techniques and Materials** (2)
The study of methods and materials for teaching beginning percussion in the public school. Includes practical instruction on the instruments utilized in the marching band, orchestra, and stage band. (Alternate Spring)
- MUSA 236 Electronic Instrument Techniques and Materials** (2)
The study of methods and materials for the introduction to the use of electronic instruments, including the areas of sound reinforcement (microphones and amplification) and sound generation (synthesis) by electronic means. (Alternate Spring)
- MUSA 241 Music and Methods in Early Childhood Education** (2)
For students who will be working with preschoolers and kindergarten-age students. Through the creative process students develop simple tunes and gain knowledge and appreciation of music. (Fall/Spring)
- MUSA 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 261. (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 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 341 Music and Methods for the Elementary Classroom Teacher** (2)
Musical concepts in singing, listening, note reading, rhythm, and creative projects for use in the elementary curriculum. (Spring)
- MUSA 395 Independent Study** (3)
Individual study beyond the scope of the existing curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog). (Fall/Spring)
- MUSA 410 Vocal Pedagogy** (3)
The physiology of the human vocal mechanism, various teaching styles, vocal problems related to various age groups, and vocal repertoire pertinent to all age groups and levels of development. Prerequisites: MUSA 137, 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 443 Choral Techniques and Materials** (2)
Stylistic interpretation of choral music from the Renaissance to present day. Analysis of selections from each historical period for the purpose of developing performance techniques correct to the various styles. Prerequisite: MUSA 450 or 451B. (Alternate Spring)
- 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. Section A is for instrumental majors and Section B for vocal music majors. Prerequisite: MUSA 350 and recommended concurrent enrollment in MUSA 317. (Alternate Spring)
- MUSA 470, 471 Music Theatre** (2,2)
Advanced levels of scene study, auditioning, choreography, directing, writing, arranging, and problems in production. Prerequisites: MUSA 370, 371 and audition. (Fall/Spring)
- MUSA 495 Independent Study** (3)
Individual study beyond the scope of the required curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog). (Fall/Spring)

Lessons

Applied Music Lessons Lessons are offered at two levels of study, designated by the letters A and B after the course number in the class schedule. "A" level of Applied Music study is considered "major" instrument and requires performances and attendance at the weekly recitals throughout the term. Music majors are required to study their main performance medium at the "A" level.

"B" level of Applied Music study is considered "minor" instrument and is designed for the non-major, or study of a "second" instrument. There is no performance or attendance at performance class meetings requirement for this level of study.

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)

Performing

MUSP 160 Improvisation I-Beginning (1)

Basic materials and techniques for improvisation, including chord and scale construction, correlation of chords and harmonic patterns with specific scale forms, phrasing and rhythmic concepts, elementary forms, and standard terminology. Prerequisite: MUSA 110. (Fall)

MUSP 260 Improvisation II-Advanced (1)

Advanced harmonic and linear concepts, with an emphasis on technique, style, and idiomatic usage. Special concerns are increased chromaticism, modality, quartal harmonies, and conventional patterns. Prerequisite: MUSP 160. (Spring)

MUSP 420 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 110, 210, 310, 410 Accompaniment (1)

Development of proficiency in accompanying vocal solo and choral performance, solo instrumental performance and instrumental ensembles in the performance of chamber music. (Fall/Spring)

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 143, 243, 343, 443 Pep Band (1)

Membership based on ability and instrumentation. The band performs in the stands for football games and in parades. (Fall)

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, 246, 446 Community Performance Organizations (1)**
Students and other musicians in the community who desire college credit are allowed to demonstrate ability in their medium and to become, by audition, members of various musical groups and receive credit. Each level may be repeated once for credit.
- MUSP 150, 250, 350, 450 Concert Choir (1)**
The major large choir, open to all students and staff who enjoy singing, with final membership approved by the director. Concert Choir performs great choral literature of all types representing Mesa State College in formal concerts both on and off campus including concert tours, performing large-scale masterworks with orchestra. (Fall/Spring)
- MUSP 151, 251, 351, 451 Symphony Chorus (1)**
Available to students who wish to perform masterworks with the Grand Junction Symphony and receive credit. Offered in accordance with the Symphony Season as planned by the directors of the Grand Junction Symphony Orchestra and Chorus. (Fall/Spring)
- MUSP 155, 255, 355, 455 Music Theatre Ensemble (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)
- 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 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. Prerequisite: 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)

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. (Spring)
- 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 sub-systems with emphasis on the psychological components of man and the use of the nursing process. (Spring)
- NURS 245 Fundamentals of Nursing (3)**
NURS 245L Fundamentals of Nursing Laboratory (2)
 Development of selected interpersonal, communication, and psychomotor skills to assist individuals in meeting their health care needs. Begins to use the nursing and teaching process in assisting individuals to meet health needs. 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: completion of 200 level nursing courses. (Fall)
- NURS 335 Health Assessment (3)**
NURS 335L Health Assessment Laboratory (1)
 Assessment of the health status, history taking, and physical examination of adults and children. Prerequisite: completion of 200 level nursing courses; previous or concurrent enrollment in BIOL 241. (Fall)
- 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. (Spring)
- NURS 362 Spiritual Components in Helping Relationships (2)**
 Theoretical approaches to man's spiritual nature and the application of theories to the helping relationship. (Spring)
- NURS 363 Women's Health Issues (2)**
 Topics and issues that influence women's health in contemporary society. Foundations of alternative health services are discussed. (Spring)
- 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 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: senior standing; completion of 300 level nursing courses. (Fall/Spring)
- NURS 435 Nursing Process V: Mental Health (3)**
NURS 435L Nursing Process V: Mental Health Laboratory (2)
 In-depth examination of psychosocial adaptive modes in relation to mental health maintenance and restoration; emphasis on psychosocial developmental theories, principles of communication and relationship development. Includes assessment of emotional disorders and psychotherapeutic interventions. Prerequisite: senior standing. (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. (Spring)
- NURS 445 Nursing Process VI: Advanced Nursing Process** (3)
NURS 445L Nursing Process VI: Advanced Nursing Process Laboratory (4)
Advanced concepts essential for nursing care of clients requiring intervention in relation to complex multisystem illness or injury. Provides opportunities for direct patient care in both structured and unstructured settings. (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 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: senior standing or consent of instructor. (Spring)
- 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 behaviours are discussed. Prerequisite: consent of instructor. (Spring)
- 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. (Spring)
- NURS 475 Research Process** (2)
The relationship between nursing research and the system of nursing are examined; processes and methodology of scientific investigation involving content relevant to the use of research studies in nursing are presented. Prerequisite: Statistics course or concurrent enrollment in STAT 200. (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 494 Seminar** (1,2)
Current topics, issues and problems in nursing and health care with topics announced each semester. Prerequisites: senior standing, 2.75 GPA, and consent of instructor.
- NURS 495 Independent Study** (1,2)
Individual study beyond the scope of the required curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog).

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, parts of the machine and development of minimum skill with instruction and practice on simple business letters, tabulation, and manuscripts. Priority given to students in office occupations; others may register on space available basis. Placement dependent on ability. Prerequisite: consent of instructor. Cannot be used as an elective for baccalaureate, associate of science, or associate of art degrees. (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 221 Transcription Machines** (3)
Fundamental skills, speed, and accuracy of transcription on electronic equipment. Prerequisites: OFAD 152, 264 or consent of instructor. (Fall/Spring)
- OFAD 231 Medical Transcription** (3)
Competency developed with transcribing machines through use of medical correspondence and professional records. Prerequisites: (OFAD 147, 152, and 264 or consent of instructor. (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 263 Word Processing Individualized** (3)
Students design their course of study according to individual needs and background, with the instructor's approval, and select, from those available, the word processor to be learned. Students work at their own pace. Training includes basic word processing features and unique features of the selected software. Two to three hours per week of arranged laboratory is required in addition to regularly scheduled classes. The course may be taken a second time for additional credit. Prerequisite: knowledge of the keyboard. (Fall/Spring)
- OFAD 264 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. Prerequisite: typing proficiency or concurrent enrollment in OFAD 152. (Fall/Spring)

- OFAD 266 Advanced 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, 263, and 264 or consent of instructor. (Fall/Spring)
- OFAD 270 Office Administration: 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. Prerequisite: OFAD 101 or equivalent. (Fall)
- OFAD 271 Office Administration: 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. Prerequisite: OFAD 263 or OFAD 264. (Spring)
- OFAD 295 Independent Study** (1,2)
Individual study beyond the scope of the required curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog). (On demand)
- OFAD 296 Topics** (1,2,3)
Material of special interest not considered elsewhere in the curriculum. Subjects vary from year to year. Prerequisites: vary with course material; consent of instructor. (On demand)
- 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 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, MANG 371. (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 497 Practicum**(4)**

Interpersonal training and counseling practice under professional supervision. A typed paper/journal must be submitted for approval and course credit. Prerequisites: 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 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. (Fall)

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. (Spring)

PHIL 275 Introduction to Logic**(3)**

Forms of reasoning, valid versus fallacious inferences, strong versus weak arguments. Designed to increase the ability to reason clearly and correctly and follow and critically evaluate the reasoning of others. (Fall)

PHIL 352 Ethics**(3)**

The study of such problems as war and violence, right to dissent, abortion, capital punishment, treatment of minorities, genetic engineering, and the environmental crisis to help the student achieve a personal, ethical view-point. Major ethical philosophers are surveyed, such as Plato, Aristotle, Locke, Kant, Spinoza, Thoreau, Jefferson, Nietzsche, Mill, and Fletcher. Emphasis is placed on application of their concepts to current issues. (Spring)

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. (Alternate Spring)

Physical Education

School of Social and Behavioral Sciences

Academic

PHYA 200 Introduction to Physical Education — (1)
An orientation to the breadth, scope, 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: ARC Advanced Life Saving 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 (3)
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 180, 181 or THEA 123, 124. (Fall/Spring)
- PHYA 297 Practicum** (1)
Supervised assistantship with physical educators or recreation practitioners. (Fall/Spring)
- PHYA 297B Choreography Practicum I** (1)
Student practice in choreographing and producing an original dance work. Prerequisite: 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, BIOL 141. (On demand)
- PHYA 307 Philosophy and Psychology of Coaching** (2)
Fundamental philosophical and psychological principles related to coaching competitive athletic teams. Prerequisite: PHYA 200. (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.
- 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. Prerequisite: current Standard First Aid Card from American Red Cross. (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. Prerequisite: PIYA 200. (Fall)
- PHYA 396 Topics** (1,2,3)
 Study and exploration of contemporary issues and topics in the field of physical education not otherwise considered in present curricular offerings. Prerequisite: upper division status. (On demand)
- PHYA 397 Choreography Practicum II** (1)
 Student practice in choreographing and producing an original dance work. Prerequisites: PIYA 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. Prerequisite: upper division standing. (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. Prerequisites: 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: upper division standing and completion of at least half of all physical education course-work required for certification. (Fall)
- PIYA 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 the Physically Disabled**(3)
 Physical activity, its modification and adaptation for the physically and mentally disabled participant. Prerequisite: PIYA 200 or RECR 210, or consent of instructor. (Spring)
- PHYA 497 Choreography Practicum III** (1)
 Student practice in choreographing and producing an original dance work. Prerequisite: 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 (33 per-cent) and participation in the activity (67 percent). Students are examined both on knowledge of the activity and proficiency in the activity.

\$PHYE Physical Education Activity Courses		(1 each)
PHYE 101	Beginning Swimming	PHYE 154 Beginning Baseball
PHYE 102	Intermediate Swimming	PHYE 155 Intermediate Baseball
PHYE 103	Diving	PHYE 156 Soccer
PHYE 104	Water Polo	PHYE 158 Speedball
PHYE 106	Scuba	PHYE 160 Field Hockey
PHYE 108	Canoeing	PHYE 162 Volleyball
PHYE 110	River Rafting	PHYE 163 Intermediate Volleyball
PHYE 112	Backpacking	PHYE 164 Beginning Basketball
PHYE 113	Beginning Bowling	PHYE 165 Intermediate Basketball
PHYE 114	Intermediate Bowling	PHYE 166 Flag Football
PHYE 115	Beginning Golf	PHYE 168 Hatha Yoga & Relaxation I
PHYE 116	Intermediate Golf	PHYE 169 Hatha Yoga & Relaxation II
PHYE 117	Badminton	PHYE 170 Beginning Modern Dance
PHYE 119	Archery	PHYE 171 Intermediate Modern Dance
PHYE 121	Beginning Tennis	PHYE 172 Square Dance
PHYE 122	Intermediate Tennis	PHYE 173 Folk Dance
PHYE 123	Racquetball	PHYE 174 Social Dance
PHYE 125	Handball	PHYE 175A Modern Jazz Dance I
PHYE 127	Physical Conditioning	PHYE 175B Modern Jazz Dance II
PHYE 128	Inter. Weight Training	PHYE 176 Beginning Ballet
PHYE 129	Weight Training	PHYE 177 Intermediate Ballet
PHYE 130	Fitness	PHYE 178 Tap Dance
PHYE 132	Aerobics	PHYE 179 Dance Performance Group
PHYE 133	Skiing	PHYE 180 Varsity Football
PHYE 135	Cross-Country Skiing	PHYE 181 Varsity Basketball
PHYE 137	Horseback Riding	PHYE 182 Varsity Baseball
PHYE 139	Roller Skating	PHYE 183 Varsity Wrestling
PHYE 141	Bicycling	PHYE 184 Varsity Tennis
PHYE 143	Orienteering	PHYE 185 Varsity Volleyball
PHYE 145	Wrestling	PHYE 186 Varsity Softball
PHYE 147	Track and Field	PHYE 187 Varsity Track and Field
PHYE 149	Gymnastics	PHYE 188 Varsity Golf
PHYE 152	Softball	PHYE 189 Women's Cross Country

Physical education courses numbered above 199 do *not* count as activity courses.

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 341 Fluid and Thermal Sciences I** (3)
Basic concepts, laws, and theorems of equilibrium thermodynamics. Principles of physics, chemistry and mathematics applied to development of material and energy balances. Application to engineering problems. Corequisites: MATH 253 and PHYS 223 or consent of instructor. (Fall)
- PHYS 342 Fluid and Thermal Sciences II** (3)
Review of thermodynamics, fundamentals of fluid flow, heat and mass transfer. Conservation equations for momentum, energy and mass. Introduction to conduction, convection, and radiation heat transfer. Application to various engineering problems. Prerequisite: PHYS 341.
- 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** (1,2)
Individual study beyond the scope of the required curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog). (Fall/Spring)
- PHYS 396 Topics** (3)
Material varies from year to year. Topics are selected from such areas as plasma physics, general relativity, astrophysics, symmetry groups, and differentiable manifolds in physics. Prerequisites: PHYS 223 and MATH 360. (Fall/Spring, on demand)
- 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. Prerequisites: 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. Prerequisites: upper division standing and consent of instructor. (Fall/Spring)

Political Science

School of Social and Behavioral Sciences

- SPOLS 101, 102 American Government** (3,3)
The framework and functions of the national government with some attention to civil rights and foreign policy. (Fall/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)
- SPOLS 256 State and Local Government** (3)
The development, organization, and operation of state and local governments in the United States. Prerequisites: POLS 101, 102. (Fall)
- SPOLS 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, 102 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, 102, or HIST 102. (Spring)
- POLS 310 Constitutional Interpretations** (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, 102. (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, 102 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, 102 or equivalents 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** (1,2)
Individual study beyond the scope of the required curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog). (Fall/Spring)
- 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 and 102 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 and 102 or consent of instructor. (Spring)
- POLS 490 Senior Seminar for Political Science** (1)
 Research in a field of the student's emphasis and oral presentation of research to the class for discussion and critique. Required of all senior Political Science majors prior to graduation. Prerequisite: senior in Political Science. (Spring)

Psychology

School of Social and Behavioral Sciences

- SPSYC 121, 122 General Psychology** (3,3)
 Fundamental principles of psychology. (Fall/Spring)
- SPSYC 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)
- SPSYC 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)
- SPSYC 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)
- SPSYC 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 254 Educational Psychology** (3)
 Psychological principles underlying the social, emotional, and intellectual development of the child as these relate to educational theory and practice. Prerequisites: PSYC 121, 122. (Fall)

- 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 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 phenomenon of learning and memory in both lower animals and humans. Laboratory experiments in classical conditioning, operant conditioning, and human cognition and memory 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** (1,2)
Individual study beyond the scope of the required curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog). (Fall/Spring)
- PSYC 396 Topics** (1,2,3)
Material of special interest not considered elsewhere in the curriculum. Subjects vary from year to year. Prerequisites: vary with course material; consent of instructor. (On demand)
- 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, 122, STAT 200. (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 420 Personality** (3)
Personality theories from the time of Freud through the present emphasizing the development and functioning of the normal personality. Pre-requisites: 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)

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. 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.

RADT 122 Radiologic Principles I (2)**RADT 122L Radiologic Principles I Laboratory (1)**

Fundamentals of radiography including production of x-rays and radiographs, equipment, accessory devices, exposure mathematics, radiation hazards, and protection. Technical and prime exposure factors are discussed and applied in the energized laboratory.

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.

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.

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.

RADT 132 Radiologic Principles II (2)**RADT 132L Radiologic Principles II Laboratory (1)**

Continuation of RADT 122 including x-ray film processing chemistry, manual and automatic processing, sensitometry, film artifacts, processor maintenance, and an awareness for quality assurance in radiology.

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 or radiologist.

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.

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 one hour per week of 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. Includes a detailed study of computer use in radiology.

- RADT 253 Clinical Experience IV** (10)
Continuation of RADT 243 in all phases of radiology. Includes one hour per week of film critique provided by the clinical instructor or radiologist.
- 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.
- RADT 263 Clinical Experience V** (10)
Continuation of RADT 253 in all phases of radiology. Includes one hour per week of film critique provided by the clinical instructor or radiologist.

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. Prerequisite: CISM 102 or consent of instructor. (Fall)
- RECR 390 Therapeutic Recreation** (3)
Therapeutic recreation in the United States today including therapeutic recreation services, rationale for therapeutic recreation programming as it relates to the provision of therapeutic recreation services in community, school, and institutional settings; introduces technical and theoretical information required to administer and program therapeutic recreation services. Prerequisite: RECR 210. (Fall)
- RECR 396 Special Topics** (1,2)
Material of special interest not considered elsewhere in the curriculum. Subjects vary from year to year. Prerequisites: vary with course material; consent of instructor. (On demand)
- 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. Prerequisite: 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)

Moderu 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 life-guard 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 495 Independent Study (1,2)

Individual study beyond the scope of the required curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog).

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, 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 210 Religion in the American Experience (3)

The role of religion and religious movements in the historical development of American civilization and culture. (On demand)

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. Prerequisite: SOCI 351 or PHIL 353 or consent of instructor. (Spring)

SOCI 396 Topics (1,2,3)

Material of special interest not considered elsewhere in the curriculum. Subjects vary from year to year. Prerequisites: vary with course material; consent of instructor. (On demand)

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: SOCO 260 or consent of instructor. (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. Prerequisite: 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 (1,2)

Individual study beyond the scope of the required curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog). (Fall/Spring)

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)

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 111 Introduction to Speech Pathology (3)

Speech pathology and audiology. Recommended for elementary education and early childhood education majors. (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 241 Oral Interpretation (3)

The reading aloud of prose, poetry, and essays with the intention of conveying the author's ideas to a listening audience. (On demand)

SPCH 242 Readers' Theatre (3)

Staging of a long work or several shorter works by the use of oral interpretation and a minimum of properties. Prerequisite: SPCH 241 or consent of instructor. (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. Prerequisite: upper division standing. (Alternate Spring)

SPCH 403 Teaching of Speech & 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. (Summer)

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. Prerequisite: 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 Statistical Applications in Social Studies and Psychology** (2)
Applied problems in social science, linear models, design of experiments, and sampling. Uses software such as MINITAB, and SPSS. Prerequisite: STAT 200 or 214. (On demand)
- STAT 494 Seminar** (1)
Discussions of specialized topics by students, faculty, or visiting professors. One one-hour meeting per week. (On demand)

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. Hours are arranged for the laboratory sessions. (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 Literature-Drama** (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)
- 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. (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 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: SPCII 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 Music Theatre** (3)
All phases of the Musical Theatre Art, including song analysis, the relationship of words to the music, and performance techniques. Prerequisite: 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. (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. Prerequisites: THEA 270, and audition. (Fall/Spring)
- 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 413 Creative Play Activities-Drama** (3)
Creative dramatics including advanced work in improvisation and the use of drama as a teaching tool. Designed for those concerned with drama as an art in children's basic education including recreation directors, elementary teachers, and those seeking recertification. Prerequisite: THEA 213 or consent of instructor. (Fall/Spring)
- THEA 414 Summer Theatre** (3)
See THEA 114.
- THEA 417, 418 Play Production** (1,1)
See THEA 117,118. (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. Prerequisites: 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. Prerequisites: THEA 451, 452 or consent of instructor. (On demand)
- THEA 495 Independent Study** (3)
Individual study beyond the scope of the existing curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog).

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 majors. (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 majors. MARK 231 recommended for baccalaureate students. Prerequisite: TRAV 101 or consent of instructor. (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 202 Management in the Travel Industry II** (3)
Principles, functions, skills, and applications of the professional approach to management. The course is designed specifically for managers from first-level supervision through middle management in the travel industry. (Fall)
- 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 majors. (Spring/on demand)
- TRAV 295 Independent Study** (1,2)
Individual study beyond the scope of the required curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog). Requires use of in-depth academic research and reporting methodology. A comprehensive proposal outlining the study and its justification must be prepared and an application completed at least three weeks prior to the end of the semester preceding the semester in which the student wishes to take the Independent Study. (Fall/Spring)
- TRAV 296 Topics** (1,2,3)
Material of special interest not considered elsewhere in the curriculum. Subjects vary from year to year. Prerequisites: vary with course material; consent of instructor. (On demand)
- 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 majors. Credit not available through competency or challenge. Prerequisite: TRAV 102, GPA of 2.00 or higher, or consent of instructor. (Summer)

Welding

School of Industry and Technology

- WELD 110 Welding Laboratory I** (8)
Safe use of equipment in shop practice: covers shielded metal arc welding on mild steel in all positions. Twelve hours 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 115 Applied Mathematics** (2)
Basic mathematics, fractions, decimals, percentages, and basic algebra as applied in industry. Two hours per week. Prerequisite: MATH 015 or equivalent. (Fall)

- WELD 117 Oxy-fuel Welding I** (2)
Shop practice and skill development in safe use of oxy-fuel cutting/welding 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. (On demand)
- WELD 118 Oxy-fuel Welding II** (2)
Continuation of WELD 117 with increased emphasis on shop practice in safe use of oxy-fuel cutting/welding equipment. Oxy fuel welding and brazing, both ferrous and non-ferrous, on both pipe and plate in all practical thicknesses. Prerequisites: WELD 117 or equivalent and consent of instructor. (On demand)
- WELD 120 Welding Laboratory II** (8)
Continuation of WELD 110. The skill of welding mild steel in all positions is refined. Twelve hours 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. Prerequisite: 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 I** (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, and vertical positions using 6010 and 6013; and oxy-fuel cutting, fusing, brazing and soldering. Four hours per week. (Fall and on demand)
- WELD 152 Industrial Welding II** (2)
Continuation of skill development begun in WELD 151. Instruction also covers low hydrogen electric welding with 7018 and learning overhead. Air arc, plasma arc, slice torch cutting, build up and hard surfacing are included. Four hours per week. Prerequisite/corequisite: WELD 151. (Spring and on demand)
- WELD 230 Welding Laboratory III** (8)
Continuation of WELD 120 emphasizing low-hydrogen electrode welding techniques. Twelve hours per week. Prerequisite: WELD 120 or consent of instructor. (Fall/Spring)
- WELD 240 Welding Laboratory IV** (8)
Continuation of WELD 230 emphasizing MIG, TIG, and pipe welding. Twelve hours per week. Prerequisite: WELD 230 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)
Individual study beyond the scope of the required curriculum. See index for "Independent Study" (under General Academic Regulations section of this catalog). Students must enter into an agreement for specialized training prior to registration. (On demand)

WELD 296 Topics

(1,2)

Material of special interest not considered elsewhere in the curriculum. Subjects vary from year to year. Prerequisites: vary with course material; consent of instructor. (On demand)

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, 115, 120, 121, 131, 141, 145, 230 or consent of instructor. (Fall/Spring/Summer)

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MESA STATE COLLEGE PERSONNEL

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- RAYMOND N. KIEFT (1989), Acting President; B.S., Calvin College; M.S., Colorado State University; Ed.D., University of Northern Colorado.
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- JAMES P. RYBAK, P.E. (1972), Acting 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.
- JAMES G. VANDERHYTE (1989), Vice President for Financial and Administrative Services; B.S., M.B.A., Southern Illinois University.
- BEVERLY J. MONDRAGON (1989), Assistant to the President.
- DUANE C. ANDERSON (1986), Director of Continuing Education; B.S. Ed., M.A., University of North Dakota, Ph.D., University of Oklahoma.
- ROBERT E. ANTHONY (1984), Coordinator of Intramural Sports and Recreational Services; B.S., M.S., Southern Illinois University.
- RONALD W. BRADLEY (1986), Director of Intensive English Program; M.A.T., School for International Training
- VELDA M. BAILEY (1982), Assistant Director of Continuing Education; A.A. Mesa Junior College; B.A., M.A., University of Northern Colorado.
- RONALD GRAY (1988), Director of Physical Plant; B.S., South Dakota School of Mines and Technology.
- CHARLES E. GREEN (1980), Assistant Vice President for Financial and Administrative Services; B.S., University of Missouri; M.A., University of Northern Colorado.
- JOHN W. (JAY) JEFFERSON (1967), Director of Athletics; B.A., M.A., Adams State College.
- JANEEN KAMMERER (1990), Controller; B.S., University of Colorado.
- JAMES K. KILEY (1986), Director of Computer Services; B.S., University of Phoenix.
- GERALD N. NOLAN (1984), Academic Computer Coordinator; B.A., Northern Illinois University; M.A., University of Oregon.
- ALLAN C. ORR (1984), Director of Budgeting and College Services; B.M.E., General Motors Institute; M.B.A., University of Michigan.

ANDREW J. RODRIGUEZ (1989), Director of Purchasing; B.S., University of Northern Colorado.

DOUGLAS G. TUCKER (1975), Director of Personnel and Payroll; B.A., M.B.A., Western State College.

SANDRA WYMORE (1986), Coordinator, Physically and Learning Disadvantaged; B.A., University of Denver

GAIL L. YOUNGQUIST (1967), Director of Tutorial Learning Center; B.A., University of Northern Colorado; M.A., Colorado State University.

Student Services

RICHARD E. BACA (1972), Acting Director, Academic Records and Student Life; B.S., University of Colorado; M.A., Ed.D., University of Northern Colorado.

TILMAN M. BISHOP (1962), Director of Student Services; B.A., M.A., University of Northern Colorado.

DANIEL DREVES (1988), Director of Housing; B.A., M.Ed., Colorado State University.

M. KATHLEEN JEFFERSON, Assistant Director of Housing.

PAUL JONES, (1986), Assistant Director of Admissions; B.S., M.S.S., Utah State University.

FRANK KELLER (1973), Acting Associate Vice President of Institutional Advancement and Student Affairs; B.A., Adams State College; M.A., University of Northern Colorado.

SUSAN M. MOORE (1982), Bookstore Manager; B.A., Chestnut Hill College.

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MARLA K. PEYTON (1986), Coordinator of Student Employment, Financial Aid Counselor; B.A., Mesa College; M.B.A., Western State College.

DOLORES PITMAN-GARCIA (1986), Assistant Director of Counseling Services; M.A., Adams State College.

GARY R. RATCLIFF (1987), Director of Public Information and Student Activities; B.S., M.Ed., University of Maryland

ANTHONY SKUSEVICH, (1989), Coordinator of Residence Life; B.S., University of Wisconsin; M.S., Kearney.

ROBERT P. STOKES (1970), Coordinator, 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.

BERNADETTE WEBER, (1989), Admissions Counselor; B.A., Mesa College.

Library Staff

BARBARA A. BORST (1981), Periodicals/ILL Librarian; B.A., Sterling College; M.L.S. Library Science, Indiana University.

ELIZABETH BRODAK (1989), Reference Librarian; B.A., Carthage College; M.L.S., University of Hawaii.

LYNN S. CONNAWAY (1987), Head of Technical Services and Cataloging; B.S., Edinboro State College; M.A., University of Arizona.

CHARLES R. HENDRICKSON (1967), Director of Media Services; B.A., M.A., Ed.D., University of Northern Colorado.

KATHLEEN R. TOWER (1972), Assistant Professor of Library Science, Special Collections/Government Documents Librarian; B.M.E., M.A., University of Denver.

+ Deans of Academic Schools

School of Business, Dale L. Dickson

School of Humanities and Fine Arts, Laurence W. Mazzeno (Acting Dean)

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- Department Chairs

Accounting and Business Computer Information Systems, David Rogers

Agriculture and Home Economics, Richard Moran (Acting Chair)

Art, Donald E. Meyers

Behavioral Science, Harry A. Tiemann

Biological Sciences, Gary McCallister

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Chemistry and Physics, Gordon Gilbert

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Industry and Technology, Arca Vocational School, Paul Wells

Industry and Technology, I.E.T.C., William T. Branton

Languages and Literature, Robert L. Johnson

Music, Monte Atkinson

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Nursing, Bachelor Degree, Judy Goodhart (Acting Chair)

Office Administration, Muriel L. Myers

Physical Education and Recreation, Susan Yeager

Social Science, Daniel Arosteguy

Theatre and Communications, Michael C. Gerlach

+ See individual listings under Instructional Personnel.

FACULTY

(Figures in parentheses indicate year of regular appointment to Mesa State College professional staff for half time service or more. Prior temporary or part-time service is not indicated.)

ARLYNN D. ANDERSON (1979), Professor of Applied Technology; Dean, School of Industry and Technology; Director of Vocational-Technical Education; B.S., M.Ed., Colorado State University; Ed.S., Michigan State University.

DANIEL J. AROSTEGUY (1976), Professor of Economics; Chair, Department of Social Science; B.S., M.S., University of Nevada-Reno; Ph.D., Colorado State University.

MONTE ATKINSON (1985), Assistant Professor of Music; Chair, Department of Music; A.S., Snow College, Utah; B.F.A., Utah State University; M.M., Ph.D., 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 College.

VIRGINIA L. BEEMER (1968), Professor of Education; 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), Associate 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.
- CHRISTIAN J. BUYS (1983), Professor of Psychology; B.A., Hope College; Ph.D., University of Colorado.
- WILLIAM T. BRANTON (1970), Assistant Professor of Applied Technology (Welding); Chair, Industry and Technology (J.E.T.C.); Certified Instructor, State Board for Community Colleges and Occupational Education.
- JAMES R. BROCK (1988), Assistant Professor of Engineering Technology; B.S., M.S., University of Illinois.
- CLIFFORD C. BRITTON (1964), Professor of Mathematics; B.A., Adams State College; M.A., San Diego State College.
- BRADLEY A. BUCHHOLZ (1987), Instructor of Applied Technology (Auto Body Repair); A.A.S., Mesa College.
- C. JAMES BUCKLEY, C.P.A. (1972), Professor of Accounting; B.A., Western State College; M.S., Colorado State University.
- 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.
- JAMES A. CHAMBERS (1989), Assistant Professor of Criminal Justice; B.A., M.D.A., Ph.D., Portland State University.
- LEWIS M. CHERE (1980), Associate Professor of History; B.A., Wilkes College; M.A., University of North Carolina; Ph.D., Washington State University.
- PHYLLIS L. CHOWDRY (1976), Professor of Biology; B.S., University of Denver; M.N.S., Arizona State University; D.A., University of Northern Colorado.
- CARRIE CLARK-SORENSEN (1986), Assistant Professor of Radiologic Technology; B.S., University of Nebraska.
- MARGARET ANN CONRAD (1989), Assistant Professor of Nursing; Chair, Department Nursing, ADN; B.S., California State University; M.S., University of California.
- ROBERT M. CORTESE (1980), Instructor of Physical Education/Head Football Coach; B.A., University of Colorado; M.A., University of Northern Colorado.
- DAVID M. COX (1981), Associate Professor of Theatre; B.A., Mesa 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; Dean, School of Business; B.S.B.A., University of Denver; M.Ed., Colorado State University; Ed.D., University of Northern Colorado.
- DICKSON, SUSAN (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), Associate Professor of Computer Science; Ph.D., University of Roorkee (India).
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- KAREN E. FORD (1984), Associate Professor of Psychology; B.A., Mississippi College; M.A., Northeast Louisiana; Ph.D., University of Mississippi.
- MARCIA FORREST (1980), Associate Professor of Nursing; M.S.N., University of Miami; Ph.D., University of Texas.
- DELL R. FOUTZ (1972), Professor 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.
- 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; Chair, Department of Theatre and Communications; B.S., Fairleigh Dickinson University; M.A., Ph.D., University of Michigan.
- GORDON GILBERT (1980), Professor of Physics; Chair, Department of Chemistry and Physics; B.S., M.S., Ph.D., Massachusetts Institute of Technology.
- EDWARD GOODWIN (1984), Associate Professor of Applied Technology (Electronics); B.Ed., M.Ed., Colorado State University.
- 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.
- RAYMOND GREB (1983), Associate Professor Applied Technology (Machine and Manufacturing Trades); 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; B.A., Colorado State University; M.F.A., University of Arizona.
- EDWIN C. HAWKINS (1963), Professor of Mathematics; Chair, Department of Computer Science, Mathematics, and Engineering; B.A., M.A., University of Northern Colorado.
- MYRA D. HEINRICH (1983), Associate 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; 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 Science and Mathematics; B.A., University of Colorado; M.S., University of Utah; Ph.D., University of Colorado.
- ROBERT L. JOHNSON (1962), Professor of English; Chair, Department of Languages and Literature; B.A., M.A., Western State College; Ph.D., University of Northern Colorado.
- JAMES O.B. KEENER (1981), Associate Professor of Mass Communications; B.S., University of Southern Colorado; M.A., Bowling Green State University.
- 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/Women's Basketball Coach; B.A., University of Northern Colorado; M.S., Fort Hays State University.
- WILLIAM KRALICEK (1984), Instructor in Physical Education/Head Wrestling Coach; B.A., University of Colorado; M.A., Western State College.
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- 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.
- JOHN T. MARSHALL (1982), Professor of Physics; B.S., University of New Mexico; M.S., Ph.D., Washington University.
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- DONALD E. MEYERS (1962), Associate Professor of Art; Chair, Department of Art; B.F.A., University of Denver; M.A., University of Northern Colorado.
- PRASANTA K. MISRA (1988), Professor of Physics; B.S., M.S., Utkal University, India; Ph.D. Tufts University.
- JOHN A. MOORE (1987), Assistant Professor of Business Administration; B.A., University of Dayton; J.D., Gonzaga University.
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- LOUIS G. MORTON (1966), Professor of Political Science; Director of Selected Studies; B.S., University of Missouri-Columbia; M.A., Ed.S., Western State College.
- ELIZABETH MUSTEE, R.N. (1975), Professor of Nursing; B.S., St. Mary's College; M.S., Boston University.
- MURIEL L. MYERS (1970), Professor of Office Administration; Chair, Department of Office Administration; B.A., Western State College; M.Ed., Colorado State University; Ph.D., University of Colorado.
- 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.
- 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 (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.
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- JACK E. ROADIFER (1966), Professor of Geology; Chair, Department 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.
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- JAMES P. RYBAK, P.E. (1972), Professor of Engineering; Acting 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.
- CONNER W. SHEPHERD (1978), Associate Professor of Recreation; B.A., Eastern Washington State University; M.A., Washington State University; Ph.D., University of Utah.
- 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), Associate 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.
- CLARICE S. TAYLOR (1977), Assistant Professor of Home Economics; B.S., Iowa State University; M.S., 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; Chair, Department of Behavioral 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.
- C. E. TOOKER (1966), Associate Professor of Physical Education; B.A., University of Northern Colorado; M.A., Adams State College.
- MARY A. TURLEY (1988), Professor of Nursing; Dean, School of Nursing and Allied Health; B.S.N., Case Western Reserve; M.Ed., Cleveland State; Ph.D., University of Texas.
- ERIC T. VAN CAMP (1989), Assistant Professor of Music and Music Theatre; B.Mus.Ed., Central Michigan University; M.Mus., D.Mus.A., University of Colorado.

- PAUL G. WELLS (1978), Assistant Professor of Applied Technology (Auto Body Repair); Chair, Industry and Technology (Area Vocational School); B.A., University of Redlands.
- JERRY D. WETHINGTON (1979), Associate Professor of Computer Science; B.S., University of New Mexico; M.S., Stanford University.
- BYRON E. WIEHE (1974), Assistant Professor of Physical Education; Head Baseball Coach; B.A., M.A., Adams State College.
- CLIFTON M. WIGNALL (1976), Associate 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; Chair, Department of Physical Education and Recreation; B.A., Luther College; M.S., South Dakota State; P.E.D., Indiana University.
- DALE R. YOCUM (1988), Associate Professor of Nursing; B.S.N., Idaho State University; M.S.N., University of Kentucky.
- 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 Office Administration; B.A., M.S., University of Wyoming; Ph.D., Colorado State University.

EMERITUS FACULTY

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 ROBERT D. YOUNGQUIST, B.S., B.A., M.Ed., Associate Professor of Business (1987)

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 KENNETH E. BOULDING (1984), Wayne N. Aspinall Professor of Economics; B.A., M.A., Oxford (England).
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 VIVIAN BROWN (1982), Walter Walker Professor in Theatre.
 RICHARD BULL (1983), Walter Walker Professor in Theatre.

- EMMANUEL FELDMAN (1987), Cosmicos Professor of Religious Studies; B.S., M.A., Johns Hopkins University; Ph.D., Emory University.
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- JIM (BLOSZIES) HARDIE (1984), Walter Walker Professor in Theatre.
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- WILLIAM G. ROBBINS (1990), Wayne N. Aspinall Professor of History; B.S., Western Connecticut; M.A., Ph.D., University of Oregon.
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- 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.

COMPLETE DISCIPLINE INDEX

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Physics	PHYS	210	NS&M
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Psychological Counseling and Guidance	PCGU	205	S&BS
Psychology	PSYC	214	S&BS
Radiologic Technology	RADT	216	N
Recreation and Leisure	RECR	217	S&BS
Social Science	SOCI	218	S&BS
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*School

B -Business

H&FA -Humanities and Fine Arts

I&T -Industry and Technology

NS&M -Natural Sciences and Mathematics

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*Also see Schools and Departments

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, dental assisting, 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 shops, training areas and classrooms for heavy equipment/diesel mechanics. The IETC also houses shops, classrooms, and training areas for oxyacetylene, electric arc, and specialty welding training programs. In addition, the electric lineman training center with classrooms together with overhead and underground transmission training areas, is located at this site as is the College experimental farm. 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.

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), provides 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 house-keeping facilities.

The W.W. Campbell College Center (1962 remodeled 1980-81) contains a cafeteria, bookstore, art gallery, study and recreational lounges for students and faculty, office and conference facilities for student leaders, a snack bar, and game 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.

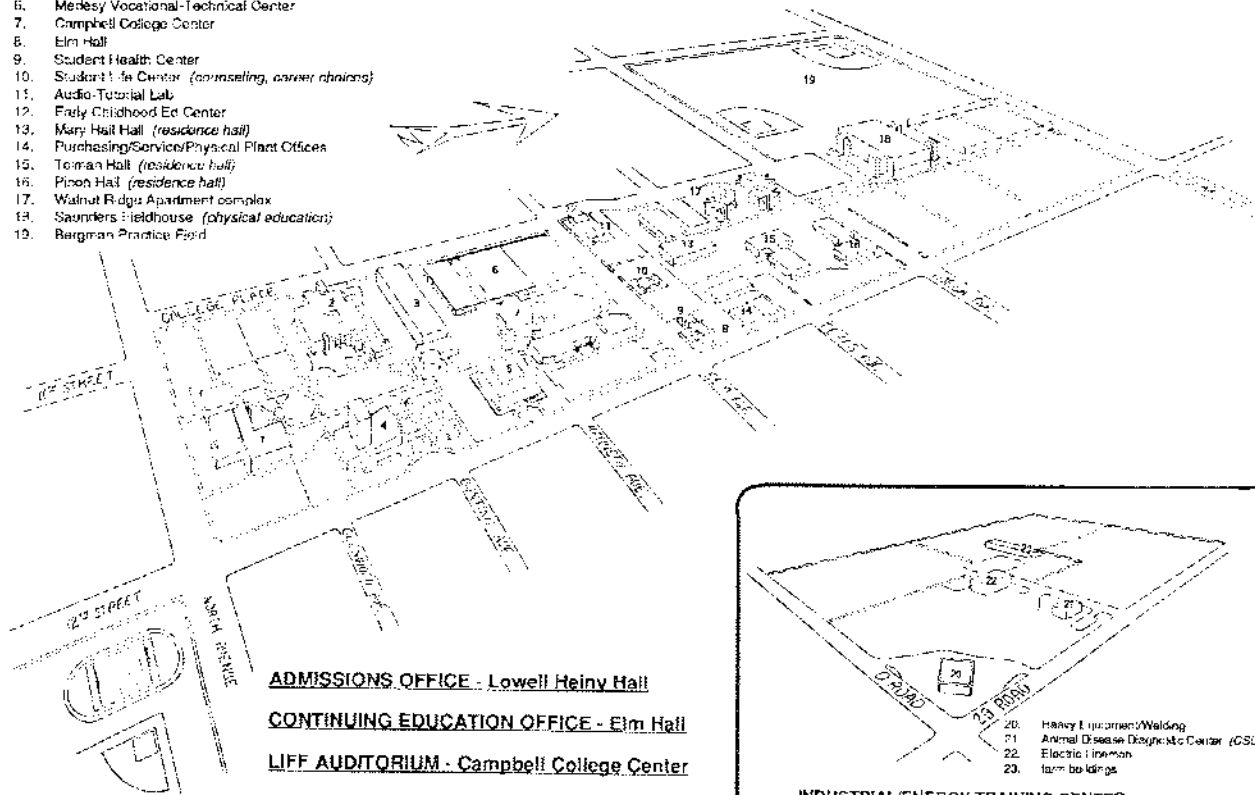
The Student Life Center provides a central location for counseling, career-development, employment, and placement services.

The Audio-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.

MAIN CAMPUS:

1. Houston Hall (*business, social sciences*)
2. Library
3. Wubben Hall (*math, sciences*)
4. Walter Walker Fine Arts Center (*art, speech, theatre, music*)
5. Lowell Heiny Hall (*administrative/faculty offices*)
6. Mercedes Vocational-Technical Center
7. Campbell College Center
8. Elm Hall
9. Student Health Center
10. Student Life Center (*counseling, career choices*)
11. Audio-Tutorial Lab
12. Early Childhood Ed Center
13. Mary Hall Hall (*residence hall*)
14. Purchasing/Service/Physical Plant Offices
15. Tomlin Hall (*residence hall*)
16. Pison Hall (*residence hall*)
17. Walnut Ridge Apartment complex
18. Sauniers Fieldhouse (*physical education*)
19. Bergman Practice Field



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