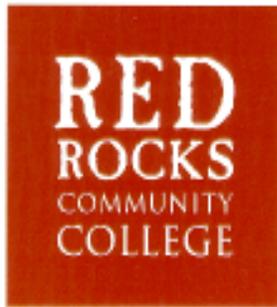


RED ROCKS COMMUNITY COLLEGE

1997 ~ C A T A L O G ~ 1998



*Where Learning  
Is For Life*

# Red Rocks Community College

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## 1997-98 Catalog

**CollegeSource**

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# *Learning for Life*

Dear Student,

At Red Rocks Community College, our mission is to support you as a lifelong learner and to help you add value to the community in which you live and work. Our wide range of services and programs can assist you, regardless of your stage in life.

Whether you are a first-time college student who's planning to transfer core credits from Red Rocks to a four-year college or university; an individual eager to begin a new career; or a working adult who needs to "keep current," we have classes and programs that will give you state-of-the-practice skills and information that will help you succeed. We support you with special services, such as child care, financial aid and tutoring. Your fellow Red Rocks students will help too: We're told the friendships that develop here are an important part of what makes the Red Rocks experience so special and unique.

**Who are our students?** We serve 13,000 each year. Thirty-nine percent are under age 25; 37 percent are between 25 and 40; and 24 percent are over the age of 40. About half attend daytime classes, 28 percent attend evening classes, and the rest attend on weekends or electronically. Fifty-nine percent are studying business—including computers—and social sciences. The rest are studying scientific or technical subjects. Fifteen percent have already completed at least a bachelor's degree.

**What do our students learn?** First, they learn about learning. Did you know each of us has a personal learning style that needs to be taken into account by our teachers? At Red Rocks, this fact is fundamental to our instruction. Next, our students choose from among more than 100 dynamic programs. These, such as the award-winning Fire Science Technology program and our standing-room-only Multimedia Design and Production programs, are key sources of employees for the area's finest businesses. They're dynamic programs, too—always in a state of renewal and enhancement.

**Where do our students learn?** In state-of-the-art facilities on our main campus that include "smart" classrooms, brand-new science laboratories and a warm, inviting student center and fitness facilities to exercise your body as well as your mind. We have satellite centers in Conifer and Arvada. And if you can't get to any of these sites, we use technology to bring our instructors to you—in your home, in your office or even on your high school campus.

Welcome to Red Rocks Community College—where learning is for your life.

Sincerely,

Dorothy Horrell, Ph.D.  
President

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# College Calendar

## Fall Sessions 1997: August - December

June 23 .....	Registration Begins
August 25 .....	Lakewood and Mountain Center Classes Begin
August 30-September 1 .....	Labor Day Weekend (All Campuses Closed)
September 2 .....	Arvada Classes Begin
September 5 .....	Weekend Classes Begin
September 10 .....	Application Deadline for Fall Graduation
October 21 .....	No Classes; Faculty and Staff Development Day
November 26-30 .....	No Classes; Fall Break
November 27 .....	Thanksgiving Holiday (All Campuses Closed)
December 14 .....	Fall Sessions End
December 25-January 1 .....	Winter Break (All Campuses Closed)

## Spring Sessions 1998: January - May

December 1 .....	Registration Begins
January 20 .....	Lakewood and Mountain Center Classes Begin
January 26 .....	Arvada Classes Begin
February 5 .....	Application Deadline for Spring Graduation
March 16-20 .....	No Classes; Spring Break
April 11-12 .....	All Campuses Closed; Easter Weekend
April 14 .....	No Classes; All College Development Day
May 12 .....	Spring Sessions End
May 15 .....	Commencement

### PLEASE NOTE:

- Courses begin and end throughout each session and may have different starting and ending dates. Please refer to the current **Class Planning Schedule** for specific dates. The **Class Planning Schedule** is available at all campus locations and on the world wide web at [www.rrcc.ccoes.edu](http://www.rrcc.ccoes.edu).
- In addition to the courses appearing in the **Class Planning Schedule**, other specialized courses and programs are available throughout the year. Beginning and ending dates may vary. Please refer to appropriate literature for specific offerings and dates.
- Although this catalog has been prepared on the basis of the best information available at the time, the information it contains is subject to change without notice or obligation.

Red Rocks Community College  
13300 West Sixth Avenue, Lakewood,  
Colorado 80228-1255  
(303) 914-6600  
[www.rrcc.ccoes.edu](http://www.rrcc.ccoes.edu)

### Accredited by

The Commission on Institutions of Higher  
Education of the  
North Central Association of Colleges and  
Schools  
30 North LaSalle Street, Suite 2400  
Chicago, IL 60602-2504

### Programs approved by

State Board for Community Colleges and  
Occupational Education  
1391 North Speer Boulevard, Suite 600  
Denver, CO 80204

*This catalog is effective beginning  
Fall Semester 1997.*

# General Information

## Mission

The mission of Red Rocks Community College is to develop and support lifelong learners so that they may live fuller lives and add value to the communities in which they live and work.

## Purpose

The purpose of Red Rocks Community College is to give students opportunities for lifelong learning as a foundation for full participation in the global community. To do this, we provide:

- The first two years of baccalaureate education for transfer to four-year colleges and universities.
- Occupational and business education designed to meet individual, local and regional employer needs.
- Customized training and consulting for the public and private sector.
- Basic skills education to give under-prepared students access to post-secondary education, entry-level employment, or job upgrades.
- Student support services ranging from financial aid to child care that assist students with diverse backgrounds, needs and educational objectives.
- Community services including cultural programs, non-credit offerings, and forums designed to encourage diversity of thought about public issues.

## Values

Red Rocks Community College celebrates learning as the process that changes and improves lives. Our students benefit from the friendly, caring and supportive environment that is created by our knowledgeable, dedicated and helpful faculty and staff. Our respect for the diverse individuals and communities we serve nurtures the special spirit of Red Rocks Community College. By setting standards of excellence for ourselves and by placing a high value on integrity, honesty, teamwork, communication and innovation, we assist others in realizing their greatest potential.

## Vision

As a leader in learning, Red Rocks Community College will be a valued partner in transforming lives and building communities.

## Campus Locations

**Lakewood Campus**  
13300 West Sixth Avenue  
Lakewood, CO 80228-1255  
Phone: (303) 914-6600

Red Rocks Community College was established in 1969 as a new campus of the Community College of Denver to the west. It moved from a temporary site on West Quail Street in Lakewood to the present 140 acre main campus in phases from 1971-1975. On July 1, 1983, the Red Rocks Campus became Red Rocks Community College—its own entity within the Colorado State system. In 1990, campuses were established in Arvada and Conifer to meet growing demands for Red Rocks' services.

Today, the college serves more than 13,000 students from throughout Colorado, the U.S. and around the world annually. The typical student is 31 years old, working and attending school part-time. More than 500 courses and 100 different programs and complete scheduling flexibility meet a variety of educational goals, including professional certification, a transferrable two-year degree and updated job skills.

**Arvada Campus**  
Ridge Home Site  
10185 Ridge Road  
Arvada, CO 80033  
Phone: (303) 420-9550  
FAX: (303) 420-9572

Established in 1990, the Arvada Campus is known for its innovative schedule options, and friendly atmosphere. A variety of services are offered here, including general classrooms, a computer classroom, an open Computer Lab, a Learning Resource Center with assessment testing, Social Sciences Self-Paced Lab, Math Lab, Writing Lab, textbook sales and an Advising Center.

**Mountain Center**  
10441 County Hwy 73  
Conifer, CO 80433  
Phone: (303) 982-5233  
FAX: (303) 982-5232

Established in 1990, the Mountain Center houses general purpose classrooms, a Computer Lab, a self-paced Math and Social Science Center and a Writing Lab. Services include assessment testing, advising, financial aid information, registration and on-site textbook sales.

# Admissions and Advising Information

## Admissions

Red Rocks Community College welcomes anyone who can benefit from our instructional programs and courses, including high school graduates and non-graduates 18-years-old or older. Admission does not assure acceptance into a particular course or program. Some programs have limited space and special admissions procedures; applicants for these programs must contact the particular division. Although you may enroll in any course in which you have a reasonable expectation for completion, if you have a learning deficiency, you may be requested to enroll in courses designed to correct it.

The college may review your enrollment if you do not appear to be profiting from instruction or if your enrollment poses a hazard to yourself or others. Questions of admissibility are reviewed by the Vice President of Learning Design and Support Services and the President who will make the final decision. Admission based on false statements or documents may be reversed and credits completed under these circumstances may be revoked.

## Admissions Procedures

1. Submit an "Application for Admission" form (**available in Admissions**) at **(303) 914-6354**, including the declaration of program, major or area of study. If you are undecided, contact the Admissions and Counseling Center at **(303) 914-6255**.
2. Take a basic skills assessment test before registration to assist in making appropriate educational plans. Information: **(303) 914-6720**
3. See an academic advisor and complete the registration process.

## Advising

After completing the basic skills assessment required for admission, you are encouraged to obtain counseling for help with selecting and scheduling courses; determining prerequisites; faculty assistance for specific program information; graduation requirement evaluation and appropriate application of assessment test results. Advisors can also help with specific program planning if you intend to transfer to a four year college or university. **(See Transfer Agreements with Four-Year Colleges & Universities.)** Information: **(303) 914-6255**

## High School Students

High school students may earn Red Rocks credits and high school credits at the same time. To enroll at Red Rocks, you must follow the admissions procedures described above, and:

1. See your high school counselor to make arrangements for certification of credit.
2. Submit a special "Underage Student Application" form, available in Admissions, with your assessment test scores.

Information: **(303) 914-6234**

**(Please see Warren Tech, page 10.)**

## Inter-Institutional Registration

Admissions can assist you with concurrent registration at the University of Colorado at Denver or Metropolitan State College of Denver. International students must meet the host institution's English language proficiency requirements. Information: **(303) 914-6356**

## International Students

If you are an international student, you must submit the following documents:

1. Application for Admission
2. One certified English translation of an official high school, college or equivalent transcript
3. A statement of financial resources sufficient for tuition and living expenses while in the United States
4. A minimum score of 475 on the TOEFL for college-level classes (*TOEFL preparation is offered through the Learning and Resource Center.*)

If you do not meet the required minimum TOEFL score, you may be admitted on a one-semester provisional basis and may enroll in some college-level classes based on assessment test scores.

5. Proof of Health Insurance  
Every semester you are automatically billed for health insurance coverage unless you are able to provide proof of health insurance to an International Student Advisor within seven calendar days of registration.
6. Copy of form I-20 I.D. if transferring from a previous school

Form I-20A will be issued to you when all of the above documents are on file in Admissions/Advising and a decision to admit you is made. Please allow sufficient time to gather and submit all required documentation so that admittance may be determined prior to the beginning of the session. You will not be admitted to the College after the 5th day of the session. International students are considered out-of-state (non-resident) for tuition purposes. Information: **(303) 914-6538** or **(303) 914-6315**

*International students are not admitted after the 5th day of the session.*

International students must also comply with the following:

1. The ASSET test is required for all International students (**including visiting students**) are required to follow the placement recommendations indicated as a result of this test.
2. International students are expected to comply with all immigration requirements.  
U.S. Immigration and Naturalization Service Regulations require that International students on F-1 visas carry and complete a full course of study (**minimum of 12 credit hours per semester**) and that they complete their educational objectives within a reasonable period of time.

Unauthorized courses will not be recognized by Red Rocks. International students from other colleges pursuing course work at Red Rocks must provide authorization from their home campus in addition to an "Application for Admission" prior to being admitted to Red Rocks.

3. International students are considered out-of-state (*non-residents*) for tuition purposes.

Contact International Student Advisors in the Admissions and Counseling Center at **(303) 914-6538** or **(303) 914-6315** for information.

## Career Planning and Workplace Experience

If you are planning for your first career, a midcourse career change, or want to enhance your existing job skills, Red Rocks Career Development specialists can help. Using career and interest inventories and computerized information, they can assist you in selecting what you need from among hundreds of options. They can also help you take advantage of Red Rocks' Career Development Seminar and the Colorado Career Information System (COGIS). Finally, Career Development specialists can help with referrals through consultation with faculty, staff, community resources, as well as other colleges and universities. Information: (303) 914-6255 or (303) 914-6258

## Readmission of Former Students

If you are returning to Red Rocks after an absence of more than one year, you must apply for readmission. If you have earned credit at another college in the interim and **are pursuing a degree or certificate**, you must also submit a transcript. Subsequent registration is contingent upon receipt of all required documents, which become property of the college.

## Transcripts

If you need your Red Rocks transcripts forwarded, a "Transcript Request" form is available in Admissions. Transcripts will not be provided for students who have not fulfilled all financial obligations to the college. Information: (303) 914-6352

## Transfer of Credits

**If you are pursuing a degree or certificate** and wish previous college credits to be considered for transfer, submit official transcripts to Student Records no later than the semester preceding graduation. If you are a veteran using V.A. benefits you must submit transcripts of all previous post-secondary education and training within 30 days after the beginning of your first class. Information: (303) 914-6355

1. Initial transcript evaluation is done in Student Records.
2. Grade point average (GPA) from transfer institutions is not calculated into the Red Rocks Community College GPA.
3. The college reserves the right to validate and examine all credits to determine obsolescence of content. In the event that course work is found to be obsolete, you may be required to update the credit.

4. The college allows students to challenge courses by taking special exams and/or earning credit for prior learning. Contact the Learning and Resource Center (LARC) for more information at (303) 914-6700.
5. The college will accept transfer credit only from post-secondary institutions accredited by one of the six regional accrediting associations. Credits earned by a student enrolled in a Colorado community college which are applicable to a specific AAS degree or occupational certificate shall be accepted as meeting degree or certificate requirements in an equivalent program.

## Credit Evaluation from Foreign Countries

Credits earned for study outside the U.S. must be evaluated by a foreign student advisor after you have enrolled at Red Rocks Community College. Two copies of the foreign country transcript must be provided; one original untranslated copy (with official documentation), and one certified English translation. You may also have an outside agency complete the evaluation and provide the required documentation with prior approval from the Red Rocks foreign student advisor.



# Tuition and Financial Aid

## Tuition and Fees

Tuition rates are set annually by the State Board for Community Colleges and Occupational Education. In addition to tuition, there is a non-refundable registration fee, a parking/student fee and a Student Center fee. For current deadlines and methods of payment, consult the latest **Class Planning Schedule**.

## Non-Resident Students

For tuition purposes, Colorado law determines whether a student is classified as in-state (**resident**) or out-of-state (**non-resident**). Your initial classification is based on information supplied on the "Application for Admission".

To change a non-resident to resident status, obtain a petition form for in-state status from Admissions. A copy of the regulations governing residency classification is a part of the petition. Deadlines for submission of the petition are published each session. Petitions received after the deadline will not be considered until the following session.

Changes in classification become effective at the time of your next registration. The final decision regarding tuition status is determined by the Vice President of Learning Design and Support Services.

## Senior Citizens Tuition

In-state students over the age of 60 may be eligible for a one-half tuition grant for courses taken for credit. Complete the "Senior Citizens Grant Program" form available in the Financial Aid Office. All fees will be assessed.

## Financial Obligations of Students

Payments for tuition, fees and materials are due on the specified date published in the **Class Planning Schedule** or at the time the obligations are incurred. You are not considered officially registered until tuition and fees are paid. If you are in any way financially obligated to the college or have failed to account for college property in your possession, you may be denied a transcript and registration for subsequent sessions until you have made a satisfactory arrangement with the college.

## Financial Aid

About one-third of Red Rocks students benefit from some type of financial aid each year. Four types are available. Scholarships are generally based on academic performance, accomplishments and need. Grants are federal and state programs based on need. Neither scholarships nor grants require repayment. Loans provide funds while you are attending school. Work-study agreements allow you to work for the college while you are enrolled. The Financial Aid Office (303) 914-6256 can provide details and application forms for the following:

- **Scholarships:** Colorado Scholars
- **Grants:** Federal Pell Grants, Colorado State Grant, Colorado State Incentive Grant, Federal Supplemental Educational Opportunity Grant; Colorado Diversity Grant, Colorado Part-Time Grant
- **Loans:** Federal Stafford Student Loans, Federal Parent Loan (*PLUS*)
- **Self-Help:** Federal and Colorado Work Study Program

Once the application for financial aid has been completed and submitted, your request takes approximately 12 to 14 weeks to process. Although the application for financial aid may be submitted throughout the year, "**priority dates**" have been established to assure the availability of funding.

### Priority Dates

To Receive Aid For:	Apply By:
Fall 1997	May 1, 1997
Spring 1998	October 1, 1997
Summer 1998	March 1, 1998

## Red Rocks Community College Foundation

Scholarships in varying amounts for the fall and spring sessions are available through the Red Rocks Community College Foundation. For information or an application, please call (303) 914-6425.

Resident						Non-Resident					
Credits	Estimated Tuition*	Registration Fee	Student Fees**	Technology Fee***	Total	Credits	Estimated Tuition*	Registration Fee	Student Fees**	Technology Fee***	Total
1	\$ 54.30	\$ 9.00	\$7.30	\$2.00	\$ 72.60	1	\$ 252.25	\$ 9.00	\$7.30	\$2.00	\$ 270.55
2	108.60	9.00	14.60	4.00	136.20	2	504.50	9.00	14.60	4.00	532.10
3	162.90	9.00	21.90	6.00	199.80	3	756.75	9.00	21.90	6.00	793.65
4	217.20	9.00	29.20	8.00	263.40	4	1,009.00	9.00	29.20	8.00	1,055.20
5	271.50	9.00	36.50	10.00	327.00	5	1,261.25	9.00	36.50	10.00	1,316.75
6	325.80	9.00	43.80	12.00	390.60	6	1,513.50	9.00	43.80	12.00	1,578.30
7	380.10	9.00	51.10	14.00	454.20	7	1,765.75	9.00	51.10	14.00	1,839.85
8	434.40	9.00	58.40	16.00	517.80	8	2,018.00	9.00	58.40	16.00	2,101.40
9	488.70	9.00	65.70	18.00	581.40	9	2,270.25	9.00	65.70	18.00	2,362.95
10	543.00	9.00	73.00	20.00	645.00	10	2,522.50	9.00	73.00	20.00	2,624.50
11	597.30	9.00	80.30	22.00	708.60	11	2,774.75	9.00	80.30	22.50	2,886.05
12	651.60	9.00	87.60	24.00	772.20	12	3,027.00	9.00	87.60	24.00	3,147.60
13	705.90	9.00	87.60	26.00	828.50	13	3,279.25	9.00	87.60	26.00	3,401.85
14	760.20	9.00	87.60	28.00	884.80	14	3,531.50	9.00	87.60	28.00	3,656.10
15	814.50	9.00	87.60	30.00	941.10	15	3,783.75	9.00	87.60	30.00	3,910.35
Overload charge of \$54.30 per credit hour over 15 credits.						Overload charge of \$252.25 per credit hour over 15 credits.					
Charges for partial credits:						Charges for partial credits:					
0.5	27.15	9.00	3.65	1.00	40.80	0.5	126.13	9.00	3.65	1.00	139.78
1.33	72.22	9.00	9.71	2.66	93.59	1.33	334.49	9.00	9.71	2.66	356.86
2.67	144.98	9.00	19.49	5.34	178.81	2.67	673.51	9.00	19.49	5.34	707.34

\*Subject to change. At press time, the SBCCOE has not determined what the tuition rates will be for the Fall 1997 semester. The amounts presented here are estimates.  
 \*\*Student Fees of \$7.30 per credit hour include: Student Activity Fee—\$4.00, Student Center Fee—\$2.50, Parking Fee—\$0.80, Total—\$7.30  
 \*\*\*For Fall 1997, a Technology Fee may be charged at all community colleges. The college anticipates that this new fee may be \$2.00 per credit hour, if imposed.

# Learning and Resource Center (LARC)

Combining one-on-one instruction with the latest in state-of-the-art technology, the LARC offers myriad services in one convenient place. You can take advantage of the LARC's many self-paced courses in math, English, computers and social sciences, as well as access a variety of learning tools in the friendly, comfortable environment that the LARC offers you. These tools include CD-ROMs and on-line computer services; the library and its extensive resources; tutoring in a variety of subjects, including writing; assessment and placement testing to see what classes are right for you; services for people with disabilities; weekly learning seminars; and much more.

Information: (303) 914-6700

## Assessment

### Credit for Prior Learning

If you are currently enrolled, you may receive academic credit for education you have attained through earlier schooling, work, experiential learning or other non-traditional means, as long as it is comparable to courses offered at Red Rocks and related to your current program.

- **CLEP** (*College Level Examination Program*)
- **Challenge Exams**
- **Portfolio** (*Documentation of past learning*)

### Other Tests Available:

- **ACT** (*College Entrance Exam*)
- **ASSET, COMPASS** (*Red Rocks assessment tests*)
- **Authorized Prometric Testing Center**  
Computerized certification and license testing for software publishers, state and federal governments and educational entrance exams.
- **C-HORBET** (*Computerized Health Occupations Test*)
- **Colorado Vocational Educator Test**
- **FAA, FCC** licensing tests
- **GATB** (*General Aptitude Test Battery for Jefferson County referrals*)
- **Oral English Proficiency Test** (*Colorado Educator License Test*)
- **TOEFL** (*Test of English as a Foreign Language*)

## Computer Access

The LARC provides adaptive programs, equipment and training for students with disabilities. Through course offerings such as adaptive word processing and adaptive spreadsheets, students learn to use speech synthesizers, screen readers, screen magnifiers voice input systems, Grammatik and on-line dictionaries.

## Learning Development

The LARC offers developmental English and math, as well as reading, vocabulary, spelling and study skills classes. Weekly seminars on learning styles, note taking, test anxiety, memory techniques and other topics will help you with any class you are taking.

Preparatory classes are offered for students studying to take the GED, ACT, SAT, GRE or PLACE tests. Practice testing for the General Education Diploma (*GED*) exam is available at no cost. ESL (*English as a Second Language*) and TOEFL (*Test of English as a Foreign Language*) classes are offered and combine classroom learning with individual study of videotapes, audio tapes and CD-ROM tutorials.

## Library

The library offers extensive print, audiovisual and electronic information services. CARL, the library's on-line catalog, offers access to the Red Rocks catalog, to the catalogs of many area libraries and to full-text articles from on or off campus. CD-ROMS provide thousands of full-text articles from major newspapers, magazines and journals. The library's video collection provides an alternative means of learning about subjects taught in Red Rocks classes and the 50,000- volume book collection supports more traditional research. Library Internet access opens the World Wide Web and Gopher systems to the Red Rocks community, while Interlibrary Loan lets you borrow materials from virtually any library in the world.

## Services for Special Populations

This service of the LARC provides advocacy, assessment, direction, learning skills and school-to-employment transitioning for individuals with physical or learning disabilities. Resources include Computer Access (*described above*) and individualized assistance with advising, vocational assessment, career planning and instructional support.

Tutorial services are available for occupational students having difficulty with their classes and for transfer majors whose grades fall below average in a selected content area. Free tutoring and vocational assessment are also provided to students who are Applied Science majors.

# Additional Learning Opportunities

Red Rocks recognizes that today's students lead busy lives that require juggling home, work, family and community responsibilities as well as the need to meet educational goals. The college offers a variety of learning innovations that make our offerings available to you 24 hours a day, 365 days per year.

## Arranged Courses

You can work with your instructors to schedule course times, days and locations to meet your individual needs.

## Independent Study

Most areas of study at Red Rocks offer opportunities to engage in intensive study and/or research on a topic under the direction of a qualified faculty member. Independent study course content, credit and contact hours are determined jointly by you, the appropriate Instructional Vice President and the instructor, whose permission is required prior to register. Independent Study may be taken an unlimited number of times, but no more than six semester credits may be applied to any Associate Degree program.

## Live Education Transmission (LET)

Distance education technology brings two-way, interactive classes from Red Rocks' Lakewood Campus to local sites in Bailey, Idaho Springs and Black Hawk. See, hear and talk with the instructor and students in other locations for lively exchanges using the latest information-age tools. Information: **(303) 914-6700**

## Self-Paced Study

Self-paced courses are available on the Lakewood, Arvada and Conifer campuses. The objectives and content of self-paced courses are the same as those of classroom courses and are accredited and transferrable. Attend an orientation at one of the three campuses; then complete the course work at your own pace, on your own time, using textbooks, study guides and other resources. Take exams at your local site. Self-paced courses are open entry (*except for ENG courses*); you may register at any time and have 15 weeks to complete the course work. Information: **(303) 914-6700**

## Writing Centers

Experts are available to assist you with your writing skills by identifying problem areas and providing one-on-one instruction. They will teach you to generate, organize and develop ideas; revise and edit with confidence; and handle issues of format and documentation.

## Self-Paced CD-ROM Courses

If you have some background in computer applications, consider Microsoft Office Suite self-paced CD-ROM courses on the Lakewood Campus. After attending an orientation with the instructor, you check out a CD-ROM disk to learn at your own pace and on your own time. Since CD-ROM technology allows random access, you may spend more or less time on a topic as needed. Testing is completed on-line. You may meet with the instructor in person, via e-mail or in regularly scheduled "chat rooms" on-line. Information: **(303) 914-6700**

## Telecourses

Telecourses are based on a series of professionally-produced television programs developed by professional instructional design specialists and college faculty. Videos may be viewed or taped at home from KRMA-TV or viewed or checked out from the library on the Lakewood or Conifer Campus. Work with coordinated print materials (*textbook, supplementary readings, study guides etc.*). Faculty provide orientation, optional review/discussion sessions and individual attention on the Lakewood Campus or by phone. Exams are taken at any of our three campuses. Information: **(303) 914-6700**

## Weekend College™

Red Rocks' Weekend College™ has grown in response to the educational needs of working adults. The focus of Weekend College™ is to provide classes that allow you to work and go to school at the same time. The complete Associate of Arts Transfer Degree and the Associate of Arts with an Emphasis in Business degree are available. Either degree may be completed within two years by attending class just on the weekend. Classes meet for the same number of hours as traditional classes meet. Class formats differ according to discipline. In general, classes run for three, six, or nine-week blocks. Many elective courses and a number of other classes are also offered. You may choose to get your degree by taking weekend classes only, or by combining weekend classes and other classes. The Weekend College™ operates year round, January through December. Classes begin every three weeks. Information: **(303) 914-6535**

## Colorado Environmental Safety Training Center

The Colorado Environmental Safety Training Center offers entry-level training, certification and skill upgrades through a variety of classes and workshops. A close working relationship with local, state and federal regulatory agencies as well as local businesses makes it possible to offer the most current information, technical assistance and on-site training available. Information: **(303) 914-6325**

## Cooperative Education/ Internships

As an extension and application of classroom learning, many opportunities are available for work experience under the supervision of professional business and industry personnel. A qualified faculty member coordinates and supervises the program, working with you and the employer during site visits, over the telephone and through student and supervisor reports.

A "Training Agreement" signed by you, the college and the employer defines the responsibilities of all parties. In addition, you identify job-oriented learning objectives for approval by the work supervisor and faculty coordinator. Weekly time sheets, appropriate individual assignments and a final report are also required to comply with specific program requirements. Evaluation of the work experience is similar to that used in other courses, with additional emphasis on the employer's rating which constitutes part of the final evaluation process.

A minimum of 45 clock hours of cooperative work experience are required to earn each hour of college Co-op credit. Most program areas offer work experience opportunities, and some require them for graduation. The total number of credit hours which may apply toward a degree in a specific area is identified in the "Instructional Program" section of this catalog.

For programs not requiring work experience, Co-op is considered an approved substitute or an elective upon permission of the faculty advisor.

All Cooperative Education/Internship courses carry a course/program prefix and are numbered 297. Permission of the faculty coordinator and cooperative education employer supervisor are required to enroll. Unless waived by the appropriate Instructional Vice President, COE 296 or COM 115 (*Job Search Process*) is also required. Information: **(303) 914-6258**

## The OSHA Training Institute: Rocky Mountain Education Center

Red Rocks is one of five national Occupational Health And Safety Training Institute centers, offering hands-on experiential instruction in classes and workshops as well as consulting. Information: **(303) 914-6420**

## The Red Rocks Institute

The Institute is Red Rocks customized training and consulting arm, offering assistance to area businesses in developing the knowledge, skills, technical expertise and managerial qualities of their employees. Services are tailored to meet scheduling and content needs of each business. Information: **(303) 277-0395**

In addition, the Institute's Small Business Development Center (*SBDC*) provides counseling, training, information and research assistance to small businesses in all stages of development. The SBDC is sponsored jointly by the college and the U.S. Small Business Administration. Information: **(303) 277-1840**

## Warren Tech

Students at Red Rocks and the Warren Tech, Jefferson County Schools' technical center for high school students, may take selected classes at either institution. The following programs, described more fully in the Warren Tech Program catalog, are available to Red Rocks students:

Auto Collision Repair I, II, III & IV  
Auto Mechanics  
Business Services & Technology I, II, III & IV  
Carpentry I, II, III & IV  
Computer Technology I & II  
Dental Assisting I & II  
Drafting I, II, III & IV  
Early Childhood Professions I & II  
Horticulture I, II, III & IV  
Hospitality I & II  
Industrial & Design Technology  
Manicuring I  
Masonry Arts I, II, III & IV  
Multimedia Communications I & II  
Printing Technology I, II, III & IV  
Restaurant Arts I & II  
Small Engine & Motorcycle Tech I, II, III & IV  
Welding I, II, III & IV

Warren Tech and other high school students wishing to enroll in a technical program should contact their advisors. Information: **(303) 982-8603** or **(303) 914-6356**

# Student Resources

## Bookstore

The Red Rocks Bookstore supplies new and used textbooks, recommended titles, reference books and supplies for art and drafting. College specialty items are also available. Information: **(303) 989-3794** (*Lakewood campus*) or **(303) 838-5588** (*Conifer campus*)

## Cafeteria

The Red Rocks Cafe on the Lakewood campus serves hot and cold selections during peak meal hours. Information: **(303) 914-6374**

## Child Care

The Children's Center at Red Rocks offers care for toilet-trained children between 2 years, 9 months and 5 years. Red Rocks students receive a 10 percent discount. Information: **(303) 914-6328**

Child care training and referral services, including vacancy information and nanny care, are available from Red Rocks' Family First Child Care Resource and Referral. Information: **(303) 969-9500**

*Red Rocks' Children's Center—  
A caring place for kids to learn and grow*

## Fitness Center

To participate in a program that includes individual analysis and prescribed training for total fitness, register for PHE 100 or PHE 150. Information: **(303) 914-6375** or Conifer at **(303) 838-5588**

## Job Placement/Internships

A wide range of full-time, part-time and temporary jobs are available to current and former students through the Lakewood campus Job Placement Office. While the college cannot guarantee employment, every effort is made to maintain ongoing contact with business and industry in order to generate appropriate employment opportunities. In addition, the Job Placement Office coordinates on-campus recruiting and presentations from business and industry; maintains job announcements and outlook surveys; and provides resume preparation, counseling, interviewing workshops and other job search skills. Details regarding the college's work-study program on campus are also available through the Job Placement Office. Information: **(303) 914-6258**

Practical job experience can extend and help you apply what you learn in the classroom. Through Red Rocks' Internship Programs, you can work, learn and get college credit while you're working for some of the area's best-known employers. Information: **(303) 914-6258**

The Job Placement Office at Red Rocks can help you attain employment through their diverse job listings, individual resume assistance, interviewing workshops and internships.

## Multicultural Activities

Red Rocks is active in our multicultural community and offers individualized assistance for minority students in all aspects of our student services. There is an active Cultural Diversity Council comprising students, faculty and staff. Information: **(303) 914-6234**

## Safety

The Red Rocks Campus Police provide emergency, vehicular and victim assistance, as well as escorts to vehicles, and lost and found services. In case of an emergency on the Lakewood campus, call extension **6411**, otherwise call **(303) 914-6394**

## Student Center

The Lakewood campus Student Center offers various activities including: community events, entertainment leadership programs, lectures, lockers, publications, recreation, student clubs and student ID cards.

Visit the Student Center's newly constructed area including the Mountainside Espresso Bar, Riccochet Court, Fox Tail TV Room, The Den (*programming events*), The Mart (*vendor space*), The Nook (*study area*), Fox Hollow (*pool tables, video games, and vending machines*), Student Project Center (*equipped with computers for student use*), The Great Hall (*study and relaxation area*), Student Leadership Association, student clubs and Phi Theta Kappa offices. Information: **(303) 914-6370** or **(303) 914-6248**

## Student Leadership Association (SLA)

SLA represents student interests within the college's governance structure and decision-making processes as well as plans various activities. To join, you must pay fees and maintain a 2.5 GPA. Information: **(303) 914-6372**

# Academic Standards

Academic Standards are those Red Rocks Community College policies and procedures that assure all aspects of the college's learning environment are functioning optimally.

## Academic Integrity

At Red Rocks, academic integrity is the ethical foundation upon which the academic community pursues professional, administrative and scholarly endeavors. Everyone associated with the college's academic community has a responsibility for establishing, maintaining, and fostering understanding and respect for academic integrity. Following are some principles associated with academic integrity to which we expect students to adhere:

- Assume responsibility and take credit only for the words, and/or ideas in an academic exercise that are expressly one's own.
- Use information, computer programs, disks, another student's work, study aids, and/or other materials, only when allowed by the instructor.
- Remove materials from the library, labs, and other college facilities, only when an official representative of the college grants permission.
- Use copyrighted materials only with permission.
- Refuse to help another commit an act of academic dishonesty.

Academic dishonesty is the intentional act of fraud when an individual claims credit for the work of another, uses unauthorized materials or fabricates information in any scholarly exercise. Academic dishonesty also includes, but is not limited to, forging educational documents, damaging or destroying the works of another or assisting others in acts of academic deception.

If you are aware of an incident of academic dishonesty, please report the occurrence to a faculty member, department chair or administrator. Students committing academic dishonesty will be subject to disciplinary action: failing the assignment and/or course, and/or being expelled from the college.

## Attendance

To get the most benefit from your instruction, you should attend each class, come to class prepared, arrive on time, hand in assignments when due and take exams when scheduled. In addition, you need to comply with attendance policies set by individual instructors.

## Course Load

For most students, a typical academic course requires two hours of outside preparation for each hour spent in class. For example: A 15 semester-credit course load represents a commitment of 45 hours per week—consisting of 15 hours in class and 30 hours of outside preparation.

The average full-time course load is 15 semester credits for each fall and spring session. During the summer session, the average full-time course load is 12 semester credits. Students registering for fewer than 12 credits are classified as part-time. You need written permission from your advisor to enroll for more than 18 semester credits during any academic session.

## Evaluation and Grading

The evaluation of your achievement or mastery is based upon learning objectives. Achievement means successfully reaching a specified level of knowledge or understanding. Mastery means successfully reaching a level of competency in a skill.

Your final course grades are assigned at the end of each session for classes taken during that session. If you need an earlier grade report, contact the instructor before the end of the course and request an "early release of a grade" letter. This letter is unofficial. The official grade report will be mailed from Records approximately two weeks after the last day of a session.

## S.T.A.R. for Grades

If you wish to obtain your grades, call 572-S.T.A.R. (572-7827). Press 2 for grades. Enter your Social Security Number and personal access code (*which is your birth month and birthday*).

## Primary Grading Symbols:

Grade	Description
A	Distinguished achievement for superior work
B	Better than acceptable achievement
C	Acceptable achievement for advancement in the same or related studies
D	Less than acceptable achievement for advancement in the same or related studies ( <i>Credit may not transfer</i> )
F	Failed to achieve or master the learning objectives of the course

## Additional Grading Symbols:

**Grade**                      **Description**  
**AU Audit.** If you want to take a course without earning semester credit, you can register to audit that course. You must pay tuition and fees for the course and declare your intention to audit no later than the course's tuition refund date. Once you have registered to audit a course, you cannot change your registration from auditing to earning semester credit for the course. The college will not award semester credit for any audited course.

**W Withdrawal.** Through Admissions, you have officially withdrawn from the course or the college by the approved date and time.

**CR Credit.** You have achieved the learning objectives for the course with a grade of C (*or better*). The instructor for that course evaluates your achievement on a credit/no-credit basis. The CR symbol is limited to specific courses designated by certain disciplines of study.

**NC No-credit.** You have not achieved the learning objectives for the course with a minimum grade of C. The instructor for that course evaluates your achievement on a credit/no-credit basis. The NC symbol is limited to specific courses designated by certain disciplines of study.

**I Incomplete.** If you are not able to complete the learning objectives before the end of a course because of verifiable extenuating circumstances, the instructor can assign an Incomplete grade at his or her discretion. Before you can be eligible to receive an I, you must have completed a minimum of two-thirds of the course work with a grade of C (*or better*) by the withdrawal date (*see W*). Before the end of the course, you are responsible for making arrangements with the instructor for the preparation of an Incomplete Grade Contract. If you do not complete the course work by the agreed upon deadline date, the instructor will change the I into the letter grade stipulated in the contract.

**SP Satisfactory Progress.** Under the college's continuous enrollment policy, certain courses have been designated open-entry. You are eligible to receive an SP only if you are enrolled in an open-entry course. By the end of the academic session, you must have completed course work (*prorated by your registration date*) with a grade of C (*or better*) before you can be eligible for an SP. Also, you can request an SP based on verifiable extenuating circumstances. Before the end of the academic session, you are responsible for making arrangements with the instructor for the preparation of an SP Grade Contract. If you do not complete the course work by the agreed upon deadline date, the instructor will change the SP into an F.

## Grade Point Average (GPA) Calculation

When computing your cumulative grade point average (*GPA*) various numerical values are assigned and used. Those that appear on your transcript are:

**AHRS** (*attempted credit hours*) Once you register for a course, you are attempting the semester credit hours assigned to that course. Attempted hours are not used to calculate your GPA.

### **EHR** (*earned credit hours*)

If you earn a final course grade of A, B, C, D, or CR, you will receive earned semester credit hours for that course. Earned hours are not used to calculate your GPA.

### **QHRS** (*quality credit hours*)

If you earn a final course grade of A, B, C, D, or F, you will receive quality semester credit hours for that course. Quality hours are used to calculate your GPA.

### **QPTS** (*quality points*)

The main grading symbols, A through F, are given points: A=4, B=3, C=2, D=1, and F=0. The points assigned to the letter grade multiplied by the quality credit hours received for the course gives a numerical value called quality points. These points are used to compute your cumulative grade point average (*GPA*). Grading symbols: W, I, CR, NC, SP, and AU do not have points and are not used when computing your GPA.

### **GPA** (*grade point average*)

Your grade point average is the numerical value found by dividing the total number of quality points (*QPTS*) by the total number of quality semester credit hours (*QHRS*). The GPA's highest possible numerical value is 4.000.

### GPA Calculation Example:

Prefix	Grade/Points	AHRS	EHR	QHRS	QPTS
ART 131	B 3	3	3	3	9(3X3)
BIO 227	W —	3	0	0	0
MAT 201	A 4	5	5	5	20(4X5)
MAT 201 Lab	CR —	1	1	0	0
PHI 111	C 2	3	3	3	6(2X3)
PSY 116	F 0	1	0	1	0(0X1)
Totals		16	12	12	35
<b>GPA =</b>		$\frac{\text{Total QPTS} = 35}{\text{Total QHRS} = 12} = 2.917$			

## Academic Second Chance

All course work taken at Red Rocks is reflected on your permanent transcript; however, you can initiate a petition to remove from your cumulative grade point average (*GPA*) up to 15 semester credits of substandard grades you earned in course work no longer appropriate to your present educational goals. Before submitting the required written request, you must wait at least two years after the course work was completed and must take a minimum of 15 semester credits of new course work at Red Rocks with a cumulative GPA of 2.000 or higher. You can petition only once to remove from your cumulative GPA the substandard grades. Once Admissions has removed these grades from your cumulative GPA, they cannot be reinstated. The substandard grades, however, will still appear on your permanent academic transcript. For further information contact the Admissions and Counseling Center at **(303) 914-6255**.

## Repeating Courses

You can submit a written request to Student Records to repeat a course for which you have earned a substandard grade. If the request is approved, you will be allowed to repeat the course only once. Both grades will appear on your permanent academic transcript. The most recent grade of the repeated course will be used to calculate your cumulative grade point average. Information: **(303) 914-6352**

## Phi Theta Kappa

Red Rocks sponsors a chapter of Phi Theta Kappa, the national student honorary organization. Club members offer tutoring programs, raise money for charity and conduct educational forums. To be eligible for membership, you must have completed at least 15 semester credits of study, have a minimum GPA of 3.5 and a faculty recommendation. Information: **(303) 914-6308**

## Veterans Progress

Veterans are certified only for courses that apply to their degree programs. If you are eligible to receive VA benefits you are required to maintain a cumulative 2.000 grade point average (*GPA*) for all course work attempted. If your cumulative GPA is below 2.000 you will be placed on academic probation for the following term. If your GPA is not increased to 2.000 during the probationary term, you will be suspended from certification to the Veteran Administration for one academic term. Reinstatement will only occur after approved counseling has been received.

Credit is not given for audited courses and are not eligible for certification. If you stop attending but do not officially drop or withdraw from the course, you are considered non-attending. You may be dropped administratively and benefit certification adjusted accordingly.

Copies of the veteran regulations are available for review in the Veteran Services office on campus. Information: **(303) 914-6353**

## Honors List

The Honors List is designed to recognize those students who have achieved an outstanding level of academic success at Red Rocks Community College. The Honors List designation is recorded on your official academic transcript and you receive recognition during the College's annual graduation ceremony. To receive this academic honor, you must be graduating and have:

- Earned, for all semester credits, a cumulative GPA of 3.85 (*or higher*);
- Taken at least 15 semester credits of course work through Red Rocks Community College; and
- Completed the requirements for an Associate of Arts, Associate of Science, Associate of General Studies, or Associate of Applied Science degree; or have completed a certificate program containing at least 30 semester credits.

## Honors Program

Recognizing that a grade point average is not the only measure of intellectual ability, the faculty at Red Rocks Community College are dedicated to supporting an Honors Program that helps cultivate your entire intellectual potential. Honors Program students have the opportunity to join fellow students and faculty in pursuit of educational innovation, interdisciplinary exploration, self-discovery, and academic excellence. The Honors Program at Red Rocks offers a variety of educational opportunities designed to assist you in:

- Preparing for upper division course work
- Developing informed appraisals of their professional interests and abilities
- Cultivating personal and professional skills
- Exploring topics meaningful to their educational and career goals

### Honors Courses

Honors students are provided the option of participating in one or more of the following courses:

- General Education Core Courses with an Honors Component
- Special Honors Topics
- Interdisciplinary Honors Seminar

*Red Rocks offers more than 500 courses and 100 different programs and continues to grow by staying on the leading edge of technology. Students can always look forward to updating their job skills at Red Rocks.*

### Eligibility

Participation in the Honors Program is a two-step process.

#### Step 1

You must meet one of the following requirements:

- Completion of 12 semester-credit hours at RRCC with a minimum GPA of 3.0
- SAT combined score of 1100
- ACT composite score of 24
- Phi Theta Kappa membership
- Faculty recommendation

#### Step 2

You must submit a written request to an Honors Program faculty member to participate in the program.

- An Honors faculty member and/or the Honors Committee will interview you and determine program participation.

If you need more information about the Honors Program at Red Rocks Community College, please contact Dr. Marjorie Berman at **(303) 914-6259** or Dr. Dave Brown at **(303) 914-6378**.

## Red Rocks— An Amazing Place

Maria Todd is a Red Rocks graduate who happened upon Red Rocks by chance when she was vacationing in Colorado from the Seattle area. With her sister's encouragement, Maria ended up moving to Colorado to attend school here. Maria remembers how "Everything just fell into place" and how thankful she was for the people she met at Red Rocks because "they were willing to go the extra mile to help me."

Maria became part of the Red Rocks family. As a student she received her Associate of Arts with an emphasis in History and has also worked part-time with the faculty in the Instructional Services area. She says she enjoyed the chance to work with the faculty because "It provided me with the opportunity to be a part of the team."

Maria plans to transfer to UCD to obtain her B.A. in History and minor in Geography. Maria says that "Red Rocks is such an amazing place and has such a nice campus . . . I just love it here."

In fact, she loves Red Rocks so much that she would like to complete her Master's and someday return to Red Rocks to teach. Good luck, Maria, in your future endeavors! We wish you well!

—Tanya Floyd



# For Your Information

## Affirmative Action/ Equal Opportunity

Red Rocks Community College is committed to diversity in its people and programs. The college is an equal opportunity educational institution and does not discriminate on the basis of race, color, religion, national origin, sex, age, veteran status or disability. The college also does not tolerate ethnic intimidation which are any unlawful acts against persons or groups because of a person's or group's race, color, ancestry, religion or national origin for the purpose of inciting and provoking bodily injury or damage to property.

The college's Affirmative Action/Equal Opportunity Program Plan has been approved by the State Board for Community Colleges and Occupational Education. It is available for individual, public, and agency review in the Human Resources office. The college has designated the Executive Director of Human Resources as its Affirmative Action officer. For information contact Human Resources, Red Rocks Community College, 13300 West Sixth Avenue, Box 17 Lakewood, Colorado 80228-1255, or call (303) 914-6297. Other inquiries may be made to the Director of Affirmative Action for the Colorado Community College and Occupational System, 1391 Speer Boulevard, Denver, Colorado 80204, (303) 620-4000; or the Office for Civil Rights, U.S. Department of Education, 1961 Stout Street, Denver, Colorado 80294.

## Privacy Notification

The Family Education Rights and Privacy Act of 1974 permits Red Rocks Community College to release "directory information" about you to interested parties. "Directory information" does not include grades, but does include the following:

- Your name
- Major field of study
- Participation in officially recognized activities and sports
- Dates of attendance
- Degrees and certificates awarded
- Most recent previous education and educational institution attended

If you don't want us to release directory information about you without your specific consent, please notify Admissions/Advising in writing within 12 days of registration. You must repeat this process each session that you want your directory information withheld.

## Students with Disabilities

Red Rocks Community College offers many special services to those of you who may have disabilities, whether the disability is permanent or temporary. The college complies with and fully supports Section 504 of the Rehabilitation Act of 1973, with amendments of 1974, as well as the Americans with Disabilities Act (ADA) of 1990, regarding nondiscrimination on the basis of handicap. Reasonable accommodation is provided upon request for persons with disabilities. If you have a disability and require an accommodation to participate in any class program, service or other activity at Red Rocks, please contact the Office of Services for Special Populations by calling (303) 914-6376 or direct line (303) 980-8776 TDD/V.

## Drug and Alcohol Abuse Prevention Program

### The Law

Red Rocks Community College complies with the Drug Free Schools and Communities Amendments of 1989. A copy of this Act is on file in the Student Center and Human Resources Office.

### Standard of Conduct

Students and employees shall not engage in the unauthorized or unlawful manufacture, distribution, dispensation, possession, use/abuse of alcohol and/or illicit drugs on college property or as a part of any college activity.

### Legal Sanctions

There are legal sanctions for violations of the Standard of Conduct. Any student or employee who is convicted of the unlawful manufacture, distribution, dispensation, possession, use or abuse of illicit drugs or alcohol is subject to criminal penalties under local, state and federal law. These penalties range in severity from a fine of \$100 up to \$8,000,000 and/or life imprisonment. The exact penalty assessed depends upon the nature

and severity of the individual offense.

## College Penalties

The college will impose penalties against students and employees who violate the above Standard of Conduct. Violators will be subject to disciplinary action under employee and student disciplinary policies. The sanctions include, but are not limited to, probation, suspension or expulsion from the college or probation, suspension or termination of employment; and referral to authorities for prosecution, as appropriate.

## Health Risks

Many health risks are associated with drug and alcohol abuse. Risks include but are not limited to: malnutrition, brain damage, heart disease, pancreatitis, cirrhosis of the liver, mental illness, death, low birth weight babies and babies with drug addictions. Personal relationships, family dynamics, ability to work and study are also at risk.

## Illegal Substances

A listing of controlled substances is on file for your reference in the Student Center and Human Resources Office.

## Referral Sources

Referral for counseling, treatment, rehabilitation and re-entry programs are available through:

### The College:

- Admissions/Advising (303) 914-6255
- Human Resources (303) 914-6298
- Student Center (303) 914-6372

### The Community:

- Al-Anon — Al-ATeen (303) 321-8788
- Alcoholics Anonymous (303) 322-4440
- Cenikor Prevention Network (303) 234-1288
- Mile High Council Alcoholism/Drug Abuse (303) 759-5555
- Narcotics Anonymous (303) 832-3784
- Suicide Depression Crisis Hotline (303) 860-1200

Or consult the yellow pages of the local telephone book for a listing of all private and community-based programs. Check listings under "Alcoholism Treatment" and "Drug Abuse Information and Treatment." HOT-LINE, National Institute of Drug Abuse (NIDA), 1-800-662-HELP.

# Degrees and Certificates

## Associate of Arts

### Transfer Degree, University Parallel

The Associate of Arts degree (60–66 semester credits) is for the student who intends to transfer to a four-year college or university and wants an education with a liberal arts emphasis. It provides a basis of study in business; communications; foreign languages; the arts and humanities; and social and behavioral sciences. Students are encouraged to consult with their faculty advisors before beginning any program of study. Emphases are available in:

Art	History
Business	Humanities
Economics	Philosophy
English & Literature	Political Science
Foreign Languages:	Psychology
French	Sociology
German	Speech Communications
Spanish	Theatre Arts

## Associate of Science

### Transfer Degree, University Parallel

The Associate of Science degree (60–66 semester credits) is for the student who intends to transfer to a four-year college or university and wants an education with a science-related emphasis. It provides a basis of study in computer science, preparatory engineering and nursing, mathematics, and the organic and physical sciences. Students are encouraged to meet with their faculty advisors before beginning any program of study. Emphases are available in:

Biology	Geology
Biotechnology	Mathematics
Chemistry	Nursing (preparatory)
Computer Science	Physics
Engineering (preparatory)	

## Associate of General Studies—Specialist Articulated Transfer Degree

The Associate of General Studies—Specialist degree (60–66 semester credits) is for the student who wants to complete the Associate of Arts core general education transfer course requirements and have an emphasis in a career-oriented program of study. Students are encouraged to meet with their faculty advisors before beginning any program of study. Transfer agreements exist between RRCC and certain four-year colleges for the following career areas:

Criminal Justice \*  
Early Childhood Education \*  
Multimedia Technology \*

## Associate of General Studies—Generalist

The Associate of General Studies—Generalist degree (60–66 semester credits) is for the student who wants to complete college-level general education courses and have an emphasis in a career-oriented program of study. Various courses within the AGS—Generalist degree may be accepted into a baccalaureate-degree-granting institution; however, courses taken are considered for transfer on an individual basis by the receiving four-year college or university. Students are encouraged to meet with their faculty advisors or career counselors before beginning any program of study.

## Associate of Applied Science

The Associate of Applied Science degree (60–75 semester credits) is for the student who is preparing for entry-level employment in a career-oriented program of study or upgrading in a specific occupation. This degree is not intended for transfer. Various courses within this degree may be accepted into a baccalaureate-degree-granting institution; however, courses taken are considered for transfer on an individual basis by the receiving four-year college or university. Students are encouraged to meet with their faculty advisors before beginning any program of study. Emphases are available in the following career areas:

Auto Collision Technology \*  
(In cooperation with and at the Warren Center)

Automotive Technology \*  
(In cooperation with and at the Warren Center)

Business Programs:

Accounting \* with emphases in:

Accounting Paraprofessional

Accounting Technician

Business Administration with emphases in:

Commercial Food Service Management \*

(In cooperation with and partially at the Warren Center)

Financial Services Management—Banking

Human Resources Management \*

Management and Supervision \*

Marketing \*

Pre-Hospital Emergency Medical Svcs Management

Purchasing Management \*

Real Estate \*

Transportation and Logistics Management

Business Technology with emphases in:

Administrative Assistant

Legal Secretary \*

Medical Office \*

Word/Information Processing \*

Computer Information Systems \* with emphases in:

Internet/Web Development \*

Microcomputer Applications Specialist \*

Microcomputer Programming Specialist

Multimedia Software Developer \*

Network Administrator

Programming \*

Construction Technology \* with emphases in:

Air Conditioning/Heating/Refrigeration \*

Carpentry \*

Electricity \*—Commercial/Industrial/Residential

Fine Woodworking \*

Plumbing \*

Energy Technology \*

Solar Construction Technology \*

Apprentice-Related Technology with emphases in:

*(In partnership with the Construction Industry Training Council of Colorado)*

Carpentry \*  
Drywall Applicator \*  
Electrical \*  
Ironworker \*  
Masonry \*  
Plumbing \*  
Sheetmetal \*

Criminal Justice with emphases in:

Corrections  
Juvenile  
Law Enforcement  
Victim Assistance Direct Service \*

Electronic Digital/Computer Technology \*

Emergency Management and Planning \*

Engineering Graphics Technology *(Formerly Drafting Technology)*  
with emphases in:

Architectural Drafting and Design \*  
Mechanical Drafting and Design \*

Environmental & Safety Technology \* with emphases in:

Energy Conservation and Management  
Environmental Conservation  
Environmental Management  
Environmental Science  
Hazardous Materials Technician  
Health and Safety Technology  
Water Pollution Management

Fire Science Technology with emphases in:

Fire Science  
Code/Ordinance  
Emergency Medical Service/Paramedic  
Fire Investigations  
Fire Service Management  
Hazardous Materials Technician  
Officer Development  
Wildland Management  
Medical Assisting \*

Multimedia Technology with emphases in:

Film/Video Technology  
Graphics/Animation Technology\*  
Production/Design Technology

Occupational Safety Technology \*

*(In cooperation with Trinidad State Junior College)*

Paramedic Technician

Park Ranger Technology \* with emphases in:

Law Enforcement  
Outdoor Recreation  
Public Safety  
Resource Interpretation

Radiologic Technology

Water Quality Management Technology

Welding Fabrication Technology \*

*(At the Rocky Mountain Manufacturing Academy, HEAT Ctr, Lowry)*

\* Certificate is also available.

## Certificates

In addition to the above asterisked areas of emphasis, the following also lead to a certificate:

Aviation Technology *(At Jefferson County Airport)*

Basic Law Enforcement Training Academy

Business:

Accounting Clerk  
Bookkeeping Clerk  
Clerical Data Entry  
Small Business Management

Colorado Network Engineering

Computer Information Systems:

LAN Administrator  
Multimedia Software Specialist

Construction Technology:

Advanced Construction Electrician  
Advanced Maintenance Electrician  
Basic Plumbing and Heating Maintenance  
Building Code  
Solar Construction  
Apprentice-Related: Skilled Laborer

Criminal Justice:

Investigations  
Victim Assistance Administration

Early Childhood Education:

Center Director  
Group Leader

Emergency Services:

Public Service Communications  
Emergency Management and Planning

Health Careers:

Continuing Education for Health Care  
Continuing Education Refresher Nursing  
Gerontology  
Nurse Aide/Home Health Aide

*Not all courses are available each session.*

*"Goddesses"—A 1996 Theatre Performance at Red Rocks*

# General Education Core Transfer Program

Core Transfer courses (see list at right) are guaranteed to transfer to Colorado's public four-year colleges. You may choose to complete only the core curriculum, or to complete core courses as part of an Associate of Arts or Associate of Science degree. You should confirm the transferability of all courses, as well as specific departmental or program requirements, at the Admissions and Counseling Center or with a faculty advisor.

## Associate of Arts Degree

### CORE REQUIREMENTS (See core list.)

**English/Speech:** 9 semester credits required  
(All three courses from Group 1)

**Mathematics:** 3 semester credits from Group 2

**Science:** 4 semester credits from Group 3

**Social and Behavioral Sciences:** 9 semester credits from 2 different disciplines in Group 4

**Humanities:** 9 semester credits from 2 different disciplines in Group 5 (All foreign languages are considered a single discipline.)

**Total Core Requirements:** 34 semester credits

**Additional Requirement:** An additional 26 semester credits of approved transferable electives.\*

**TOTAL HOURS REQUIRED:** 60-66 semester credits

## Associate of Science Degree

### CORE REQUIREMENTS (See core list.)

**English/Speech:** 9 semester credits required  
(All three courses from Group 1)

**Mathematics:** 4 semester credits from Group 2  
(MAT 135 does not fulfill the core requirements.)

**Science:** 8 semester credits from Group 3  
(BIO 105, CHE 101 and CHE 102 do not fulfill the core requirements.)

**Social and Behavioral Sciences:** 6 semester credits from 2 different disciplines in Group 4

**Humanities:** 6 semester credits from 1 or 2 different disciplines in Group 5

**Total Core Requirements:** 33 semester credits

### Additional Requirements:

1. An additional 18 semester credits of transferable electives chosen from AST, BIO, CHE, CIS, CSC, GEY, MAT and PHY. You must select these courses only from the approved course list for the Associate of Arts and Associate of Science degrees.\*

2. An additional 9 semester credits of approved transferable electives.\*

**Total Hours Required:** 60-66 semester credits

\*You must select courses from the "Approved Elective Credit Course List" for the AA and AS degrees found on page 19.

## CORE COURSES

			SEMESTER CREDITS
<b>1. COMMUNICATIONS</b>			
ENG	121	English Composition I	3
ENG	122	English Composition I	3
SPE	115	Principles of Speech Communication	3
<b>2. MATHEMATICS</b>			
MAT	121	College Algebra	4
MAT	125	Survey of Calculus	4
**	MAT 135	Introduction to Statistics	3
MAT	201	Calculus I	5
MAT	202	Calculus II	5
<b>3. SCIENCE</b>			
AST	101	Astronomy I	4
AST	102	Astronomy II	4
**	BIO 105	Science of Biology	4
BIO	111	General College Biology I	5
BIO	112	General College Biology II	5
**	CHE 101	Introduction to Chemistry I	5
**	CHE 102	Introduction to Chemistry II	5
CHE	111	General College Chemistry I/Lab	5
CHE	112	General College Chemistry I/Lab	5
GEY	111	Physical Geology	4
GEY	121	Historical Geology	4
**	PHY 105	Conceptual Physics	4
PHY	111	Physics: Algebra-Based I	5
PHY	112	Physics: Algebra-Based II	5
PHY	211	Physics: Calculus-Based I	5
PHY	212	Physics: Calculus-Based II	5
<b>4. SOCIAL AND BEHAVIORAL SCIENCES</b>			
ANT	101	Cultural Anthropology	3
ANT	111	Physical Anthropology	3
ECO	201	Principles of Macroeconomics	3
ECO	202	Principles of Microeconomics	3
GEO	105	World Regional Geography	3
HIS	101	Western Civilization I	3
HIS	102	Western Civilization II	3
HIS	201	U.S. History I	3
HIS	202	U.S. History II	3
POS	105	Introduction to Political Science	3
POS	111	American Government	3
PSY	101	General Psychology I	3
PSY	102	General Psychology II	3
SOC	101	Introduction to Sociology I	3
SOC	102	Introduction to Sociology II	3
<b>5. HUMANITIES</b>			
ART	110	Art Appreciation	3
ART	111	Art History I	3
ART	112	Art History II	3
FOR	111	Foreign Language I	5
FOR	112	Foreign Language II	5
FOR	211	Foreign Language III	3
FOR	212	Foreign Language IV	3
HUM	121	Survey of Humanities I	3
HUM	122	Survey of Humanities II	3
HUM	123	Survey of Humanities III	3
LIT	115	Introduction to Literature	3
LIT	201	Masterpieces of Literature I	3
LIT	202	Masterpieces of Literature II	3
MUS	120	Music Appreciation	3
MUS	121	Introduction to Music History I	3
MUS	122	Introduction to Music History II	3
PHI	111	Introduction to Philosophy	3
PHI	112	Ethics	3
PHI	113	Logic	3
THE	105	Introduction to the Theatre Arts	3
THE	211	Development of Theatre I	3
THE	212	Development of Theatre II	3

\*All foreign languages (French, German, Spanish) are considered a single discipline.

\*\*Fulfills core requirements for Associate of Arts degree but not for Associate of Science degree.

## Approved Elective Credit Course List for the Associate of Arts or Associate of Science Degrees

These courses are generally transferable to four-year colleges or universities in Colorado. All courses will count toward the AA and AS degrees. However, transferability depends upon the four-year institution. Additional courses may be transferable to one or more of the four-year colleges or universities in Colorado. For specific information, please consult your advisor.

ACC	Accounting	121 and 122
ANT	Anthropology	All courses
ART	Art	All courses
AST	Astronomy	All courses
BIO	Biology	All courses
BUS	Business	115, 216, 217 & 221 (See AA degree, Emphasis in Business)
CHE	Chemistry	All courses
CIS	Computer Information Systems	115, 116, 118, 160, 161, 165, 240, 241, 260, 261, 265 & 266
CSC	Computer Science	148, 160, 161, 165, 230, 231, 240, 241 & 265
ECE Education	Early Childhood Education	101, 115, 117 & 120
ECO	Economics	All courses except 119
ENG	English	121, 122, 131, 221, 222, 227 & 232
ENV	Environmental Science	101
FRE	French	All courses except 101 & 102
GEO	Geography	All courses
GEY	Geology	All courses
GER	German	All courses except 101 & 102
HIS	History	All courses
HUM	Humanities	All courses
LIT	Literature	All courses
MAT	Mathematics	121, 122, 123, 124, 125, 135, 201, 202, 203, 255 & 265
MUS	Music	All courses
NUR	Nursing	200
PHI	Philosophy	All courses
PHE	Physical Education	All courses (A maximum of 3 credits will count toward the degree.)
PHY	Physics	All courses
POS	Political Science	All courses
PSY	Psychology	101, 102, 115, 205, 217, 226, 227, 235, 238, 239, 249 & 250
SOC	Sociology	101, 102, 205, 215, 218, 226 & 237
SPA	Spanish	All courses except 101, 102 & 225
SPE	Speech	All courses
THE	Theatre	All courses

**For certain areas the following may be taken for AA and AS elective credit and are intended to transfer:**

ACC	Accounting	121 & 122
BUS	Business	115, 216, 217 & 221
CIS	Computer Information Systems	115, 116, 175, 260, 261 & 277

## Transfer Agreements With Four-Year Colleges and Universities

### Transferring to Four-year Colleges and Universities

Red Rocks has established transfer agreements with the following institutions:

Adams State College  
 Colorado School of Mines  
 Colorado State University  
 Fort Lewis College  
 Mesa State College  
 Metropolitan State College of Denver  
 Regis University  
 University of Colorado at Boulder  
 University of Colorado at Colorado Springs  
 University of Colorado at Denver  
     College of Business and Administration  
     College of Engineering and Applied Science  
     College of Liberal Arts and Sciences  
 University of Colorado Health Sciences Center  
 University of Denver  
 University of Northern Colorado  
 University of Southern Colorado  
 Western State College

These agreements specify how Red Rocks courses transfer and identify their equivalents at these institutions. They are contained in the Red Rocks Transfer Guide which provides written guarantees of transferability of credit when a prescribed curriculum is satisfactorily completed.

The Red Rocks Transfer Center offers the following services to help simplify the process:

- Review of general education requirements, courses and degree programs
- Provision of catalogs and Transfer Guide information
- Assistance with application and admissions procedures
- Assistance with financial aid planning
- Coordination of campus visits by college representatives

Information: **(303) 914-6255**

# Graduation Requirements

## Catalog Requirements

Students will graduate under the catalog requirements listed for the year that they were first enrolled. If you interrupt attendance for two consecutive semesters (*excluding summer term*) or more and then return, the catalog of the readmission semester is the governing document. You may choose to use the catalog that is in effect the semester they graduate. You should be sure to obtain and keep a copy of their governing catalog.

## Degrees Awarded

Red Rocks Community College awards the following degrees:

Associate of Arts (*transferrable*)

Associate of Science (*transferrable*)

Associate of General Studies (*pre-professional transfer or occupational*)

Associate of Applied Science (*occupational*)

## Certificate Requirements

1. Students must complete the specified subject matter or course requirements of an approved vocational/technical program.
2. Students must earn a cumulative grade point average of 2.0. Students should check with their instructional divisions as well as their advisors for information regarding the minimum grade point average requirement that is necessary for graduation.
3. Students must complete at least 50 percent of their course work at Red Rocks to be awarded a certificate.
4. Students must submit an "Application for Graduation" form during the term in which they intend to graduate, according to the deadline published in the *Class Planning Schedule* for that session.

## Petitioning for Waivers and/or Program Substitutions

Students who, due to extenuating circumstances, wish to petition for a waiver and/or substitution of program requirements must complete a "Waiver/Program Substitution Request" form. The form is available in the Student Records office. Students should complete the request, have it approved by their advisors and the appropriate Instructional Vice President and submit it to Student Records where it will be kept on file.

## Recognition of Achievement

The college offers many courses, conferences, workshops and seminars for upgrading job skills as well as for personal enrichment. Successful completion of courses of this type may result in the granting of a "Recognition of Achievement" which may be requested from the appropriate Instructional Vice President.

## Courses That Are Not Applicable Toward Any Degree

Courses numbered 093 and 095 and the following courses will not count toward any degree:

EDU	090	1-3 Credits	Seminar in Peer Tutoring
EDU	092	1 Credit	Portfolio Development Workshop
ENG	031	1-3 Credits	Learning Unlimited English Review
ENG	094	1-3 Credits	Sound and Spelling
ESL	011	1 Credit	Pronunciation
ESL	090	3 Credits	ESL Spelling/Vocabulary
ESL	091	3 Credits	ESL Communication
ESL	092	3 Credits	ESL Reading
ESL	093	3 Credits	ESL Grammar
ESL	094	3 Credits	ESL Writing
ESL	095	5 Credits	ESL Intensive
ESL	096	3 Credits	ESL Communication for Business
ESL	098	3 Credits	TOEFL Preparation
GED	011	1-3 Credits	GED Preparation
MAT	031	1-3 Credits	Learning Unlimited Math Review
MAT	056*	3 Credits	Intro to Mathematics: Pre-Algebra
STS	060	1-3 Credits	Learning Success Strategies

Reading (*REA*) courses will not count toward any degree.

*\*This course may apply toward selected AAS degree programs.*

## Other Graduation Policies

1. No more than 6 semester credits of independent study course work may be applied toward an associate degree program.
2. There is no limit on special topics courses allowed to count toward a degree. In individual cases, the limit will be determined by the program area. Students taking special topics courses should consult with their advisors regarding how these credits will apply toward a degree.
3. The college reserves the right to substitute or delete course work based on the current curriculum. Students are assured that if the curriculum changes, the college will make every effort to determine an equitable solution.
4. Students applying for an additional degree from Red Rocks Community College must complete an additional 15 credits at Red Rocks Community College and the requirements for the degree.
5. With the approval of a faculty advisor or Instructional Vice President, cooperative education credit may count toward a degree.

## OTHER (AA) DEGREE REQUIREMENTS

1. A minimum of 60 semester credits is required for the Associate of Arts degree. These must include 34 credits in Core transfer courses and 26 credits in the areas specified below in approved electives.
2. You must complete 26 semester elective credits. These must be college-level transfer courses and may include no more than 3 credit Physical Education (PHE)—see approved electives below. Please see an advisor in your area of emphasis for specific course suggestions.  
  
Credits earned above the minimum to satisfy a requirement may be applied to a different area. For example, if you take Introduction Chemistry I (CHE 101-5 credits) to satisfy the science requirement in the Core curriculum, 4 or those 5 credits can be applied toward the Core requirement, and the remaining 1 credit applied as an elective credit.
3. You must earn a cumulative grade point average of 2.0 (C average).
4. If you are planning to transfer to a four-year college or university you should consult an advisor for assistance in planning your programs of study. (Advisors can be seen in Admissions/Advising at Red Rocks.)
5. If you are planning to transfer to a four-year college or university you should consult the Transfer Guide for GPA requirements if the receiving institution. (In Admissions/Advising.)
6. You must complete a minimum of 15 transferable semester credits at Red Rocks Community College.
7. You must file and Application for Graduation during the term in which you intend to graduate, according to the deadline published in the Schedule for that term. (Apply in Admissions or the Records office.)

## OTHER GRADUATION POLICIES

8. No more than 6 semester credits of independent study course work may be applied toward an Associate Degree program.
9. There is no limit on special-topics courses allowed to count toward a degree. In individual cases, the limit will be determined by the program area. Students taking special-topics courses should consult with their advisors regarding how these credits will apply toward a degree.
10. The college reserves the right to substitute or delete course work based on the current curriculum. Students are assured that if the curriculum changes, the college will make every effort to determine an equitable solution.
11. Students applying for an additional degree at Red Rocks Community College must complete an additional 15 credits at Red Rocks Community College and the requirements for the degree.
12. With the approval of a faculty advisor and a Vice President, Cooperative Education may count toward a degree.

## CATALOG REQUIREMENTS

You will graduate under the catalog requirements listed for the year that you were first enrolled. If you interrupt attendance for two consecutive semesters (excluding summer term) or more, and then return, the catalog of the readmission semester is the governing document. You may choose to use the catalog that is in effect the semester you graduate. You should be sure to obtain and keep a copy of your governing catalog.

## APPROVED ELECTIVE CREDIT COURSE LIST FOR THE ASSOCIATE OF ARTS DEGREE

These courses transfer to one or more of the four-year colleges or universities in Colorado. All courses will count toward the AA degree **However, transferability depends on the four-year institution.** Additional courses may be transferable to one or more of the four-year colleges or universities in Colorado. For specific information, please consult an advisor in the Career Resource Center.

Accounting	ACC	121 and 122	History	HIS	All courses
Anthropology	ANT	All courses	Humanities	HUM	All courses
Art	ART	All courses	Literature	LIT	All courses
Astronomy	AST	All courses	Management	MAN	226
Biology	BIO	All courses	Marketing	MAR	216
Business	BUS	115,216, 217 and 226 (See AA degree, emphasis in Business)	Mathematics	MAT	121, 122, 123, 124, 125, 135, 201,202,203,255 and 265
Chemistry	CHE	All courses	Music	MUS	All courses
Computer Info. Systems	CIS	115,116,118,160, 161, 165,240,241, 260,261,265,266 and 277	Nursing	NUR	200
Computer Science	CSC	148,160,161,230,231, 240 and 241	Philosophy	PHI	All courses
Early Childhood Education	ECE	101, 115, 117 and 120	Physical Education	PHE	All courses (Maximum of 3 credits applies toward degree)
Economics	ECO	All courses except ECO 119	Physics	PHY	All courses
English	ENG	121,122,131,221,222, 227 and 232	Political Science	POS	All courses
Environmental Science	ENV	101	Psychology	PSY	101, 102, 115,205,217,226,227, 235,238,239,249 and 250
Foreign Language	FRE, GER, SPA	- All courses except 101,102 and SPA 225	Sociology	SOC	101, 102,205,215,218,226 and 237
Geography	GEO	All courses	Speech	SPE	All courses
Geology	GEY	All courses	Theatre	THE	All courses

## OTHER (AS) DEGREE REQUIREMENTS

1. A minimum of 60 semester credits is required for the Associate of Science degree. These must include 34 credits in Core transfer courses and 18 approved elective credits in the (\*) areas specified below and 9 elective credits from those listed below.
2. You must complete an additional 18 semester credits in any of the Science or asterisked (\*) disciplines listed below. Please see an advisor in your area of emphasis for specific course suggestions
3. Credits earned above the minimum to satisfy a requirement may be applied to a different area. For example, if you take German I and II [(GER 111 & 112) 5 credits each], to satisfy the Humanities requirement in the Core Curriculum, 6 of those 10 credits can be applied toward the Core requirement, and the remaining 4 credits can be applied as elective credits. (Not approved electives.)
4. You must earn a cumulative grade point average of 2.0 (C average).
5. If you are planning to transfer to a four-year college or university you should consult an advisor for assistance in planning your program of study. (Advisors can be seen in Admissions/Advising at Red Rocks.)
6. If you are planning to transfer to a four-year college or university you should consult the Transfer Guide for GPA requirements if the receiving institution. (In Admissions/Advising.)
7. You must complete a minimum of 15 transferable semester credits at Red Rocks Community College.
8. You must file and Application for Graduation during the term in which you intend to graduate, according to the deadline published in the Schedule for that term. (Apply in Admissions or the Records office.)

## OTHER GRADUATION POLICIES

9. No more than 6 semester credits of independent study course work may be applied toward an Associate Degree program.
10. There is no limit on special-topics courses allowed to count toward a degree. In individual cases, the limit will be determined by the program area. Students taking special-topics courses should consult with their advisors regarding how these credits will apply toward a degree.
11. The college reserves the right to substitute or delete course work based on the current curriculum. Students are assured that if the curriculum changes, the college will make every effort to determine an equitable solution.
12. Students applying for an additional degree at Red Rocks Community College must complete an additional 15 credits at Red Rocks Community College and the requirements for the degree.
13. With the approval of a faculty advisor and a Vice President, Cooperative Education may count toward a degree.

## CATALOG REQUIREMENTS

You will graduate under the catalog requirements listed for the year that you were first enrolled. If you interrupt attendance for two consecutive semesters (excluding summer term) or more, and then return, the catalog of the 'readmission semester is the governing document. You may choose to use the catalog that is in effect the semester you graduate. You should be sure to obtain and keep a copy of your governing catalog.

## APPROVED ELECTIVE CREDIT COURSE LIST FOR THE ASSOCIATE OF SCIENCE DEGREE

These courses transfer to one or more of the four-year colleges or universities in Colorado. All courses will count toward the As degree. **However, transferability depends on the four-year institution.** Additional courses may be transferable to one or more of the four-year colleges or universities in Colorado. For specific information, please consult an advisor in the Career Resource Center.

Accounting	ACC	121 and 122	Literature	LIT	All courses
Anthropology	ANT	All courses	Management	MAN	226
Art	ART	All courses	Marketing	MAR	216
*Astronomy	AST	All courses	*Mathematics	MAT	121,122,123,124,125, 135, 201,202,203,255 and 265
*Biology	BIO	All courses	Music	MUS	All courses
Business	BUS	115,216, 217 and 226 (See AA degree, emphasis in Business)	Nursing	NUR	200
'Chemistry	CHE	All courses	Philosophy	PHI	All courses
Computer Info.	CIS	115, 116,118,160,161,165,240,241, Systems 260,261,265,266 and 277	Physical Education	PHE	All courses (Maximum of 3 credits applies toward degree)
*Computer Science	CSC	148, 160, 161,230,231,240 and 241	*Physics	PHY	All courses
Early Childhood Education	ECE	101, 115, 117 and 120	Political Science	POS	All courses
Economics	ECO	All courses except ECO 119	Psychology	PSY	101, 102, 115,205,217,226,227, 235,238,239,249 and 250
English	ENG	121,122, 131,221,222, 227 and 232	Sociology	SOC	101, 102,205,215,218,226 and 237
'Environmental Science	ENV	101	Speech	SPE	All courses
Foreign Language	FRE, GER, SPA	- All courses except 101, 102 and SPA 225	Theatre	THE	All courses
Geography	GEO	All courses			
*Geology	GEY	All courses			
History	HIS	All courses			
Humanities	HUM	All courses			



## OTHER AGS-G DEGREE REQUIREMENTS

1. A minimum of 60 semester credits is required for the Associate of General Studies - General degree. These must include 34 credit of Core transfer courses and 26 credits in the areas specified below in approved electives or career courses (see your advisor).
2. You must complete 26 semester elective credits. These must be college-level transfer courses and may include no more than 3 credits in Physical Education (PHE)—see approved electives below. Please see an advisor in your area of emphasis for specific course suggestions.  
  
Credits earned above the minimum to satisfy a requirement may be applied to a different area. For example, if you take Introduction to Chemistry I (CHE 101-5 credits) to satisfy the science requirement in the Core curriculum, 4 or those 5 credits can be applied toward the Core requirement, and the remaining 1 credit applied as an elective credit.
3. You must earn a cumulative grade point average of 2.0 (C average).
4. If you are planning to transfer to a four-year college or university you should consult an advisor for assistance in planning your programs of study. (Advisors can be seen in the Admissions/Advising at Red Rocks.)
5. If you are planning to transfer to a four-year college or university you should consult the Transfer Guide for GPA requirements if the receiving institution. (in Admissions/Advising.)
6. You must complete a minimum of 15 transferable semester credits at Red Rocks Community College.
7. You must file and Application for Graduation during the term in which you intend to graduate, according to the deadline published in the Schedule for that term. (Apply in Admissions or the Records office.)

## OTHER GRADUATION POLICIES

8. No more than 6 semester credits of independent study course work may be applied toward an Associate Degree program.
9. There is no limit on special-topics courses allowed to count toward a degree. In individual cases, the limit will be determined by the program area. Students taking special-topics courses should consult with their advisors regarding how these credits will apply toward a degree.
10. The college reserves the right to substitute or delete course work based on the current curriculum. Students are assured that if the curriculum changes, the college will make every effort to determine an equitable solution.
11. Students applying for an additional degree at Red Rocks Community College must complete an additional 15 credits at Red Rocks Community College and the requirements for the degree.
12. With the approval of a faculty advisor and a Vice President, Cooperative Education may count toward a degree.

## CATALOG REQUIREMENTS

You will graduate under the catalog requirements listed for the year that you were first enrolled. If you interrupt attendance for two consecutive semesters (excluding summer term) or more, and then return, the catalog of the readmission semester is the governing document. You may choose to use the catalog that is in effect the semester you graduate. You should be sure to obtain and keep a copy of your governing catalog.

## APPROVED ELECTIVE CREDIT COURSE LIST FOR THE ASSOCIATE OF GENERAL STUDIES - GENERAL DEGREE

These courses transfer to one or more of the four-year colleges or universities in Colorado. All courses will count toward the AGS-G degree. **However, transferability depends on the four-year institution.** Additional courses may be transferable to one or more of the four-year colleges or universities in Colorado. For specific information, please consult an advisor in the Career Resource Center.

Accounting	ACC	121 and 122	Literature	LIT	All courses
Anthropology	ANT	All courses	Management	MAN	226
Art	ART	All courses	Marketing	MAR	216
Astronomy	AST	All courses	Mathematics	MAT	121,122,123,124,125,135, 201,202,203,255 and 265
Biology	BIO	All courses	Music	MUS	All courses
Business	BUS	115, 216, 217 and 226 (See AA degree, emphasis in Business)	Nursing	NUR	200
Chemistry	CHE	All courses	Philosophy	PHI	All courses
Computer Info. Systems	CIS	115, 116,118,160,161,165,240,241, 260,261,265,266 and 277	Physical Education	PHE	All courses (Maximum of 3 credits applies toward degree)
Computer Science	CSC	148, 160, 161,230,231, 240 and 241	Physics	PHY	All courses
Early Childhood Education	ECE	101, 115, 117 and 120	Political Science	POS	All courses
Economics	ECO	All courses except ECO 119	Psychology	PSY	101,102,115,205,217, 226,227, 235,238,239,249 and 250
English	ENG	121,122,131,221,222, 227 and 232	Sociology	SOC	101, 102,205,215,218,226 and 237
Environmental Science	ENV	101	Speech	SPE	All courses
Foreign Language	FRE, GER, SPA	- All courses except 101,102 and SPA 225	Theatre	THE	All courses
Geography	GEO	All courses			
Geology	GEY	All courses			
History	HIS	All courses			
Humanities	HUM	All courses			

## OTHER (AAS) DEGREE REQUIREMENTS

1. A minimum of 60 semester credits is required for the Associate of Applied Science degree. These must include 45 credits in specific program courses and 15 credits in general education courses.
2. You must earn a cumulative grade point average of 2.0 (C average).
3. If you are planning to transfer to a four-year college or university you should consult an advisor for assistance in planning your programs of study. (Advisors can be seen in Admissions/Advising at Red Rocks.)
4. If you are planning to transfer to a four-year college or university you should consult the Transfer Guide for GPA requirements if the receiving institution. (In Admissions/Advising.)
5. You must complete a minimum of 15 transferable semester credits at Red Rocks Community College.
6. You must file an Application for Graduation during the term in which you intend to graduate, according to the deadline published in the Schedule for that term. (Apply in Admissions or the Records office.)

## OTHER GRADUATION POLICIES

7. No more than 6 semester credits of independent study course work may be applied toward an Associate Degree program.
8. There is no limit on special-topics courses allowed to count toward a degree. In individual cases, the limit will be determined by the program area. Students taking special-topics courses should consult with their advisors regarding how these credits will apply toward the degree.
9. The college reserves the right to substitute or delete course work based on the current curriculum. Students are assured that if the curriculum changes, the college will make every effort to determine an equitable solution.
10. Students applying for an additional degree at Red Rocks Community College must complete an additional 15 credits at Red Rocks Community College and the requirements for the degree.
11. With the approval of a faculty advisor and a Vice President, Cooperative Education may count toward a degree.

## CATALOG REQUIREMENTS

You will graduate under the catalog requirements listed for the year that you were first enrolled. If you interrupt attendance for two consecutive semesters (excluding summer term) or more, and then return, the catalog of the readmission semester is the governing document. You may choose to use the catalog that is in effect the semester you graduate. You should be sure to obtain and keep a copy of your governing catalog.

## COURSES THAT ARE NOT APPLICABLE TOWARD ANY DEGREE

These courses transfer to one or more of the four-year colleges or universities in Colorado. All courses will count toward the AGS-G degree. **However, transferability depends on the four-year institution.** Additional courses may be transferable to one or more of the four-year colleges or universities in Colorado. For specific information, please consult an advisor in the Career Resource Center.

EDU 090	1-3 credits	Seminar in Peer Tutoring
EDU 092	1 credit	Portfolio Development Workshop
ENG 031	1-3 credits	Learning Unlimited English Review
ENH 094	1-3 credits	Sound and Spelling
ESL 011	1 credit	Pronunciation
ESL 090	3 credits	ESL Spelling/Vocabulary
ESL 091	3 credits	ESL Communication
ESL 092	3 credits	ESL Reading
ESL 093	3 credits	ESL Grammar
ESL 094	3 credits	ESL Writing
ESL 095	5 credits	ESL Intensive
ESL 096	3 credits	ESL Communication for Business
ESL 098	3 credits	TOEFL Preparation
GED 011	1-3 credits	GED Preparation
MAT 031	1-3 credits	Learning Unlimited Math Review
*MAT 056	3 credits	Introduction to Mathematics: Pre-Algebra
STS 060	1-3 credits	Learning Success Strategies

Reading (REA) courses will not count toward any degree.

\*This course may apply toward selected AAS degree programs.

# Instructional Programs

## Accounting

**Degree: Associate of Applied Science**

**Accounting Clerk Certificate: 32 Credits**

**Bookkeeping Clerk Certificate: 15 Credits**

The college offers an AAS degree in accounting with two options as well as two accounting certificates. If you plan to transfer to a baccalaureate institution you should consider the AA degree with a business emphasis. You should consult with an accounting faculty advisor early in your career at Red Rocks to explore all educational options.

### Degree Option 1

#### Accounting Paraprofessional Emphasis

The program prepares you to work as an accounting paraprofessional or accounting assistant.

Required Major Courses			Credits
ACC	121	Principles of Accounting I	4
ACC	122	Principles of Accounting II	4
ACC	137	Electronic Spreadsheets ( <i>Required Lab</i> )	4
ACC	146	Individual Income Tax	5
ACC	211	Intermediate Accounting I	5
ACC	226	Cost Accounting I	4
			26

#### Required Business-Related Courses

BTE	108*	Ten Key by Touch ( <i>Required Lab</i> )	1 1/3
BUS	115	Introduction to Business	3
BUS	216	Legal Environment of Business	4
BUS	217	Business Communication and Report Writing	3
CIS	118	Microcomputer Applications ( <i>Required Lab</i> )	5
			16 1/3

\* Must see faculty advisor.

Electives (Select at least 9 credits with a minimum of six credits having ACC prefixes.):

Note: Students planning to transfer should see an accounting faculty advisor.

ACC	101*	Fundamentals of Accounting I	3
ACC	105*	Expanded Fundamentals of Accounting	5
ACC	136	Computerized Accounting ( <i>Required Lab</i> )	4
ACC	138	Payroll and Sales Tax	3
ACC	161	Understanding Financial Statements	3
ACC	190	Financial Investigations	3
ACC	212	Intermediate Accounting II	5
ACC	216	Governmental Accounting	3
ACC	227	Cost Accounting II	3
ACC	246	Business Taxation	3
ACC	297	Cooperative Education ( <i>maximum of 3 credits</i> )	3
ACC	299	Independent Study	1-3
BUS	XXX	Approved BUS electives	3
CIS	XXX	Approved CIS electives	3
ECO	XXX	Approved ECO electives	3
MAN	XXX	Approved MAN electives	3
MAR	XXX	Approved MAR electives	3
			9

\* One of these courses may be allowed as an elective if taken prior to ACC 121. Consult a faculty advisor.

#### General Education Requirements

ECO	201	Principles of Macroeconomics	3
ENG	100	Composition Fundamentals or	
ENG	121	English Composition I	3
MAT	100	Introductory Algebra or above	3
SPE	125	Interpersonal Communications	3

Credit from any one of the following two areas: 3-5  
*Humanities* (ART, FRE, GER, HUM, LIT, MUS, PHI, SPA, THE)

*Science* (AST, BIO, CHE, GEY, PHY) 15-17

Total Required Credits (minimum)	66 1/3-68 1/3
Total Required Contact Hours (minimum)	995

Note: In order to receive a degree in Accounting, you must earn a minimum of C in all courses having an ACC prefix. For sequential course scheduling, plan to see an accounting faculty advisor.

## Degree Option 2 Accounting Technician Emphasis

Upon successful completion of this program you should be able to perform bookkeeping and general office duties in a small office or to begin a career path as an accounting technician in a large, departmentalized organization.

Required Major Courses			Credits
ACC	105*	Expanded Fundamentals of Accounting	5
ACC	121*	Principles of Accounting I	4
ACC	122	Principles of Accounting II	4
ACC	136	Computerized Accounting ( <i>Required Lab</i> )	4
ACC	137	Electronic Spreadsheets ( <i>Required Lab</i> )	4
ACC	138	Payroll and Sales Tax	3
ACC	XXX	Electives	5-6
			29-30

### Required Business-Related Courses

BTE	108*	Ten Key by Touch ( <i>Required Lab</i> )	1 1/3
BTE	151	Word Processing I ( <i>Required Lab</i> )	4
BTE	161	Filing and Records Management	2
BUS	115	Introduction to Business	
or			
BUS	216	Legal Environment of Business	3-4
BUS	217	Business Communications and Report Writing	3
CIS	118	Microcomputer Applications ( <i>Required Lab</i> )	5
			18 1/3-19 1/3

### General Education Requirements

ECO	201	Principles of Economics	3
ENG	100	Composition Fundamentals	
or			
ENG	121	English Composition I	3
MAT	100	Introductory Algebra or above	3
SPE	125	Interpersonal Communications	3
Credit from any one of the following two areas:			3-5
<i>Humanities</i> (ART, FRE, GER, HUM, LIT, MUS, PHI, SPA, THE)			
<i>Science</i> (AST, BIO, CHE, GEY, PHY)			15-17

Total Required Credits (minimum)	62 1/3-66 1/3
Total Required Contact Hours (minimum)	935

**Note:** In order to receive a degree in Accounting, you must earn a minimum of C in all courses having an ACC prefix. For a sequential course scheduling plan, please see an accounting faculty advisor.

\* Must see a faculty advisor.

## Bookkeeping Clerk Certificate (1 Term)

Upon successful completion of this program you should possess the skills and knowledge to perform entry-level bookkeeping tasks.

Required Major Courses			Credits
ACC	105*	Expanded Fundamentals of Accounting	5
ACC	138	Payroll and Sales Tax	3
BTE	100*	Touch Keyboarding ( <i>Required Lab</i> )	1 1/3-4
and			
BTE	108*	Ten Key by Touch ( <i>Required Lab</i> )	
or			
Elective with approval of faculty advisor			
CIS	118	Microcomputer Applications ( <i>Required Lab</i> )	5
COM	115	The Job Search Process	1
Total Required Credits			15 1/3-18
Total Required Contact Hours (minimum)			230

## Accounting Clerk Certificate (2 Terms)

Upon successful completion of this program you should possess the skills and knowledge to perform a variety of functions in a manual or computerized accounting system. Examples include Bookkeeper Assistant, Inventory Clerk, Payroll Clerk, Accounts Payable Clerk, Accounts Receivable Clerk and Fixed Asset Clerk.

Required Major Courses			Credits
ACC	105*	Expanded Fundamentals of Accounting	5
ACC	136	Computerized Accounting ( <i>Required Lab</i> )	4
ACC	137	Electronic Spreadsheets ( <i>Required Lab</i> )	4
ACC	138	Payroll and Sales Tax	3
			16
Required Business-Related Courses			
BTE	100*	Touch Keyboarding ( <i>Required Lab</i> )	1 1/3-4
and			
BTE	108*	Ten Key by Touch ( <i>Required Lab</i> )	
or			
Elective with approval of faculty advisor			
BTE	161	Filing and Records Management	2
BUS	115	Introduction to Business	3
CIS	118	Microcomputer Applications ( <i>Required Lab</i> )	5
			11 1/3-14

### Other Course Requirements

COM	115	The Job Search Process	1
SPE	125	Interpersonal Communications	3
			4
Total Required Credits			31 1/3-34
Total Required Contact Hours (minimum)			470

**Note:** In order to receive a certificate, you must earn a minimum of C in all courses having an ACC prefix.

\* You must see a faculty advisor.

# Art

## Associate of Arts Degree With an Emphasis in Art

The completion of the following courses is appropriate if you plan to transfer to a four-year college or university to complete a major in art. This program provides basic preparation leading to art-related careers as well as to the teaching of art.

You are urged to consult with a faculty advisor before beginning any program of study.

*Red Rocks Community College's Art Department is now the only Colorado institution of higher learning offering instruction in gem setting, thanks to a \$3,000 grant from the Denver Area Council of the Gem and Mineral Society. The grant was used to purchase the jeweler's bench seen here with Red Rocks Jewelry Instructor, Norm Finfrock.*

<b>Recommended Courses</b>			<b>Credits</b>
ART	111	Art History I ( <i>Core</i> )	3
ART	112	Art History II ( <i>Core</i> )	3
ART	121	Drawing I	3
ART	122	Drawing II	3
ART	131	Design I	3
ART	132	Design II	3
ART	211	Painting I	3
ART	224	Sculpture I	3

### Core Curriculum Requirements

#### *English/Speech*

ENG	121	English Composition I	3
ENG	122	English Composition II	3
SPE	115	Principles of Speech Communication	3

*Humanities* (any course from the following) 3  
 Foreign Language 111, 112, 211, 212; HUM 121, 122, 123;  
 LIT 115, 201, 202; MUS 120, 121, 122; PHI 111, 112, 113;  
 THE 211, 212

*Mathematics* (any course from the following) 3  
 MAT 121, 125, 135, 201, 202

*Science* (any course from the following) 4  
 AST 101, 102; BIO 105, 111, 112; CHE 101, 102, 111, 112;  
 GEY 111, 121; PHY 105, 111, 112, 211, 212

*Social and Behavioral Sciences* (courses from two different disciplines) ANT  
 101, 111; ECO 201, 202; GEO 105; HIS 101, 102,  
 201, 202; POS 105, 111; PSY 101, 102; SOC 101, 102 9

### Electives 8

Electives must be selected from college-level transfer courses. No more than three credits in physical education may be counted.

**Total Required Credits 60**

# Auto Collision Technology

***(In cooperation with and held at the Warren Occupational Technical Center)***

**Degree: Associate of Applied Science  
Certificates: Five (NATEF) areas**

This is a National Certified Auto Collision Repair program with the primary purpose of preparing you for careers in the auto collision industry. You can also achieve the necessary credits to obtain an associate degree. A minimum of 37 ACT credits, 9 credits from Applied Mechanical Technology required courses, 15 general education credits and completion of one or more of the (NATEF) certificate areas of instruction are required for the AAS degree. Some of the courses may transfer to a bachelor degree in Automotive Management.

## Associate of Applied Science

<b>Required Courses</b>			<b>Credits</b>
ACT 120	GMAW (Mig) Welding		3
ACT 140	Outer Body Panel Replacement and Adjustment—Repair		3
ACT 160	Structural Analysis		3
ACT 164	Unibody Measurement		3
ACT 168	Anchoring, Pulling and Stress Relieving		3
ACT 170	Surface Preparation		5
ACT 174	Paint Mixing, Matching and Applying		5
ACT 178	Finish Defects, Causes and Cures		3
ACT 180	Plastic and Fiber Glass Parts Repair/Adhesives		3
ACT 184	Plastic Parts Repair/Welding		3
ACT 190	Automotive Damages Estimation		<u>3</u>
			37
AMT 100	Safety		3
AMT 105	Blueprints/Diagrams/Schematics		3
AMT 106	Basic Electricity/Electronics		<u>3</u>
			9
ACT 200	Apprenticeship ( <i>variable credit</i> )		
ACT 297	Cooperative Education ( <i>variable credit</i> )		
ACT 299	Independent Study ( <i>variable credit</i> )		
<b>General Education Requirements</b>			
<i>English/Speech</i> (COM, ENG, SPE) ( <i>any course level</i> )			3
<i>Mathematics</i> (100 or above)			3
Credit from any two of the following three areas:			<u>9</u>
<i>Humanities</i> (ART, FRE, GER, HUM, LIT, MUS, PHI, SPA, THE)			15
<i>Science</i> (AST, BIO, CHE, GEY, PHY)			
<i>Social and Behavioral Sciences</i> (ANT, ECO, GEO, HIS, POS, PSY, SOC)			
<b>Total Required Credits</b>			<b>61</b>
<b>Total Required Contact Hours</b>			<b>13721/2</b>

For the following Certificates please check with the instructor/advisor or the Course Description section of this Catalog for prerequisites.

## Non-Structural Analysis and Damage Repair Certificate

			<b>Credits</b>
ACT 120	GMAW (Mig) Welding		3
ACT 140	Outer Body Panel Replacement and Adjustment—Repair		3
ACT 145	Glass and Hardware		3-6
ACT 200	Apprenticeship ( <i>variable credit</i> )		
AMT 100	Safety		3
AMT 105	Blueprints/Diagrams/Schematics		3
AMT 106	Basic Electricity/Electronics		<u>3</u>
<b>Total Required Credits</b>			<b>21-24</b>

## Mechanical and Electrical Components Certificate

			<b>Credits</b>
ACT 200	Apprenticeship ( <i>variable credit</i> )		3-6
ACT 297	Cooperative Education ( <i>variable credit</i> )		3-6
ACT 299	Independent Study ( <i>variable credit</i> )		3-6
AMT 100	Safety		3
AMT 105	Blueprints/Diagrams/Schematics		3
AMT 106	Basic Electricity/Electronics		<u>3</u>
<b>Total Required Credits</b>			<b>18-27</b>

## Structural Analysis and Damage Repair Certificate

			<b>Credits</b>
ACT 120	GMAW (Mig) Welding		3
ACT 160	Structural Analysis		3
ACT 164	Unibody Measurement		3
ACT 168	Anchoring, Pulling and Stress Relieving		3
ACT 200	Apprenticeship ( <i>variable credit</i> )		
AMT 100	Safety		3
AMT 105	Blueprints/Diagrams/Schematics		3
AMT 106	Basic Electricity/Electronics		<u>3</u>
<b>Total Required Credits</b>			<b>21</b>

## Painting and Refinishing Certificates

			<b>Credits</b>
ACT 170	Surface Preparation		5
ACT 174	Paint Mixing, Matching and Applying		5
ACT 178	Finish Defects, Causes and Cures		3
ACT 200	Apprenticeship ( <i>variable credit</i> )		
AMT 100	Safety		3
AMT 105	Blueprints/Diagrams/Schematics		3
AMT 106	Basic Electricity/Electronics		<u>3</u>
<b>Total Required Credits</b>			<b>22</b>

## Plastics and Adhesives Certificate

			<b>Credits</b>
ACT 180	Plastic and Fiber Glass Parts Repair/Adhesives		3
ACT 184	Plastic Parts Repair/Welding		3
ACT 200	Apprenticeship ( <i>variable credit</i> )		
AMT 100	Safety		3
AMT 105	Blueprints/Diagrams/Schematics		3
AMT 106	Basic Electricity/Electronics		<u>3</u>
<b>Total Required Credits</b>			<b>15</b>

# Automotive Technology

**(In cooperation with and held at the Warren Center)**

**Degree: Associate of Applied Science**  
**Certificates: 8 different NATEF specialties**  
**Master Technician:**  
**(completion of all 8 NATEF areas)**

This program is a nationally certified automotive repair program (NATEF) providing you with entry level skills in the automotive industry or upgrading for those currently in the field. This is an open-entry program where students may begin at several designated starting times during the year. Therefore, you may complete some of the courses, enter the work force, then return to complete requirements for the AAS degree, certificates, or to upgrade specific skills. Demonstrated mastery of skills is required. All automotive (AUM) courses are held at the Warren Tech. Auto Shop. The instructors are ASE Certified Master Technicians.

You should consult with an Automotive Technology advisor before beginning any program of study.

## Associate of Applied Science

The Associate of Applied Science degree (60–66 semester credits), requires a minimum of 15 semester credits of academic general education courses and a minimum of 45 semester credits from five of the eight NATEF specialty areas listed. The AUM courses offered in the NATEF specialty areas must be completed as groups to satisfy requirements.

### General Education (Required Minimum: 15 Semester Credits)

*English/Speech* (COM, ENG, SPE) minimum 3 semester credits

*Mathematics* (MAT 100 or above) minimum 3 semester credits

Take a minimum of 9 semester credits from any two of the following three areas:

*Humanities* (ART, FRE, GER, HUM, LIT, MUS, PHI, SPA, THE)

*Science* (AST, BIO, CHE, ENV, GEY, PHY)

*Social/Behavioral Science* (ANT, ECO, GEO, HIS, POS, PSY, SOC)

### Automotive Courses

**(Required Minimum: 45 Semester Credits)**

AUM 101 Basic Mechanics/Safety

Credits

1

*(Required course for all students new to the program)*

### NATEF Specialty Areas:

#### Brakes

AUM	102	Brakes I	2
AUM	103	Brakes II	3
<b>Total Required Credits</b>			<b>5</b>
<b>Total Contact Hours (minimum)</b>			<b>112.5</b>

#### Suspension and Steering

AUM	104	Suspension I	2
AUM	105	Suspension II	3
AUM	106	Alignment I	3
AUM	107	Alignment II	1
<b>Total Required Credits</b>			<b>9</b>
<b>Total Contact Hours (minimum)</b>			<b>202.5</b>

#### Heating and Air Conditioning

AUM	108	Heating and A/C	7
<b>Total Required Credits</b>			<b>7</b>
<b>Total Contact Hours</b>			<b>157.5</b>

#### Manual Drive Train and Axles

AUM	109	Manual Drive Train I	3
AUM	110	Manual Drive Train II	6
<b>Total Required Credits</b>			<b>9</b>
<b>Total Contact Hours (minimum)</b>			<b>202.5</b>

#### Automatic Transmission/Transaxles

AUM	114	Auto Transmission I	3
AUM	115	Auto Transmission II	4
<b>Total Required Credits</b>			<b>7</b>
<b>Total Contact Hours (minimum)</b>			<b>157.5</b>

#### Engine Performance

AUM	118	Tune-up I	3
AUM	119	Tune-up II	3
AUM	120	Emissions	2
AUM	123	Fuel Systems I	2
AUM	125	Fuel Systems II	1
AUM	126	Fuel Injection	3
<b>Total Required Credits</b>			<b>14</b>
<b>Total Contact Hours (minimum)</b>			<b>315</b>

#### Electrical and Electronic Systems

AUM	127	Basic Electrical I	6
AUM	128	Advanced Electrical II	6
<b>Total Required Credits</b>			<b>12</b>
<b>Total Contact Hours (minimum)</b>			<b>270</b>

#### Engine Repair

AUM	131	Basic Engines I	3
AUM	132	Engine Overhaul II	5
<b>Total Required Credits</b>			<b>8</b>
<b>Total Contact Hours (minimum)</b>			<b>180</b>

**Other Electives**

AUM 297 Cooperative Education 1 to 3  
 AUM 299 Independent Study 1 to 3  
*No more than 5 semester credits from these two courses may be used to substitute for NATEF specialty area courses.*

**Suggested Sequence**

The suggested sequence of classes below are for full-time students seeking an AAS degree in Automotive Technology. If you are a part-time student it will take longer to complete the sequence. Some courses might not be offered each session.

First Session	Credits
AUM 101 Basic Mechanics/Safety	1
AUM XXX NATEF specialty area courses	9
English/Speech General Ed.uation Requirement	3
Mathematics General Ed.uation Requirement	<u>3</u>
	16
Second Session	Credits
AUM XXX NATEF specialty area courses	12
Science, Humanities, or Social/Behavioral Science	
General Ed.uation Requirement	<u>3</u>
	15
Third Session	Credits
AUM XXX NATEF specialty area courses	12
Science, Humanities, or Social/Behavioral Science	
General Ed.uation Requirement	<u>3</u>
	15
Fourth Session	Credits
AUM XXX NATEF specialty area courses	11
Science, Humanities, or Social/Behavioral Science	
General Ed.uation Requirement	<u>3</u>
	14
<b>Total Required Semester Credits</b>	<b>60-66</b>
<b>Total Required Contact Hours (minimum)</b>	<b>1012 1/2</b>

**Automotive Technology Certificates**

Contact an Automotive Technology advisor for prerequisites before beginning any NATEF certificate program. All AUM courses in any NATEF specialty area must be successfully completed to satisfy certificate requirements for that specialty area. Successful completion of all AUM courses in all eight of the NATEF specialty areas results in a Master Technician Certificate.

**Biology**

**Associate of Science Degree with an Emphasis in Biology**

The completion of the following courses is appropriate for those of planning to transfer to a four-year college or university to complete a major in biology. You are urged to consult with a faculty advisor before beginning any program of study.

Required Courses	Credits
BIO 111 General College Biology I ( <i>Core</i> )	5
BIO 112 General College Biology II ( <i>Core</i> )	5
CHE 111 General College Chemistry I ( <i>Core</i> )	5
CHE 112 General College Chemistry II ( <i>Core</i> )	5
MAT 121 College Algebra ( <i>Core</i> )	4
PHY 111 Physics: Algebra-based I ( <i>Core</i> )	<u>5</u>
	29

**Recommended Courses (at least 10 credits)**

BIO 201 Human Anatomy and Physiology I	4
BIO 203 Human Anatomy and Physiology II	4
BIO 205 Microbiology	4
BIO 211 Cellular Biology	4
BIO 225 General Zoology	5
BIO 226 General Botany	5
BIO 228 Field Biology	2-3
GEY 121 Historical Geology	<u>4</u>
	at least 10

**Core Curriculum Requirements**

<i>English/Speech</i>		
ENG 121 English Composition I		3
ENG 122 English Composition II		3
SPE 115 Principles of Speech Communication		3
<i>Humanities</i> (any two courses from the following) 6		
ART 111, 112; Foreign Language 111, 112, 211, 212; HUM 121, 122, 123; LIT 115, 201, 202; MUS 120, 121, 122; PHI 111, 112, 113; THE 211, 212		
<i>Social and Behavioral Sciences</i> (courses from two different disciplines) ANT 101, 111; ECO 201, 202; GEO 105; HIS 101, 102, 201, 202; POS 105, 111; PSY 101, 102; SOC 101, 102 <u>6</u>		

**Total Required Credits 60**





*\*Principles of Marketing and Principles of Management will be accepted at four-year institutions provided that the community college student completes the prerequisites (i.e. two accounting courses, one economics course, and business statistics) and has sophomore standing before enrolling in either Principles of Marketing or Principles of Management.*

*\*\* See faculty advisor*

**Note:** Colorado community colleges have a Business Transfer Agreement with the following four-year colleges in the state: Adams State College, Colorado State University, Fort Lewis College, Mesa State College, Metropolitan State College of Denver, University of Colorado at Boulder, University of Colorado at Denver, University of Southern Colorado and Western State College. Please see a faculty advisor or the Transfer Center for more specific information.

**Note:** Some four-year colleges or universities may require a comprehensive exam before accepting credits for certain business courses. Consult a faculty advisor for additional information.

*Red Rocks Community College offers a variety of degrees and certificates in the fields of Business, Business Administration and Business Technology. No matter what training you may be seeking, know that Red Rocks' friendly atmosphere, personal attention and quality instruction make a wonderful difference in your education.*

# Business Administration

## Degree: Associate of Applied Science

### Certificates: Variable

Business organizations are always looking for people who can help them achieve their goals. Training in business helps increase an individual's opportunity for advancement within a corporate or administrative structure. Both large and small businesses stress the need for academic preparation in addition to work experience. Depending upon the level of work and the company, advanced degrees may be required.

The Associate of Applied Science degree in Business Administration is available with an emphasis in one of the following areas (see the following pages for more information):

- Commercial Food Service Management
- Financial Services Management–Banking
- Human Resources Management
- Management and Supervision
- Marketing
- Pre-Hospital Emergency Medical Services Management
- Purchasing
- Real Estate
- Transportation and Logistics Management

*\*Principles of Marketing and Principles of Management will be accepted at four-year institutions provided that the community college student completes the prerequisites (i.e. two accounting courses, one economics course, and business statistics) and has sophomore standing before enrolling in either Principles of Marketing or Principles of Management.*

**Note:** Please see your Business Administration faculty advisor for choice of electives and general education courses, program planning, and transfer information.

The following pages give a recommended order of completion of all courses for most areas of emphasis in the Business Administration degree. This order is structured for a full-time student. If you are a part-time student you should see your advisor for modifying this order. If you are uncertain about which area to major in, you should see your advisor for comparison lists of courses required for each of the areas of emphasis. This will allow you to take classes which are required in various areas of emphasis until you have chosen a specific area of emphasis.

To complete an Associate of Applied Science degree in Business Administration, you must complete the following groups of courses:

1. The appropriate Business Degree Core Course Requirements
2. The General Education Course Requirements
3. The Area of Emphasis Course Requirements

These courses are combined and given in the recommended order of completion information below:

**Area of Emphasis:  
Commercial Food Service Management**

**Recommended Sequence of Courses**

<b>Fall</b>			
BUS	110	Mathematics of Business/Personal Finance	3
BUS	115	Introduction to Business	3
ACC	121	Principles of Accounting	4
ENG	121	English Composition I	3
MAT	100	Introductory Algebra (or higher) (Prerequisite: MAT 056 or equivalent)	3
PHI	112	Ethics	3
			19
<b>Spring</b>			
BUS	216	Legal Environment of Business	4
MAN	116	Principles of Supervision	3
MAN	226	Principles of Management	3
MAR	216	Principles of Marketing	3
CIS	118	Microcomputer Applications (Required Lab)	5
			18
<b>Fall</b>			
RTA*	101	Restaurant Arts I	12
BUS	217	Business Communications and Report Writing (Prerequisite: ENG 100 or 121 or equivalent)	3
ECO	201	Principles of Macroeconomics	3
			18
<b>Spring</b>			
RTA*	102	Restaurant Arts II	12
General Education (see advisor for approval)			3
			15
<b>Total Required Credits</b>			<b>70</b>

\*If you are taking RTA 101 or RTA 102, you must register through Red Rocks Community College AND at Warren Center (where the classes are held).

**Certificate:  
Commercial Food Service Management**

**Recommended Sequence of Courses**

<b>Fall</b>			
RTA*	101	Restaurant Arts I	12
BUS	110	Mathematics of Business/Personal Finance	3
MAN	116	Principles of Supervision	3
			18
<b>Spring</b>			
RTA*	102	Restaurant Arts II	12
MAN	226	Principles of Management	3
ACC**	101	Fundamentals of Accounting I	3
BUS	217	Business Communications and Report Writing (Prerequisite: ENG 100 or 121 or equivalent)	3
			21
<b>Total Required Credits</b>			<b>39</b>

\*If you are taking RTA 101 and RTA 102 you must register through Red Rocks Community College AND at Warren Center (where the classes are held).

\*\*ACC 101 is required for the Commercial Food Service Management certificate program; however, you could take ACC 121 for the certificate which would then also meet the accounting requirement for the degree.

**Area of Emphasis:  
Financial Services—Banking\***

**Recommended Sequence of Courses**

<b>Fall</b>			
BUS	110	Mathematics of Business/Personal Finance	3
BUS	115	Introduction to Business	3
BTE	100	Touch Keyboarding (Required Lab)	2 2/3
or			
Business Related Elective (see advisor for approval)			3
ACC	121	Principles of Accounting I	4
ENG	121	English Composition I	3
			15 2/3-16
<b>Spring</b>			
MAN	116	Principles of Supervision	3
ACC	122	Principles of Accounting II (Prerequisite: ACC 121 or equivalent)	4
CIS	118	Microcomputer Applications (Required Lab)	5
ECO	201	Principles of Macroeconomics	3
			15
<b>Fall</b>			
MAN	225	Managerial Finance (Fall only; Prerequisites: ACC 121, 122; ECO 201)	3
BUS	216	Legal Environment of Business	4
BUS	217	Business Communications and Report Writing (Prerequisite: ENG 100 or 121 or equivalent)	3
FIS	217	Principles of Banking	3
FIS	218	The Trust Business	3
MAT	100	Introductory Algebra (or higher) (Prerequisite: MAT 056 or equivalent)	3
			19
<b>Spring</b>			
MAN	226	Principles of Management	3
MAR	216	Principles of Marketing	3
PHI	112	Ethics	3
General Education (see advisor for approval)			3
Business Related Elective (see advisor for approval)			
or			
FIS 297 Cooperative education			3
			18
<b>Total Required Credits</b>			<b>67 2/3-68</b>

\*Principles of Marketing and Principles of Management will be accepted at four-year institutions provided that the community college student completes the prerequisites (i.e. two accounting courses, one economics course, and business statistics) and has sophomore standing before enrolling in either Principles of Marketing or Principles of Management.

\*For information about enrolling in any of the following FIS classes (required or electives but not offered at Red Rocks Community College), contact the American Institute of Banking (AIB) at Independence Plaza, 1050 17th Street, Suite 450, Denver, CO 80265.

Credits earned at the AIB for these FIS courses are transferable to Red Rocks Community College. For additional information, please see a Business faculty advisor.

FIS	205	Bank Investments and Funds Management	2
FIS	206	Law and Banking	3
FIS	210	Customer Lending	3
FIS	212	Commercial Lending	3
FIS	217	Principles of Banking	3
FIS	218	The Trust Business	3
FIS	219	Residential Mortgage Lending	3

## Area of Emphasis: Human Resources Management

### Recommended Sequence of Courses

<b>Fall</b>			
BUS	110	Mathematics of Business/Personal Finance	3
BUS	115	Introduction to Business	3
ACC	121	Principles of Accounting I	4
ENG	121	English Composition I	3
MAT	100	Introductory Algebra ( <i>or higher</i> )	3
		<i>(Prerequisite: MAT 056 or equivalent)</i>	
PHI	112	Ethics	3
			19
<b>Spring</b>			
MAN	116	Principles of Supervision	3
BUS	216	Legal Environment of Business	4
BUS	217	Business Communications and Report Writing	3
		<i>(Prerequisite: ENG 100 or 121 or equivalent)</i>	
CIS	118	Microcomputer Applications ( <i>Required Lab</i> )	5
		General Education (see advisor for approval)	3
			18
<b>Fall</b>			
MAN	200	Human Resources Management ( <i>Fall only</i> )	3
MAN	212	Negotiation and Conflict Resolution ( <i>Fall only</i> )	3
MAN	215	Organizational Behavior ( <i>Fall only</i> )	3
MAN	216	Employee Recruiting and Training ( <i>Fall only</i> )	3
BUS	226	Business Statistics	3
		<i>(Fall only; Prerequisite: MAT 105 or permission)</i>	
ECO	201	Principles of Macroeconomics	3
			18
<b>Spring</b>			
MAN	226	Principles of Management	3
MAN	217	Compensation/Employee Benefits Management	3
		<i>(Spring only)</i>	
MAR	216	Principles of Marketing	3
		Business Related Elective ( <i>see advisor for approval</i> )	3
		<b>or</b>	
		MAN 297 Cooperative Education	15
			<b>70</b>

## Certificate: Human Resources Management

### Recommended Sequence of Courses

<b>Fall</b>			
MAN	200	Human Resources Management ( <i>Fall only</i> )	3
MAN	212	Negotiation and Conflict Resolution ( <i>Fall only</i> )	3
MAN	215	Organizational Behavior ( <i>Fall only</i> )	3
MAN	216	Employee Recruiting and Training	3
		<i>(Fall only)</i>	
BUS	226	Business Statistics ( <i>Fall only</i> )	3
			15
<b>Spring</b>			
MAN	217	Compensation/Employee Benefits Management	3
		<i>(Spring only)</i>	
		Business Related Electives ( <i>see advisor for approval</i> )	6
		<b>or</b>	
		MAN 297 Cooperative Education	3
PHI	112	Ethics	3
			12
		<b>Total Required Credits</b>	<b>27</b>

## Area of Emphasis: Management and Supervision

### Recommended Sequence of Courses

<b>Fall</b>			
BUS	110	Mathematics of Business/Personal Finance	3
BUS	115	Introduction to Business	3
ACC	121	Principles of Accounting I	4
ENG	121	English Composition I	3
PHI	112	Ethics	3
			16
<b>Spring</b>			
MAN	116	Principles of Supervision	3
ACC	122	Principles of Accounting II	4
		<i>(Prerequisite: ACC 121 or equivalent)</i>	
CIS	118	Microcomputer Applications ( <i>Required Lab</i> )	5
ECO	201	Principles of Macroeconomics	3
MAT	100	Introductory Algebra ( <i>or higher</i> )	3
		<i>(Prerequisite: MAT 056 or equivalent)</i>	18
<b>Fall</b>			
MAN	117	Time Management ( <i>Fall only</i> )	1
MAN	225	Managerial Finance	3
		<i>(Fall only; Prerequisites: ACC 121, ACC 122, ECO 201)</i>	
MAN	226	Principles of Management	3
MAN	200	Human Resources Management	3
		<i>(Fall only)</i>	
BUS	216	Legal Environment of Business	4
BUS	217	Business Communications and Report Writing	3
		<i>(Prerequisite: ENG 100 or 121 or equivalent)</i>	17
<b>Spring</b>			
MAN	239	Business Policies ( <i>Spring only</i> )	3
MAN	240	Management Information Systems ( <i>Spring only</i> )	3
		<i>(Prerequisites: ACC 121, BUS 115, 216, CIS 118; ECO 201; MAN 225, 226 Corequisite: MAN 239)</i>	
MAR	216	Principles of Marketing	3
		Business Related Elective ( <i>see advisor for approval</i> )	3
		<b>or</b>	
		MAN 297 Cooperative Education	3
		General Education ( <i>see advisor for approval</i> )	3
			15
		<b>Total Required Credits</b>	<b>66</b>

## Business Administration

### Certificate: Management and Supervision

#### Recommended Sequence of Courses

Fall			
MAN	116	Principles of Supervision	3
ACC	121	Accounting Principles I	4
BUS	110	Mathematics of Business/Personal Finance	3
CIS	118	Microcomputer Applications ( <i>Required Lab</i> )	5
			15
Spring			
MAN	226	Principles of Management	3
MAR	216	Principles of Marketing	3
BUS	216	Legal Environment of Business	4
BUS	217	Business Communications and Report Writing ( <i>Prerequisite: ENG 100 or 121 or equivalent</i> )	3
Business Related Electives ( <i>see advisor for approval</i> )			
or			
MAN	297	Cooperative Education	3
			16
<b>Total Required Credits</b>			<b>31</b>

### Certificate: Small Business Management

#### Required Courses

SBM	101	Starting a Small Business	1
SBM	102	Managing a Small Business	1
SBM	105	Financing a Small Business	1
SBM	107	Recordkeeping for a Small Business	1
SBM	109	Analyzing Financial Statements Used in Small Business	1
SBM	115	Marketing for a Small Business	1
SBM	206	Legal Aspects of a Small Business ( <i>Spring only</i> )	1
Business Related Electives ( <i>see below</i> )			11

#### Elective Courses: (*select 11 credits from the following list*)

ACC	101	Fundamentals of Accounting I	3
or			
		ACC 121 Principles of Accounting I (4 credits)	
ECO	119	Applied Economics	1
MAN	297	Cooperative Education	1
MAR	219	Public Relations Management	3
SBM	116	Sales Techniques for the Entrepreneur ( <i>Fall only</i> )	1
SBM	118	Starting and Marketing a Professional Service ( <i>Fall only</i> )	1
SBM	119	Purchasing, Pricing and Inventory Control ( <i>Fall only</i> )	1
SBM	130	Business Writing Skills for the Entrepreneur ( <i>Spring only</i> )	1
SBM	215	Managing Human Resources in a Small Business ( <i>Fall only</i> )	1
SBM	290	Special Topics ( <i>Spring only</i> )	1
<b>Total Required Credits</b>			<b>18</b>

### Area of Emphasis: Marketing

#### Recommended Sequence of Courses

Fall			
BUS	110	Mathematics of Business/Personal Finance	3
BUS	115	Introduction to Business	3
ACC	121	Principles of Accounting I	4
ENG	121	English Composition I	3
MAT	100	Introductory Algebra ( <i>or higher</i> ) ( <i>Prerequisite: MAT 056 or equivalent</i> )	3
			16
Spring			
MAR	108	Principles of Salesmanship ( <i>Spring only</i> )	3
BUS	217	Business Communications and Report Writing ( <i>Prerequisite: ENG 100 or 121 or equivalent</i> )	3
CIS	118	Microcomputer Applications ( <i>Required Lab</i> )	5
PHI	112	Ethics	3
General Education ( <i>see advisor for approval</i> )			3
			17
Fall			
MAR	109	Advertising and Promotion ( <i>Fall only</i> )	3
MAR	218	Sales Management ( <i>Fall only; Prerequisite: MAR 108—Spring only</i> )	3
or			
MAR 219 Public Relations Management ( <i>Fall only</i> )			
MAR	217	Principles of Purchasing ( <i>Fall only</i> )	3
BUS	216	Legal Environment of Business	4
Business Related Electives ( <i>see advisor for approval</i> )			6
			19
Spring			
MAN	116	Principles of Supervision	3
MAR	216	Principles of Marketing	3
MAR	214	Wholesaling and Distribution ( <i>Spring only</i> ) or	3
MAR 215 Retail Management ( <i>Spring only</i> )			
MAR	115	Visual Merchandising ( <i>Spring only</i> )	3
Business Related Elective ( <i>see advisor for approval</i> )			3
or			
MAR 297 Cooperative Education			
ECO	201	Principles of Macroeconomics	3
			18
<b>Total Required Credits</b>			<b>70</b>

### Certificate: Marketing

#### Recommended Sequence of Courses

Fall			
MAR	109	Advertising and Promotion ( <i>Fall only</i> )	3
BUS	110	Mathematics of Business/Personal Finance	3
ACC	121	Principles of Accounting I	4
CIS	118	Microcomputer Applications ( <i>Required Lab</i> )	5
			15
Spring			
MAR	108	Principles of Salesmanship ( <i>Spring only</i> )	3
BUS	216	Legal Environment of Business	4
BUS	217	Business Communications and Report Writing ( <i>Prerequisite: ENG 100 or 121 or equivalent</i> )	3
MAR	216	Principles of Marketing	3
Business Related Elective ( <i>see advisor for approval</i> )			3
or			
MAR 297 Cooperative Education			16
<b>Total Required Credits</b>			<b>31</b>

## Area of Emphasis: Pre-Hospital Emergency Medical Services Management

### Recommended Sequence of Courses

<b>Fall</b>			
BUS	110	Mathematics of Business/Personal Finance	3
BUS	115	Introduction to Business	3
ACC	121	Principles of Accounting I	4
ENG	121	English Composition I	3
PHI	112	Ethics	<u>3</u>
			16
<b>Spring</b>			
MAN	116	Principles of Supervision	3
MAN	212	Negotiation and Conflict Resolution ( <i>Fall only</i> )	3
EMP	101	Introduction to Emergency Management	3
CIS	118	Microcomputer Applications ( <i>Required Lab</i> )	5
ECO	201	Principles of Macroeconomics	<u>3</u>
			17
<b>Fall</b>			
MAN	117	Time Management ( <i>Fall only</i> )	1
MAN	200	Human Resources Management ( <i>Fall only</i> )	3
MAN	226*	Principles of Management	3
BUS	217	Business Communications and Report Writing ( <i>Prerequisite: ENG 100 or 121 or equivalent</i> )	3
MAR	216*	Principles of Marketing	3
MAR	217	Principles of Purchasing ( <i>Fall only</i> )	3
MAT	100	Introductory Algebra ( <i>or higher</i> ) ( <i>Prerequisite: MAT 056 or equivalent</i> )	<u>3</u>
			19
<b>Spring</b>			
EMS	227	Emergency Medical Technician/Basic	10
Business Related Electives ( <i>see advisor for approval</i> )			2
BUS	216	Legal Environment of Business	4
General Education ( <i>see advisor for approval</i> )			<u>3</u>
			19
<b>Total Required Credits</b>			<b>71</b>

\*Principles of Marketing and Principles of Management will be accepted at four-year institutions provided that the community college student completes the prerequisites (i.e. two accounting courses, one economics course, and business statistics) and has sophomore standing before enrolling in either Principles of Marketing or Principles of Management.

## Area of Emphasis: Purchasing Management

### Recommended Sequence of Courses

<b>Fall</b>			
BUS	110	Mathematics of Business/Personal Finance	3
BUS	115	Introduction to Business	3
ACC	121	Principles of Accounting I	4
ENG	121	English Composition I	3
PHI	112	Ethics	<u>3</u>
			16
<b>Spring</b>			
MAN	116	Principles of Supervision	3
MAR	108	Principles of Salesmanship ( <i>Spring only</i> )	3
BUS	216	Legal Environment of Business	4
CIS	118	Microcomputer Applications ( <i>Required Lab</i> )	5
MAT	100	Introductory Algebra ( <i>or higher</i> ) ( <i>Prerequisite: MAT 056 or equivalent</i> )	<u>3</u>
			18
<b>Fall</b>			
MAN	210	Cost Effective MRO Buying ( <i>Fall only</i> )	3
MAN	211	Inventory Management ( <i>Fall only</i> )	3
MAN	212	Negotiation and Conflict Resolution ( <i>Fall only</i> )	3
MAR	217	Principles of Purchasing ( <i>Fall only</i> )	3
BUS	217	Business Communications and Report Writing ( <i>Prerequisite: ENG 100 or 121 or equivalent</i> )	<u>3</u>
			15
<b>Spring</b>			
MAN	226*	Principles of Management	3
MAR	216*	Principles of Marketing	3
Business Related Elective ( <i>see advisor for approval</i> )			3
<b>or</b>			
ECO	201	MAN 297 Cooperative Education Principles of Macroeconomics	3
General Education ( <i>see advisor for approval</i> )			<u>3</u>
			15
<b>Total Required Credits</b>			<b>64</b>

## Certificate: Purchasing Management

### Recommended Sequence of Courses

<b>Fall</b>			
MAN	210	Cost Effective MRO Buying ( <i>Fall only</i> )	3
MAN	211	Inventory Management ( <i>Fall only</i> )	3
MAN	212	Negotiation and Conflict Resolution ( <i>Fall only</i> )	3
MAR	217	Principles of Purchasing ( <i>Fall only</i> )	<u>3</u>
			12
<b>Spring</b>			
MAN	226*	Principles of Management	3
MAR	108	Principles of Salesmanship ( <i>Spring only</i> )	3
PHI	112	Ethics	3
Business Related Elective ( <i>see advisor for approval</i> )			<u>3</u>
			12
<b>Total Required Credits</b>			<b>24</b>

## Business Administration

### Area of Emphasis: Real Estate

#### Recommended Courses

ACC	121	Principles of Accounting I	4
BUS	110	Mathematics of Business/Personal Finance	3
BUS	115	Introduction to Business	3
BUS	216	Legal Environment of Business	4
BUS	217	Business Communications and Report Writing	3
MAR	216	Principles of Marketing	3
MAN	226	Principles of Management	3
MAN	116	Principles of Supervision	3
CIS	118	Microcomputer Applications ( <i>Required Lab</i> )	5
			<u>31</u>

#### General Education Course Requirements

##### English/Speech:

ENG	121	English Composition I	3
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##### Humanities:

PHI	112	Ethics	3
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##### Mathematics:

MAT	100	Introductory Algebra ( <i>or higher level</i> )	3
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##### Social and Behavioral Sciences:

ECO	201	Principles of Macroeconomics	3
		General Education Elective ( <i>See advisor for approval</i> )	3
			<u>3</u>
			15

#### Required Major Courses

REE	101	Real Estate Practice and Law	4
REE	102	Colorado Contracts and Regulations	4
REE	103	Trust Accounts and Record Keeping	1
REE	104	Current Legal Issues	1
REE	105	Real Estate Closings	3
REE	106	Practical Applications	3
			<u>16</u>
		<b>Total Required Credits</b>	<b>62</b>

### Certificate: Real Estate

REE	101	Real Estate Practice and Law	4
REE	102	Colorado Contracts and Regulations	4
REE	103	Trust Accounts and Record Keeping	1
REE	104	Current Legal Issues	1
REE	105	Real Estate Closings	3
REE	106	Practical Applications	3
			<u>16</u>
		<b>Total Required Credits</b>	<b>16</b>

### Area of Emphasis: Transportation and Logistics Management

#### Recommended Sequence of Courses

##### Fall

TLM	110	Introduction to Logistics	3
ACC	121*	Principles of Accounting I	4
BUS	110	Mathematics of Business/Personal Finance	3
BUS	115	Introduction to Business	3
ENG	121	English Composition I	3
			<u>16</u>

##### Spring

TLM	205	Modes of Transportation	3
ACC	122*	Principles of Accounting II ( <i>Prerequisite: ACC 121</i> )	4
BUS	217*	Business Communications and Report Writing ( <i>Prerequisite: ENG 100 or 121 or equivalent</i> )	3
CIS	118*	Microcomputer Applications ( <i>Required Lab</i> )	5
			<u>15</u>

##### Fall

BUS	216*	Legal Environment of Business	4
BUS	226*	Business Statistics ( <i>Fall only</i> )	3
GEO	105	World Regional Geography	3
MAN	116	Principles of Supervision	3
		<b>or</b>	
		TLM 290 Transportation/Logistics Internship	
ECO	201*	Principles of Macroeconomics	3
			<u>16</u>

##### Spring

MAN	226**	Principles of Management	3
MAR	216*	Principles of Marketing	3
ECO	202*	Principles of Microeconomics	3
MAT	121	College Algebra ( <i>Prerequisite: MAT 105 or equivalent</i> )	4
SPE	115	Principles of Speech Communication	3
			<u>16</u>

#### **Total Required Credits**

**63**

\*Part of Business Transfer Agreement.

\*\*Principles of Marketing and Principles of Management are accepted at four-year institutions provided that the community college student completes the prerequisites (i.e., two accounting courses, one economics course, and business statistics) and has sophomore standing before enrolling in either Principles of Marketing or Principles of Management.

# Business Technology

## Degree: Associate of Applied Science

### Certificate: Variable Credits

These program options (*areas of emphasis*) are designed to prepare you for entry-level positions and/or advancement in businesses, governmental agencies and other institutions which employ persons in office occupations. If you are an individual aspiring for advanced work placement, you should expect to have several years of work experience in addition to the degree.

BTE 103 and BTE 104 may be waived or challenged with validated speed of 65 wpm for 5 minutes with 5 or fewer errors. Please see your BTE Faculty Advisor for choice of electives and general education courses, program planning, and transfer information. *Please also consult the Course Description section of this catalog for individual course prerequisites.* You must earn a minimum grade of C in all BTE, CIS, and BUS courses required for a certificate or degree.

### Area of Emphasis: Administrative Assistant

<b>Fall</b>			
BTE	102	Keyboarding Applications	4
BTE	125	Procedures for Workplace 2000	3
BUS	115	Introduction to Business	3
CIS	118	Microcomputer Applications	5
ENG	121	English Composition I	3
			<hr/>
			18

<b>Spring</b>			
BTE	103	Keyboarding Skillbuilding I	4
CIS	125	Word Processing I/WordPerfect	4
MAN	116	Principles of Supervision	3
MAN	120	Office Management	3
General Education Course			3
			<hr/>
			17

<b>Fall</b>			
BTE	161	Filing and Records Management	2
BTE	220	Machine Transcription	4
BUS	217	Business Communications and Report Writing	3
ACC	101	Fundamentals of Accounting I	3
MAT	100	Introductory Algebra ( <i>or higher</i> )	3
General Education Course			3
			<hr/>
			18

<b>Spring</b>			
BTE	162	Electronic Filing I	4
BUS	120	Business Mathematics by Machines	4
CIS	137	Desktop Publishing	4
Elective		3	
General Education Course			3
			<hr/>
			18

**Electives:**

- Business Technology (BTE)
- Computer Information Systems (CIS)
- Management (MAN)

**General Education Courses**

Credit from any two of the following three areas:  
*Humanities* (ART, FRE, GER, HUM, LIT, MUS, PHI, SPA, THE)  
*Science* (AST, BIO, CHE, GEY, PHY)  
*Social and Behavioral Sciences* (ANT, ECO, GEO, HIS, POS, PSY, SOC)

Total Required Credits 71

### Area of Emphasis: Legal Secretary

<b>Fall</b>			
BTE	102	Keyboarding Applications	4
BTE	125	Procedures for Workplace 2000	3
BUS	115	Introduction to Business	3
CIS	118	Microcomputer Applications	5
ENG	121	English Composition I	3
			<hr/>
			18

<b>Spring</b>			
BTE	103	Keyboarding Skillbuilding I	4
CIS	125	Word Processing/WordPerfect	4
MAT	100	Introductory Algebra ( <i>or higher</i> )	3
BTE	208	Legal Terminology	3
BTE	209	Legal Research	3
			<hr/>
			17

<b>Fall</b>			
BTE	104	Skillbuilding II	4
BTE	161	Filing and Records Management	2
BTE	297	Cooperative Education/Internship	3
<i>(Permission from BTE instructor required)</i>			
BUS	217	Business Communications and Report Writing	3
General Education Course			3
General Education Course			3
			<hr/>
			18

<b>Spring</b>			
BTE	162	Electronic Filing I	4
CIS	137	Desktop Publishing	4
BTE	220	Machine Transcription	4
BUS	120	Business Mathematics by Machines	4
General Education Course			3
			<hr/>
			19

**General Education Courses**

Credit from any two of the following three areas:  
*Humanities* (ART, FRE, GER, HUM, LIT, MUS, PHI, SPA, THE)  
*Science* (AST, BIO, CHE, GEY, PHY)  
*Social and Behavioral Sciences* (ANT, ECO, GEO, HIS, POS, PSY, SOC)

Total Required Credits 72



## Business Technology

### Area of Emphasis: Medical Office

Fall			
BTE	102	Keyboarding Applications	4
HEO	100	Medical Terminology	3
CIS	118	Microcomputer Applications	5
BTE	140	Medical Office I	<u>4</u>
			16

Spring			
CIS	125	Word Processing /WordPerfect	4
HEO	104	Anatomy for Health Occupations	4
BTE	141	Medical Office II	4
ENG	121	English Composition I	<u>3</u>
			15

Fall			
BTE	142	Medical Transcription	2.67
BTE	206	Coding/Health Insurance Methods and Claims	4
BUS	217	Business Communications and Report Writing	3
BTE	115	Data Entry I	4
MAN	116	Principles of Supervision	<u>3</u>
			16.67
MAN	120	Office Management	

Spring			
MAT	100	Introductory Algebra ( <i>or higher</i> )	3
BTE	297	Cooperative Education/Internship ( <i>Permission from BTE instructor required</i> )	3
General Education Course			3
General Education Course			3
General Education Course			<u>3</u>
			15

### General Education Courses

Credit from any two of the following three areas:

*Humanities* (ART, FRE, GER, HUM, LIT, MUS, PHI, SPA, THE)

*Science* (AST, BIO, CHE, GEY, PHY)

*Social and Behavioral Sciences* (ANT, ECO, GEO, HIS, POS, PSY, SOC)

Total Required Credits 62.67

### Area of Emphasis: Word/Information Processing

Fall			
BTE	102	Keyboarding Applications	4
BTE	125	Procedures for Workplace 2000	3
BUS	115	Introduction to Business	3
ENG	121	English Composition I	3
CIS	118	Microcomputer Applications	<u>5</u>
			18

Spring			
BTE	103	Keyboarding Skillbuilding I	4
CIS	125	Word Processing/WordPerfect	4
BUS	120	Business Mathematics by Machines	4
MAT	100	Introductory Algebra ( <i>or higher</i> )	3
General Education Course			<u>3</u>
			18

Fall			
BTE	104	Skillbuilding II	4
BTE	135	Office Correspondence	3
BTE	161	Filing and Records Management	2
BUS	217	Business Communications and Report Writing	3
MAN	116	Principles of Supervision	3
General Education Course			<u>3</u>
			18

Spring			
BTE	162	Electronic Filing I	4
CIS	137	Desktop Publishing	4
BTE	220	Machine Transcription	4
Elective			3
General Education Course			<u>3</u>
			18

### Electives

Accounting (ACC)

Business Technology (BTE)

Computer Information Systems (CIS)

Management (MAN)

### General Education Courses

Credit from two of the following three areas:

*Humanities* (ART, FRE, GER, HUM, LIT, MUS, PHI, SPA, THE)

*Science* (AST, BIO, CHE, GEY, PHY)

*Social and Behavioral Sciences* (ANT, ECO, GEO, HIS, POS, PSY, SOC)

Total Required Credits 72

## Clerical/Data Entry Certificate

<b>Fall</b>			
CIS	118	Microcomputer Applications	5
BTE	102	Keyboarding Applications	4
BTE	161	Filing and Records Management	2
BTE	135	Office Correspondence	<u>3</u>
			14
<b>Spring</b>			
BTE	103	Keyboarding Skillbuilding I	4
BTE	125	Procedures for Workplace 2000	3
BTE	162	Electronic Filing I	4
CIS	125	Word Processing/WordPerfect	<u>4</u>
			15
<b>Fall</b>			
BTE	115	Data Entry I	4
BUS	120	Business Mathematics by Machines	4
ACC	101	Fundamentals of Accounting I	<u>3</u>
			11
		<b>Total Required Credits</b>	<b>40</b>

## Medical Office Certificate

<b>Fall</b>			
CIS	118	Microcomputer Applications	5
BTE	102	Keyboarding Applications	4
HEO	100	Medical Terminology	3
BTE	140	Medical Office I	<u>4</u>
			16
<b>Spring</b>			
HEO	104	Anatomy and Physiology for Health Occupations	4
BTE	141	Medical Office II	4
CIS	125	Word Processing/WordPerfect	4
BTE	135	Office Correspondence	<u>3</u>
			15
<b>Fall</b>			
BTE	115	Data Entry	4
BTE	142	Medical Transcription	2.67
BTE	206	Coding/Health Insurance Methods and Claims	4
BTE	297	Cooperative Education/Internship <i>(Permission from BTE instructor required)</i>	<u>3</u>
			13.67
		<b>Total Required Credits</b>	<b>44.67</b>

## Legal Secretary Certificate

<b>Fall</b>			
CIS	118	Microcomputer Applications	5
BTE	102	Keyboarding Applications	4
BTE	161	Filing and Records Management	2
BTE	125	Procedures for Workplace 2000	3
BTE	135	Office Correspondence	<u>3</u>
			17
<b>Spring</b>			
BTE	103	Keyboarding Skillbuilding I	4
BTE	208	Legal Terminology	3
BTE	209	Legal Research	3
CIS	125	Word Processing/WordPerfect	4
BUS	120	Business Mathematics by Machines	<u>4</u>
			18
<b>Fall</b>			
BTE	220	Machine Transcription	4
BTE	162	Electronic Filing I	4
CIS	137	Desktop Publishing	4
BTE	297	Cooperative Education/Internship <i>(Permission from BTE instructor required)</i>	<u>3</u>
			15
		<b>Total Required Credits</b>	<b>50</b>

## Word Processing Certificate

<b>Fall</b>			
CIS	118	Microcomputer Applications	5
BTE	102	Keyboarding Applications	4
BTE	161	Filing and Records Management	2
BTE	135	Office Correspondence	<u>3</u>
			14
<b>Spring</b>			
BTE	103	Keyboarding Skillbuilding I	4
BTE	125	Procedures for Workplace 2000	3
BTE	162	Electronic Filing	4
CIS	125	Word Processing/WordPerfect	<u>4</u>
			15
<b>Fall</b>			
BTE	104	Skillbuilding II	4
BUS	120	Business Mathematics by Machines	4
CIS	137	Desktop Publishing	4
BTE	220	Machine Transcription	<u>4</u>
			16
		<b>Total Required Credits</b>	<b>45</b>

## Carpentry

*(See Construction Technology)*

# Chemistry

## Associate of Science Degree With an Emphasis in Chemistry

The completion of the following courses is appropriate for those planning to plan to transfer to a four-year college or university to complete a major in chemistry. You are urged to consult with a faculty advisor before beginning any program of study.

Recommended Courses			Credits
CHE	111	General College Chemistry I (Core)	5
CHE	112	General College Chemistry II (Core)	5
CHE	211	Organic Chemistry I	5
CHE	212	Organic Chemistry II	5
MAT	201	Calculus I (Core)	5
MAT	202	Calculus II (Core)	5
MAT	203	Calculus III	4
PHY	211	Physics: Calculus-based I (Core)	5
PHY	212	Physics: Calculus-based II (Core)	5

### Core Curriculum Requirements

#### English/Speech

ENG	121	English Composition I	3
ENG	122	English Composition II	3
SPE	115	Principles of Speech Communication	3

#### \*Humanities (any two courses from the following)

ART 111, 112; Foreign Language 111, 112, 211, 212;  
 HUM 121, 122, 123; LIT 115, 201, 202; MUS 120, 121, 122;  
 PHI 111, 112, 113; THE 211, 212

#### Social and Behavioral Sciences (courses from two different disciplines)

ANT 101, 111; ECO 201, 202; GEO 105; HIS 101, 102, 201, 202;  
 POS 105, 111; PSY 101, 102; SOC 101, 102

#### Electives \_\_\_\_\_ 3

Electives must be selected from college-level transfer courses.  
 No more than three credits in physical education may be counted.

**Total Required Credits 68**

\* You are encouraged to complete GER 111 and 112 to satisfy the Arts and Humanities requirement.

# Communications

(See Speech Communications.)

# Computer Information Systems

## Degree: Associate of Applied Science

### Certificates: Variable credits

The Computer Information Systems Associate of Applied Science degree program is designed to prepare you for entry-level positions in three areas of emphasis: programming, microcomputer applications specialist and microcomputer programming specialist. There are also two-semester certificate programs in microcomputer specialist, LAN administrator and programming.

### Required Credits (for all Areas of Emphasis) Credits

ACC	121	Principles of Accounting I	5
CIS	115	Introduction to Computers	5
CIS	116	Logic and Program Design	3
CIS	245	Database Management Systems	4
CIS	276	Systems Analysis and Design	5
ENG	121	English Composition I	3
ENG	122	English Composition II	3
or			
ENG	131	Technical Writing I	
MAT	121	College Algebra (or higher)	4
SPE	115	Principles of Speech Communication	3

Credit from two of the following three areas: \_\_\_\_\_ 6

Humanities (ART, FRE, GER, HUM, LIT, MUS, PHI, SPA, THE)

Science (AST, BIO, CHE, GEY, PHY)

Social and Behavioral Sciences (ANT, ECO, GEO, HIS, POS, PSY, SOC)

**Total Required Credits 41**

### Area of Emphasis: Internet/Web Development

			Credits
CIS	117	Web Development Essentials	4
CIS	187	Introduction to the Internet	1 1/3
CIS	188	HTML Scripting	1-4
or			
CIS	190	Web Editing	1-4
or			
Other Approved Course			
CSC	238	Java Programming	4
or			
Other Approved Course			
Electives	_____ 9		

Credits for Internet/Web Development Area of Emphasis 20-28 1/3

**Total Required Credits (minimum) 60**  
**Total Required Contact Hours (minimum) 900**

### Area of Emphasis: Microcomputer Applications Specialist

This area of emphasis is designed to prepare you as an entry-level micro-computer specialist with an emphasis in applications.

			Credits
CIS	118	Microcomputer Applications ( <i>Required Lab</i> ) See Course Description section for alternative courses.	5
CIS	141	Intermediate Microcomputer Database ( <i>Required Lab</i> )	11/3
CIS	142	Advanced Microcomputer Database ( <i>Required Lab</i> )	11/3
CIS	151	Intermediate Electronic Spreadsheets ( <i>Required Lab</i> )	11/3
CIS	152	Advanced Electronic Spreadsheets ( <i>Required Lab</i> ) or equivalent (CIS 145, CIS 155)	11/3
CIS	111	Advanced Microcomputer Operating System ( <i>Required Lab</i> )	11/3
CIS	250	Local Area Networks (LAN)	2
CIS/CSC		One Programming Language (preferably C) ( <i>Required Lab</i> )	4
CIS	137	Desktop Publishing ( <i>Required Lab</i> )	4
CIS/CSC		Electives with advisor approval	6
<b>Credits for Microcomputer Applications Specialist Area of Emphasis</b>			<b>27 23</b>
<b>Total Required Credits (minimum)</b>			<b>67 23</b>
<b>Total Required Contact Hours (minimum)</b>			<b>1000</b>

### Area of Emphasis: Microcomputer Programming Specialist

This area of emphasis is designed to prepare you as an entry-level microcomputer specialist with an emphasis in programming.

			Credits
CIS	118	Microcomputer Applications ( <i>Required Lab</i> ) See Course Description section for alternative courses.	5
CIS	141	Intermediate Microcomputer Database ( <i>Required Lab</i> )	11/3
CIS	142	Advanced Microcomputer Database ( <i>Required Lab</i> ) See advisor for equivalent or alternative courses.	11/3
CSC	230	C Language Programming ( <i>Required Lab</i> )	4
CSC	231	Advanced C Language Programming ( <i>Required Lab</i> )	4
CIS/CSC		Second Programming Language ( <i>Required Lab</i> )	4
CIS/CSC		Electives with advisor approval	6
<b>Credits for Microcomputer Programming Specialist Area of Emphasis</b>			<b>25 23</b>
<b>Total Required Credits (minimum)</b>			<b>65 23</b>
<b>Total Required Contact Hours (minimum)</b>			<b>985</b>

### Area of Emphasis: Multimedia Software Developer

This area of emphasis is designed to prepare you for an entry-level position as a Multimedia Software Developer. Upon completion of this program, the student will have completed *Authorized Macromedia Training Courses* conducted by authorized trainers, specifically CIS 181 (*Director*) and CIS 182 (*Authorware*). You should be prepared to enter the multimedia software field as an entry-level developer.

			Credits
CIS	138	Introduction to MS Windows	1 1/3
CIS	180	Introduction to Multimedia	3
CIS	181	Multimedia Software Interactive Development ( <i>Director</i> )	4
CIS	182	Multimedia Software Authorship ( <i>Authorware</i> )	4
CIS	183	Multimedia Software Design/Development or	
CIS	230	C Language Programming or	
CIS	173	Visual BASIC for Windows Programming	4
XXX		Other Course Approved by an advisor	_____
<b>Electives</b>	<b>12</b>		
See an advisor for suggested electives.			
<b>Credits for Multimedia Developer Area of Emphasis</b>			<b>28 1/3</b>
<b>Total Required Credits (minimum)</b>			<b>69 1/3</b>
<b>Total Required Contact Hours (minimum)</b>			<b>1040</b>

### Area of Emphasis: Network Administrator

This area of emphasis is designed to prepare you for an entry-level position as a LAN Administrator. You will also have the option of completing advanced course work through the EDT department in order to obtain special certification in the work field.

			Credits
CIS	110	Introduction to Microcomputer Operating Systems	1 1/3
CIS	111	Advanced Microcomputer Operating Systems or	1 1/3
EDT	240	Peripheral Systems and Software	7
CIS	125	Word Processing	4
CIS	145	Microcomputer Databases	4
CIS	150	Introduction Electronic Spreadsheets	2 2/3
CIS	151	Intermediate Electronic Spreadsheets	1 2/3
CIS	175	UNIX	4
CIS	250	Local Area Networks and	2
CIS	251	Local Area Network Administration or	4
CIS	260	NOVELL Certified Network Engineering—Part I	_____7
<b>Electives</b>	<b>4-6</b>		
Suggested electives with CIS/EDT advisor approval: CIS 252, 253, 254, 176; EDT 260, 270, 280 and 285.			
<b>Credits for Network Administrator Area of Emphasis</b>			<b>30 2/3</b>
<b>Total Required Credits (minimum)</b>			<b>70 2/3</b>
<b>Total Required Contact Hours (minimum)</b>			<b>500</b>

## Computer Information Systems

### Area of Emphasis: Programming

This area of emphasis is designed to prepare you as an entry-level programmer. Upon completion of this program, you will have completed a minimum of thirty programs ranging from simple business programs to the design and completion of a complex business system.

			Credits
CIS	277	Operating Systems and Job Control Language <i>(Required Lab)</i>	4
			or
CIS	175	UNIX <i>(Required Lab)</i>	4
CIS	297	Cooperative Education	3-5
			or
ACC	122*	Principles of Accounting II	3-5
CIS/CSC		In one programming language sequence <i>(Required Lab)</i>	8
CIS/CSC		Electives above CIS 155 with approval of advisor	9
		Labs may be required	3
<b>Credits for Programming Area of Emphasis</b>			<b>27-29</b>
<b>Total Required Credits (minimum)</b>			<b>67</b>
<b>Total Required Contact Hours (minimum)</b>			<b>1005</b>

\*ACC 121 or equivalent is a prerequisite to ACC 122.

### Internet/Web Development Certificate

			Credits
CIS	115	Introduction to Computers	5
			or
			Other Approved Course
CIS	117	Web Development Essentials	4
CIS	187	Introduction to the Internet	1 1/3
CIS	188	HTML Scripting	1-4
			or
CIS	190	Web Editing	1-4
			or
			Other Approved Course
CSC	238	Java Programming	4
			or
			Other Approved Course
Electives		14	
<b>Total Required Credits (minimum)</b>			<b>30-38 1/3</b>
<b>Total Required Contact Hours (minimum)</b>			<b>450</b>

### LAN Administrator Certificate

This program is designed to prepare you for a career in Local Area Network administration or planning. Additional career opportunities exist in microcomputer applications support.

			Credits
CIS	110	Introduction to Microcomputer Operating Systems <i>(Required Lab)</i>	11/3
CIS	111	Advanced Microcomputer Operating Systems <i>(Required Lab)</i>	11/3
CIS	115	Introduction to Computers <i>(Required Lab)</i>	5
CIS	125	Word Processing <i>(Required Lab)</i>	4
CIS	145	Microcomputer Databases <i>(Required Lab)</i>	4
CIS	150	Introduction to Electronic Spreadsheets <i>(Required Lab)</i>	22/3
CIS	151	Intermediate Electronic Spreadsheets <i>(Required Lab)</i>	11/3
CIS	250	Local Area Networks	2
CIS	251	Local Area Network Administration <i>(Required Lab)</i>	4
CIS	252	Multi-Vender Networking	3
CIS	253	LAN Service and Support <i>(Required Lab)</i>	4
CIS	275	Telecommunications	3
<b>Total Required Credits</b>			<b>35 2/3</b>
<b>Total Required Contact Hours</b>			<b>535</b>

### Microcomputer Specialist Certificate

This certificate program is designed to prepare you for a career as a microcomputer specialist with an emphasis in applications.

			Credits
CIS	118	Microcomputer Applications <i>(Required Lab)</i> See Course Description section for alternative courses.	5
CIS	141	Intermediate Microcomputer Database <i>(Required Lab)</i>	1 1/3
CIS	142	Advanced Microcomputer Database <i>(Required Lab)</i>	1 1/3
CIS	151	Intermediate Electronic Spreadsheets <i>(Required Lab)</i>	1 1/3
CIS	152	Advanced Electronic Spreadsheets <i>(Required Lab)</i> or equivalent (CIS 145, CIS 155)	1 1/3
CIS	111	Advanced Microcomputer Operating Systems <i>(Required Lab)</i>	1 1/3
CIS	250	Local Area Networks (LAN)	2
CIS/CSC		One Programming Language (preferably C) <i>(Required Lab)</i>	4
CIS	137	Desktop Publishing <i>(Required Lab)</i>	4
CIS	245	Database Management Systems <i>(Required Lab)</i>	4
CIS/CSC		Electives with advisor approval	6
<b>Total Required Credits (minimum)</b>			<b>1 2/3</b>
<b>Total Required Contact Hours (minimum)</b>			<b>475</b>

## Multimedia Software Specialist Certificate

This certificate is designed to prepare you for a career as a Multimedia Specialist. Course work includes *Authorized Macromedia Training Courses* conducted by authorized trainers, specifically CIS 181 (*Director*) and CIS 182 (*Authorware*). Additional training may be obtained through the Multimedia Software Developer Degree.

			Credits
CIS	115	Introduction to Computers or	5
CIS	118	Microcomputer Applications	5
CIS	180	Introduction to Multimedia	3
CIS	181	Multimedia Software Interactive Development ( <i>Director</i> )	4
CIS	182	Multimedia Software Authorship ( <i>Authorware</i> )	4
Electives ( <i>CIS electives must be above 155</i> )			16
<b>Total Required Credits (minimum)</b>			<b>32</b>
<b>Total Required Contact Hours (minimum)</b>			<b>480</b>

## Programming Certificate

This certificate is designed for you if you already have a two-year or a four-year degree. Professional experience may be used in lieu of a degree with approval from the department.

			Credits
CIS	115	Introduction to Computers ( <i>Required Lab</i> )	5
CIS	116	Logic and Program Design	3
CIS	277	Operating Systems and Job Control or	
CIS	175	UNIX	4
CIS	297	Cooperative Education or	
ACC	122*	Principles of Accounting II or	
ENG	131	Technical Writing I	3-5
CIS/CSC		In one programming language sequence	8
CIS/CSC		Electives above CIS 155 with advisor's approval	6
Labs may be required.			2
<b>Total Required Credits (minimum)</b>			<b>31-33</b>
<b>Total Required Contact Hours (minimum)</b>			<b>465-495</b>

\*ACC 121 or equivalent is a prerequisite to ACC 122.

## Computer Science

### Associate of Science Degree With an Emphasis in Computer Science

The completion of the following courses is for the student planning to transfer to a four-year college or university to complete a major in computer science. You are urged to consult a faculty advisor before beginning any program.

			Credits
<b>Recommended Courses</b>			
CSC	160	Computer Science I ( <i>Required Lab</i> )	5
CSC	161	Computer Science II ( <i>Required Lab</i> )	5
CSC	165	Discrete Structures	3
MAT	201	Calculus I (Core)	5
MAT	202	Calculus II (Core)	5
PHY	211	Physics: Calculus-based I* ( <i>Core</i> )	5
PHY	212	Physics: Calculus-based II* ( <i>Core</i> )	5

\*Other natural science credits may be substituted for the AS degree. However, many colleges and universities offering a bachelor of science degree in Computer Science require PHY 211 and PHY 212. Please consult with a computer science faculty advisor.

Electives in Mathematics and Computer Science	6
All electives must be transferable. You are encouraged to work with their computer science faculty advisor.	39

### Core Curriculum Requirements

<i>English/Speech</i>			
ENG	121	English Composition I	3
ENG	122	English Composition II	3
SPE	115	Principles of Speech Communication	3
<i>Humanities</i> (any two courses from the following)			6
ART 111, 112; Foreign Language 111, 112, 211, 212;			
HUM 121, 122, 123; LIT 115, 201, 202; MUS 120, 121, 122;			
PHI 111, 112, 113; THE 211, 212			
<i>Social and Behavioral Sciences</i> (courses from two different disciplines) ANT			
101, 111; ECO 201, 202; GEO 105; HIS 101, 102			
201, 202; POS 105, 111; PSY 101, 102; SOC 101, 102			
			6

Electives	3
Electives must be selected from college-level transfer courses. No more than 3 credits in PHE may be counted.	

**Total Required Credits** **63**

# Construction Technology Cluster

**Degree: Associate of Applied Science in Construction Technology with Areas of Emphasis and Options in:**

## Air Conditioning Heating & Refrigeration (AHR)

Degree	Certificate
<ul style="list-style-type: none"> <li>Advanced Heating</li> <li>Air Conditioning</li> <li>Refrigeration</li> <li>Refrigeration, Heating &amp; Air Conditioning</li> <li>Residential Heating</li> </ul>	<ul style="list-style-type: none"> <li>Advanced Heating</li> <li>Air Conditioning</li> <li>Refrigeration</li> <li>Refrigeration, Heating &amp; Air Conditioning</li> <li>Residential Heating</li> </ul>

## Carpentry (CAR)

Degree	Certificate
<ul style="list-style-type: none"> <li>Carpentry</li> </ul>	<ul style="list-style-type: none"> <li>Carpentry</li> </ul>

## Construction Technology (CON)

Degree	Certificate
<ul style="list-style-type: none"> <li>Building Maintenance Technician</li> <li>Technician Construction Technology</li> </ul>	<ul style="list-style-type: none"> <li>Building Maintenance Technician</li> <li>Technician Construction Technology</li> </ul>

## Electrical (EIC)

Degree	Certificate
<ul style="list-style-type: none"> <li>Construction</li> <li>Maintenance</li> </ul>	<ul style="list-style-type: none"> <li>Construction</li> <li>Maintenance</li> <li>Residential Construction</li> <li>Advanced Construction</li> <li>Advanced Maintenance</li> <li>Post Degree Specializations</li> </ul>

## Fine Woodworking (FIW)

Degree	Certificate
<ul style="list-style-type: none"> <li>Fine Woodworking</li> </ul>	<ul style="list-style-type: none"> <li>Fine Woodworking</li> </ul>

## Plumbing (PLU)

Degree	Certificate
<ul style="list-style-type: none"> <li>Plumbing</li> </ul>	<ul style="list-style-type: none"> <li>Residential Plumber</li> <li>Apprentice Plumber</li> </ul>

## Solar Construction Technology (ENT)

Degree	Certificate
<ul style="list-style-type: none"> <li>Active</li> <li>Passive</li> </ul>	<ul style="list-style-type: none"> <li>Solar Construction Technology</li> </ul>

## Apprentice-Related Technology

*(In conjunction with the Construction Industry Training Council\*)*

Degree (60 Credits)	Certificate (16-32 Credits)
<ul style="list-style-type: none"> <li>Carpentry</li> <li>Drywall Applicator</li> <li>Electrical</li> <li>Ironworker</li> <li>Masonry</li> <li>Plumbing</li> <li>Sheetmetal</li> </ul>	<ul style="list-style-type: none"> <li>Carpentry (ARC)</li> <li>Drywall Applicator (ARD)</li> <li>Electrical (ARE)</li> <li>Ironworker (ARI)</li> <li>Masonry (ARM)</li> <li>Plumbing (ARP)</li> <li>Sheetmetal Worker (ARS)</li> </ul>

\* Permission of Construction Technology Department Chair required.

## Interdisciplinary Certificates

\* Basic Plumbing & Heating Maintenance Certificate

- Building Code Certificate

### Construction Technology Associate of Applied Science Degree Requirements for All Areas of Emphasis

#### General Education Requirements

<i>English/Speech</i> (COM, ENG, SPE)	3
<i>Mathematics</i> (MAT 115)	3
Credit from any two of the following three areas:	6
<i>Humanities</i> (ART, FRE, GER, HUM, LIT, MUS, PHI, SPA, THE)	
<i>Science</i> (AST, BIO, CHE, GEY, PHY)	
<i>Social and Behavioral Sciences</i> (ANT, ECO, GEO, HIS, POS, PSY, SOC)	
General Education Electives	3
	<u>15</u>

#### Construction Technology Requirements

CON 100	Computers for Construction	2
CON 105	Blueprint Reading	3
CON 151	Construction Process	<u>4</u>
		9
<b>Required Major Courses</b>		
See Individual areas of emphasis for specific requirements		
		<u>36</u>
<b>Total Required Credits</b>	<b>(Minimum)</b>	<b>60</b>

## Degree: Associate of Applied Science Certificates: Variable Credits

The Construction Technology degree is the most comprehensive training program for the building industry in the state. This flexible program allows you to choose courses in one or more trades. In addition to teaching all four National Codes, this degree provides you with opportunities to earn interdisciplinary certificates as well as post-degree upgrading. Construction Technology requirements and electives must be approved by Construction Technology Advisor.

### Construction Technology AAS Degree with Technician Emphasis

	<b>Credits</b>
<b>General Education Requirements</b>	15
Construction Technology Requirements	<u>9</u>
<b>Total Required Credits</b>	<b>24</b>
Required Major Credits	36

You must complete a total of 36 credits including one course from the areas listed below. No more than four courses from any one area will count toward the completion of this degree. Meet with Construction Technology Advisor.

**Total Required Credits (minimum) 60**

### Generalist Construction Technology Certificate

	<b>Credits</b>
<b>Construction Technology Requirements</b>	9
<b>Major Courses</b>	
Construction Technology requirements and electives must be approved by your Construction Technology Advisor.	<u>21</u>
<b>Total Required Credits (minimum)</b>	<b>30</b>

### Building Code Certificate

Credit from any two of the following four classes:

CAR 225	Uniform Building Code	(4)
PLU 216	Uniform Plumbing Code	(4)
AHR 216	Uniform Mechanical Code	(4)
EIC 130	National Electric Code I	<u>(4)</u>
<b>Total Required Credits (minimum)</b>		<b>8</b>

## Construction Technology AAS Degree with Building Maintenance Emphasis

	<b>Credits</b>
<b>General Education Requirements</b>	15
Construction Technology Requirements	<u>9</u>
<b>Total Required Credits</b>	<b>24</b>

You must complete a total of 36 credits including one course from the areas listed below. No more than four courses from any one area will count toward the completion of this degree. Meet with your Construction Technology Advisor.

#### Air Conditioning, Heating, Refrigeration and Ventilation

AHR 102	Heating Fundamentals	4
AHR 105	Electricity for HVAC/R	4
AHR 110	Refrigeration Fundamentals	4
AHR 120	Air Conditioning Systems	6
AHR 132	HVAC/R Controls I	4

#### Carpentry

CAR 151	Tools: Hand and Power, Portable and Stationary	4
CAR 202	Exterior Finishes	(1-8)
CAR 203	Finishes and Refinishes	(1-4)
CAR 208	Interior Finishes	(1-4)
CAR 207	Roof Coverings	(1-4)

#### Electricity

EIC 100	Electrical Construction and Planning	4
EIC 105	Basics of AC and DC Electricity	4
EIC 110	Electrical Installations I	4
EIC 130	National Electric Code I	4
EIC 155	AC Circuit Fundamentals	4

#### Plumbing

PLU 100	Introduction to Plumbing	3
PLU 110	Finish and Installation of Plumbing Fixtures	3
PLU 116	Plumbing Repair	3
PLU 206	Hot Water Heating Systems	4
PLU 207	Basic Solar Energy	3

### Building Maintenance Technician Certificate

	<b>Credits</b>
<b>Construction Technology Requirements</b>	9

You must complete a total of 36 credits including one course from the areas listed below. No more than four courses from any one area will count toward the completion of this certificate. 36

**Total Required Credits (minimum) 45**



## Construction Technology

### Air Conditioning, Heating, Refrigeration and Ventilation

AHR	102	Heating Fundamentals	4
AHR	105	Electricity for HVAC/R	4
AHR	110	Refrigeration Fundamentals	4
AHR	120	Air Conditioning Systems	6
AHR	132	HVAC/R Controls I	4

### Carpentry

CAR	151	Tools: Hand and Power, Portable and Stationary	4
CAR	202	Exterior Finishes	(1-8)
CAR	203	Finishes and Refinishes	(1-4)
CAR	208	Interior Finishes	(1-4)
CAR	207	Roof Coverings	(1-4)

### Electricity

EIC	100	Electrical Construction Planning	3
EIC	105	Basics of AC and DC Electricity	3
EIC	110	Electrical Installations I	3
EIC	130	National Electric Code I	3
EIC	155	AC Circuit Fundamentals	3

### Plumbing

PLU	100	Introduction to Plumbing	3
PLU	110	Finish and Installation of Plumbing Fixtures	3
PLU	116	Plumbing Repair	3
PLU	206	Hot Water Heating Systems	4
PLU	207	Basic Solar Energy	3

### Apprentice-Related Carpentry Certificate

			Credits
ARC	111	Carpentry I	4
ARC	112	Carpentry I <i>(continued)</i>	4
ARC	121	Carpentry II	4
ARC	122	Carpentry II <i>(continued)</i>	4
ARC	131	Carpentry III	4
ARC	132	Carpentry III <i>(continued)</i>	4
ARC	141	Carpentry IV	4
ARC	142	Carpentry IV <i>(continued)</i>	4
		Total Required Credits	32

### Apprentice-Related Drywall Certificate\*

ARD	111	Drywall Applicator I	4
ARD	112	Drywall Applicator I <i>(continued)</i>	4
ARD	121	Drywall Applicator II	4
ARD	122	Drywall Applicator II <i>(continued)</i>	4
		Total Required Credits	16

\*This degree requires additional electives (see advisor).

### Apprentice-Related Electrical Certificate

ARE	111	Electrical I	4
ARE	112	Electrical I <i>(continued)</i>	4
ARE	121	Electrical II	4
ARE	122	Electrical II <i>(continued)</i>	4
ARE	131	Electrical III	4
ARE	132	Electrical III <i>(continued)</i>	4
ARE	141	Electrical IV	4
ARE	142	Electrical IV <i>(continued)</i>	4
		Total Required Credits	32

### Apprentice-Related Ironworker Certificate\*

ARI	111	Ironworker I	4
ARI	112	Ironworker I <i>(continued)</i>	4
ARI	121	Ironworker II	4
ARI	122	Ironworker II <i>(continued)</i>	4
ARI	131	Ironworker III	4
ARI	132	Ironworker III <i>(continued)</i>	4
		Total Required Credits	24

\*This degree requires additional electives (see advisor).

### Apprentice-Related Plumbing/Pipefitter Certificate

ARP	111	Plumbing I	4
ARP	112	Plumbing I <i>(continued)</i>	4
ARP	121	Plumbing II	4
ARP	122	Plumbing II <i>(continued)</i>	4
ARP	131	Plumbing III	4
ARP	132	Plumbing III <i>(continued)</i>	4
ARP	141	Plumbing IV	4
ARP	142	Plumbing IV <i>(continued)</i>	4
ARP	151	Plumbing V	4
ARP	152	Plumbing V <i>(continued)</i>	4
		Total Required Credits	40

### Apprentice-Related Sheet Metal Certificate

ARS	111	Sheet Metal I	4
ARS	112	Sheet Metal I <i>(continued)</i>	4
ARS	121	Sheet Metal II	4
ARS	122	Sheet Metal II <i>(continued)</i>	4
ARS	131	Sheet Metal III	4
ARS	132	Sheet Metal III <i>(continued)</i>	4
ARS	141	Sheet Metal IV	4
ARS	142	Sheet Metal IV <i>(continued)</i>	4
		Total Required Credits	32

## Air Conditioning, Heating, Refrigeration & Ventilation (AHR)

This program provides the knowledge and skills for job entry into the air conditioning, heating and refrigeration industry in the areas of installation and maintenance as well as upgrading and refresher courses for those already employed in the field.

## Construction Technology AAS Degree with Air Conditioning, Heating, & Ventilation Emphasis

	<b>Credits</b>
<b>General Education Requirements</b>	15
Construction Technology Requirements	<u>9</u>
<b>Total Required Credits</b>	<b>24</b>
<b>Required Major Courses</b>	<b>Credits</b>
<b>First Session</b>	
AHR 102 Heating Fundamentals	4
AHR 105 Electricity for HVAC/R	4
AHR 110 Refrigeration Fundamentals	4
MAT 115 Technical Math	<u>3</u>
	15
<b>Second Session</b>	
AHR 132 Refrigeration and Air Conditioning Controls	4
AHR 120 Air Conditioning Systems	6
AHR 125 Refrigerant Recovery Certification Training	1
English Credit	<u>3</u>
	14
<b>Third Session</b>	
AHR 162 Heating Controls	4
AHR 141 Residential Forced Air Heating	4
AHR 206 Hot Water Heating Systems	4
Science or Humanities or Social Science Course	<u>3</u>
	15
<b>Fourth Session</b>	
AHR 216 Uniform Mechanical Code	4
AHR 278 Advanced HVAC/R Lab	3
CON 105 Blueprint Reading	3
CON 100 Computers for Construction	3
Science or Humanities or Social Science Course	<u>3</u>
	16
<b>Total Required Credits</b>	<b>60</b>

## Construction Technology AAS Degree with Air Conditioning Emphasis

<b>General Education Requirements</b>		15
Construction Technology Requirements		<u>9</u>
<b>Total Required Credits</b>		<b>24</b>
<b>Required Major Courses</b>		<b>Credits</b>
<b>First Session</b>		
AHR 105	Electricity for HVAC/R	4
AHR 110	Refrigeration Fundamentals	4
MAT 115	Technical Math	3
English Credit		<u>3</u>
		14
<b>Second Session</b>		
AHR 120	Air Conditioning Systems	6
AHR 125	Refrigerant Recovery Certification Training	1
AHR 132	Refrigeration and Air Conditioning Controls	4
AHR 278	Advanced Refrigeration Lab	2
Science or Humanities or Social Science Elective		<u>3</u>
		16
<b>Third Session</b>		
AHR 200	HVAC/R Controls II	4
AHR 216	Uniform Mechanical Code	4
CON 100	Computers for Construction	4
CON 105	Blueprint Reading	<u>3</u>
		15
<b>Fourth Session</b>		
AHR 222	Evaporative Cooling Systems/Water Treatment	4
AHR 297	Work Co-op	4
CON 151	Construction Process	4
Science or Humanities or Social Science Elective		<u>3</u>
		15
<b>Total Required Credits</b>		<b>60</b>

## Construction Technology AAS Degree with Advanced Heating Emphasis

<b>General Education Requirements</b>		15
Construction Technology Requirements		<u>9</u>
<b>Total Required Credits</b>		<b>24</b>
<b>Required Major Courses</b>		<b>Credits</b>
<b>First Session</b>		
AHR 102	Heating Fundamentals	4
AHR 105	Electricity for HVAC/R	4
MAT 115	Technical Math	3
English Credit		<u>3</u>
		14
<b>Second Session</b>		
AHR 141	Residential Forced Air Heating	4
AHR 162	Heating Controls	4
AHR 299	Independent Study	2
CON 100	Computers for Construction	3
Science or Humanities or Social Science Course		<u>3</u>
		16
<b>Third Session</b>		
AHR 151	Low Pressure Steam Heating	4
AHR 206	Hot Water Heating Systems	4
CON 105	Blueprint Reading	3
Science or Humanities or Social Science Course		<u>3</u>
		14
<b>Fourth Session</b>		
AHR 200	HVAC/R Controls II	4
AHR 216	Uniform Mechanical Code	4
AHR 240	Advanced Heating Systems	4
CON 151	Construction Process	<u>4</u>
		16
<b>Total Required Credits</b>		<b>60</b>

## Construction Technology

### **Construction Technology AAS Degree with Residential Heating Emphasis**

<b>General Education Requirements</b>	<b>Credits</b>
	15
Construction Technology Requirements	<u>9</u>
<b>Total Required Credits</b>	<b>24</b>

#### **Required Major Courses** **Credits**

<b>First Session</b>	
AHR 102 Heating Fundamentals	4
AHR 105 Electricity for HVAC/R	4
MAT 115 Technical Math	3
English Credit	<u>3</u>
	14

<b>Second Session</b>	
AHR 141 Residential Forced Air Heating	4
AHR 162 Heating Controls	4
AHR 278 Advanced HVAC/R Lab	2
PLU 107 Piping and Back-Flow Prevention	3
Science or Humanities or Social Science Course	<u>3</u>
	16

<b>Third Session</b>	
AHR 151 Low Pressure Steam Heating	4
AHR 206 Hot Water Heating Systems	4
CON 105 Blueprint Reading	3
CON 100 Computers for Construction	<u>3</u>
	14

<b>Fourth Session</b>	
AHR 216 Uniform Mechanical Code	4
AHR 225 Indoor Air Quality and Ventilation	4
CON 151 Construction Process	4
Independent Study or Work Co-op	1
Science or Humanities or Social Science Course	<u>3</u>
	16

**Total Required Credits 60**

### **Construction Technology AAS Degree with Refrigeration Emphasis**

<b>General Education Requirements</b>	<b>Credits</b>
	15
Construction Technology Requirements	<u>9</u>
<b>Total Required Credits</b>	<b>24</b>

#### **Required Major Courses** **Credits**

<b>First Session</b>	
AHR 105 Electricity for HVAC/R	4
AHR 110 Refrigeration Fundamentals	4
MAT 115 Technical Math	3
English Credit	<u>3</u>
	14

<b>Second Session</b>	
AHR 125 Refrigerant Recovery Certification Training	1
AHR 132 Refrigeration and Air Conditioning Controls	4
AHR 201 Advanced Refrigeration	6
CON 100 Computers for Construction	<u>3</u>
	14

<b>Third Session</b>	
AHR 200 HVAC/R Controls II	4
AHR 217 Refrigeration Operator	4
AHR 278 Advanced Refrigeration Lab	3
CON 105 Blueprint Reading	3
Science or Humanities or Social Science Course	<u>3</u>
	17

<b>Fourth Session</b>	
AHR 222 Evaporative Cooling Systems and Water Treatment	4
AHR 297 Work Co-op	4
CON 151 Construction Process	4
Science or Humanities or Social Science Course	<u>3</u>
	15

**Total Required Credits 60**

## Residential Air Conditioning, Heating, and Ventilation (HVAC) Certificate

Required Major Courses	Credits
<b>First Session</b>	
AHR 102 Heating Fundamentals	4
AHR 105 Electricity for HVAC/R	4
AHR 110 Refrigeration Fundamentals	4
	12
<b>Second Session</b>	
AHR 120 Air Conditioning Systems	6
AHR 125 Refrigerant Recovery Certificate	1
AHR 132 AC and Refrigeration Controls	4
AHR 141 Residential Forced Air Heating	4
	15
<b>Third Session</b>	
AHR 162 Heating Controls	4
AHR 206 Hot Water Heating Systems	4
AHR 216 Uniform Mechanical Code	4
	12
<b>Total Required Credits</b>	<b>39</b>

## Air Conditioning Certificate

Required Major Courses	Credits
<b>First Session</b>	
AHR 105 Electricity for HVAC/R	4
AHR 110 Refrigeration Fundamentals	4
	8
<b>Second Session</b>	
AHR 120 Air Conditioning Systems	6
AHR 125 Refrigerant Recovery Certification Training	1
AHR 132 AC and Refrigeration Controls	4
AHR 200 HVAC Controls II	4
	15
<b>Third Session</b>	
AHR 216 Uniform Mechanical Code	4
AHR 222 Evaporative Cooling Systems and Water Treatment	4
AHR 299 Independent Study	4
	12
<b>Total Required Credits</b>	<b>35</b>

## Advanced Air Conditioning, Heating, and Ventilation (HVAC ) Certificate

Required Major Courses	Credits
<b>First Session</b>	
AHR 102 Heating Fundamentals	4
AHR 105 Electricity for HVAC/R	4
AHR 110 Refrigeration Fundamentals	4
	12
<b>Second Session</b>	
AHR 120 Air Conditioning Systems	6
AHR 125 Refrigerant Recovery Certificate	1
AHR 132 AC and Refrigeration Controls	4
AHR 141 Residential Forced Air Heating	4
	15
<b>Third Session</b>	
AHR 151 Low Pressure Steam Heat	4
AHR 162 Heating Controls	4
AHR 206 Hot Water Heating Systems	4
	12
<b>Fourth Session</b>	
AHR 200 HVAC/R Controls II	4
AHR 216 Uniform Mechanical Code	4
AHR 222 Evaporative Cooling Systems and Water Treatment	4
	12
<b>Total Required Credits</b>	<b>51</b>

## Residential Heating Certificate

Required Major Courses	Credits
<b>First Session</b>	
AHR 102 Heating Fundamentals	4
AHR 105 Electricity for HVAC/R	4
	8
<b>Second Session</b>	
AHR 141 Residential Forced Air Heating	4
AHR 162 Heating Controls	4
AHR 206 Hot Water Heating Systems	4
	12
<b>Third Session</b>	
AHR 216 Uniform Mechanical Code	4
AHR 299 Independent Study	4
	8
<b>Total Required Credits</b>	<b>28</b>

## Construction Technology

### Advanced Heating Certificate

#### Required Major Courses

##### First Session

AHR	102	Heating Fundamentals	4
AHR	105	Electricity for HVAC/R	<u>4</u>
			8

##### Second Session

AHR	141	Residential Forced Air Heating	4
AHR	151	Low Pressure Steam Heat	4
AHR	162	Heating Controls	<u>4</u>
			12

##### Third Session

AHR	200	HVAC/R Controls II	4
AHR	206	Hot Water Heating Systems	4
AHR	216	Uniform Mechanical Code	<u>4</u>
			12

##### Fourth Session

AHR	240	Commercial Heating Systems	4
AHR	299	Independent Study	<u>4</u>
			8
		<b>Total Required Credits</b>	<b>40</b>

### Refrigeration Certificate

#### Required Major Courses

##### First Session

AHR	105	Electricity for HVAC/R	4
AHR	110	Refrigeration Fundamentals	<u>4</u>
			8

##### Second Session

AHR	125	Refrigerant Recovery Certificate	1
AHR	132	HVAC/R Controls I	4
AHR	201	Advanced Refrigeration	<u>6</u>
			11

##### Third Session

AHR	217	Refrigeration Operator Code	4
AHR	299	Independent Study	<u>4</u>
			8
		<b>Total Required Credits</b>	<b>27</b>

### Carpentry (CAR)

This program provides theory and hands-on training for job-entry skills through craftsman level competencies in a variety of areas in addition to general carpentry classes. Areas of emphasis are designed to meet individual needs, whether you are a part- or full-time student in the following specialties:

- Residential Carpentry
- Commercial Carpentry
- Contracting
- Job Site Supervision, Code Compliance, Estimating
- Maintenance: Apartment, Commercial, Residential
- Remodeling/Renovation/Additions/Basement Remodeling
- Cabinetmaking/Furniture making and Repair and Refinishing
- Specialty Trades (some examples): Interior Finish Carpenter, Drywall, Flooring Installer, Roofer, Cabinet and Counter Top Installer, Framing, Form Carpenter

Courses are competency-based. Variable credit classes are available to fit your schedule. Courses may be repeated up to three times to increase proficiency. All classes are open to all skill levels unless otherwise noted. Additional unlisted topics are available through independent study. Personal tool requirements increase with proficiency.

Choose the number of credits shown from each group:

			<b>Credits</b>
			<b>8</b>
	<b>Structure</b>		
CAR	107	Site Preparation	
CAR	108	Foundation Systems	
CAR	109	Floor Framing	
CAR	110	Wall Framing	
CAR	111	Roof Framing	
CAR	112	Stair Framing	
CAR	113	Framing Labs	
CAR	114	Formwork Lab	
	<b>Exterior Finishes</b>		<b>4</b>
CAR	200	Exterior Trim	
CAR	201	Commercial Roofing Project	
CAR	202	Exterior Finishes Lab	
CAR	205	Exterior Doors and Windows	
CAR	206	Exterior Wall Coverings	
CAR	207	Roof Coverings	
	<b>Specialties</b>		<b>8</b>
CAR	208	Interior Finishes	
CAR	215	Cabinet Installation, Countertops & Built-Ins	
CAR	216	Drywall Construction	
CAR	218	Commercial and Tenant Finishes	
CAR	220	Remodeling, Renovation and Additions	
CAR	221	Building Maintenance	
	<b>Trade Skills</b>		<b>8</b>
CON	100	Computers for Construction	
CAR	150	Construction Materials	
CAR	224	Contracting and the Construction Business	
CAR	225	Building Codes, Permits, Inspection, Compliance and Variances	
CAR	226	Contractor Licensing	
CAR	227	Construction Licensing	
CAR	228	Cost Estimation	
CAR	229	Contractors' and Builders' Seminar	
CAR	232	Carpentry Lab	
	<b>or</b>		
CAR	233	Technical Project for Specialty Trade	

## Construction Technology AAS Degree with Carpentry Emphasis

<b>General Education Requirements</b>	15
Construction Technology Requirements	9
<b>Total Required Credits</b>	<b>24</b>

### Required Major Courses

<b>First Session</b>		<b>Credits</b>
CAR 152	Tools	4
CON 100	Computers for Construction	2
CAR XXX	Carpentry Class from Structure Category	4
CON 105	Blueprint Reading	3
MAT 115	Applied Occupational Math	3
		16

<b>Second Session</b>		<b>Credits</b>
CON 151	Construction Process	4
CAR XXX	Carpentry Class from Structure Category	4
CAR XXX	Carpentry Class from Specialties Category	4
General Education : English/Speech		3
		15

<b>Third Session</b>		<b>Credits</b>
CAR XXX	Carpentry Class from Trade Skills Category	4
CAR XXX	Carpentry Class from Exterior Finishes Category	4
General Education: Humanities, Science or Social Sciences		3
CAR 232	Carpentry Lab	
	or	
CAR 233	Technical Project	4
		15

<b>Fourth Session</b>		<b>Credits</b>
CAR 232	Carpentry Lab	
	or	
CAR 233	Technical Project	4
CAR XXX	Carpentry Class from Specialties Category	4
General Education: Humanities, Science or Social Sciences		3
General Education Elective		3
		14
<b>Total Required Credits</b>		<b>60</b>

## Carpentry Certificate

### Required Major Courses

CON 151	Construction Process	4
CAR 152	Tools: Hand and Power/Portable and Stationary	4

<b>Choose a minimum of 4 credits from each category:</b>		
Structure		4
Exterior Finishes		4
Specialties		4
Trade Skills		4
CAR/FIW Electives ( <i>must have approval of your advisor</i> )		8

**Total Required Credits** **32**

## Electricity—Commercial/ Industrial/Residential (EIC)

This program is designed to prepare you for the many career opportunities available to the competent electrician. A thorough treatment of DC, AC, and polyphase electric circuits and solid state power devices minimizes the possibility of technological obsolescence. The electrical installation courses use the latest techniques according to the National Electrical Code. The electrical code classes are especially useful as preparation for state license examinations. This program is also excellent for job upgrading.

## Construction Technology AAS Degree with Construction Electrician Emphasis

<b>General Education Requirements</b>	15
Construction Technology Requirements	9
<b>Total Required Credits</b>	<b>24</b>

### Required Major Courses

<b>First Session</b>		<b>Credits</b>
EIC 105	Basics AC & DC Electricity	4
EIC 110	Electrical Installations I	4
CON 105	Blueprint Reading	3
MAT 115	Technical Math	3
CON 100	Computers for Construction	2
		16

<b>Second Session</b>		<b>Credits</b>
EIC 100	Electrical Construction and Planning	4
EIC 120	Electrical Installations II	4
EIC 130	National Electrical Code I	4
English Credit		3
		15

<b>Third Session</b>		<b>Credits</b>
EIC 135	National Electrical Code II	4
EIC 150	DC Circuit Fundamentals	4
CON 151	Construction Process	4
General Elective Credit		3
		15

<b>Fourth Session</b>		<b>Credits</b>
EIC 155	AC Circuit Fundamentals	4
EIC 190	Electrical Code Calculations	4
Science or Humanities or Social Science Courses		6
		14
<b>Total Required Credits</b>		<b>60</b>

## Construction Technology

### Construction Technology AAS Degree with Maintenance Electrician Emphasis

	Credits
<b>General Education Requirements</b>	15
Construction Technology Requirements	<u>9</u>
<b>Total Required Credits</b>	24

#### Required Major Courses

	Credits
<b>First Session</b>	
EIC 105 Basics AC & DC Electricity	4
EIC 100 Electrical Construction and Planning	4
CON 105 Blueprint Reading	3
MAT 115 Technical Math	3
CON 100 Computers for Construction	<u>2</u>
	16

#### Second Session

EIC 220 Industrial Electrical Controls	4
EIC 120 Electrical Installations II	4
EIC 210 Advanced National Electrical Code	4
English Credit	<u>3</u>
	15

#### Third Session

EIC 155 AC Circuit Fundamentals	4
EIC 225 Programmable Controllers	4
CON 151 Construction Process	4
General Elective Credit	<u>3</u>
	15

#### Fourth Session

EIC 230* AC/DC Machines: Theory and Applications	4
EIC 170* Solid State Circuits and Devices	4
EIC 235* Transformers and Power Distribution	4
Science or Humanities or Social Science Courses	<u>6</u>
	14

*\*Take 2 of 3 classes marked in fourth session*

**Total Required Credits** 60

### Construction Electrician Certificate

#### Required Major Courses

	Credits
<b>First Session</b>	
CON 105 Blueprint Reading	3
EIC 100 Electrical Construction and Planning	4
EIC 130 National Electric Code I	<u>4</u>
	11

#### Second Session

EIC 105 Basics of AC and DC Electricity	4
EIC 120 Electrical Installations I	4
EIC 135 National Electric Code II	<u>4</u>
	12

#### Third Session

CON 100 Computers for Construction	2
CON 151 Construction Process	3
EIC 190 Electrical Code Calculation	<u>4</u>
	9
<b>Total Required Credits</b>	32

### Advanced Construction Electrician Certificate\*

#### Required Major Courses

	Credits
<b>First Session</b>	
CON 105 Blueprint Reading	3
EIC 130 National Electrical Code I	4
EIC 150 DC Circuit Fundamentals	<u>4</u>
	11

#### Second Session

EIC 120 Electrical Installation II	4
EIC 135 National Electrical Code II	4
EIC 205 Advanced Electrical Planning	<u>4</u>
	12

#### Third Session

EIC 155 AC Circuit Fundamentals	4
EIC 190 Electrical Code Calculations	<u>4</u>
	8
<b>Total Required Credits</b>	31

*\*Requires Construction Electrician Certificate or instructor's approval.*

### Maintenance Electrician Certificate

#### Required Major Courses

	Credits
<b>First Session</b>	
CON 100 Computers for Construction	2
CON 105 Blueprint Reading	3
EIC 105 Basics of AC and DC Electricity	4
EIC 120 Electrical Installations II	<u>4</u>
	13

#### Second Session

EIC 130 National Electric Code I	4
EIC 230 AC/DC Machines: Theory and Applications	4
EIC 220 Industrial Electrical Controls I	<u>4</u>
	12

#### Third Session

EIC 135 National Electric Code II	4
EIC 235 Transformers and Power Distribution	<u>4</u>
	8
<b>Total Required Credits</b>	33

### Residential Construction Electrician Certificate

#### Required Major Courses

	Credits
<b>First Session</b>	
CON 105 Blueprint Reading	3
EIC 100 Electrical Construction and Planning	4
EIC 105 Basics of AC and DC Electricity	<u>4</u>
	11

#### Second Session

EIC 110 Electrical Installations I	4
EIC 130 National Electric Code I	<u>4</u>
	8
<b>Total Required Credits</b>	19

## Advanced Maintenance Electrician Certificate\*

Required Major Courses			Credits
<b>First Session</b>			
CON	105	Blueprint Reading	3
EIC	105	Basics of AC and DC Electricity	4
EIC	120	Electrical Installations II	4
			11
<b>Second Session</b>			
EIC	235	Transformers and Power Distribution	4
EIC	220	Industrial Electrical Controls I	4
EIC	210	Advanced National Electrical Code	4
			12
<b>Third Session</b>			
EIC	230	AC/DC Machines: Theory and Applications	4
EIC	215	Advanced Code Calculations	4
EIC	160	Electrical Instruments and Measurements	4
			12
<b>Total Required Credits</b>			<b>35</b>

\*Requires Certificate for Maintenance or instructor's approval.

## Post-Degree Specialization Certificate for Advanced Maintenance Electrician\*

Required Major Courses			Credits
EIC	210	Advanced National Electrical Code	4
EIC	215	Advanced Code Calculations	4
EIC	205	Advanced Electrical Planning	4
EIC	160	Electrical Instruments and Measurements	4
			16
<b>Total Required Credits</b>			<b>16</b>

\*Prerequisite: Maintenance Electrical Emphasis Option or instructor's approval.

## Post-Degree Specialization Certificate for Advanced Construction Electrician\*

Required Major Courses			Credits
<b>First Session</b>			
EIC	170	Solid State Devices and Circuits	4
EIC	220	Industrial Electrical Controls I	4
			8
<b>Second Session</b>			
EIC	235	Power Transformers and Distribution	4
EIC	225	Programmable Controllers	4
			8
<b>Total Required Credits</b>			<b>16</b>

\*Prerequisite: Construction Electrical Emphasis Option or instructor's approval.

## Fine Woodworking (FIW) (See also Carpentry)

This program provides theory and hands-on training for entry skills through craftsman-level competencies. Areas of emphasis are designed to meet your needs, whether you are a part- or full-time student in the areas of millwork, cabinetmaking, furniture making, furniture restoration and repair, toolmaking and related topics of fine woodworking from boat and musical instrument making to bending and veneering.

Courses are competency-based. Variable credit classes are available to fit your schedule. Courses may be repeated up to three times to increase proficiency. All classes open to all skill levels unless otherwise noted.

Additional topics are available through independent study. Personal tool requirements increase with proficiency.

## Construction Technology AAS Degree With an Emphasis in Fine Woodworking

	Credits
<b>General Education Requirements</b>	15
<b>Construction Technology Requirements</b>	9
<b>Total Required Credits</b>	<b>24</b>

Required Major Courses			Credits
<b>First Session</b>			
FIW	152	Tools: Hand and Power, Portable and Stationary	4
FIW	105	Joinery	4
FIW	108	Toolmaking & Jigs ( <i>minimum</i> )	1
FIW	118	Lathe Turning	1
FIW	122	Woodcarving	1
MAT	115	Applied Occupational Math	3
CON	100	Computers for Construction	2
			16

<b>Second Session</b>			
FIW	110	Furniture Repairs ( <i>minimum</i> )	1
FIW	115	Advanced Joinery	4
FIW	125	Finishing Wood ( <i>minimum</i> )	1
FIW	200	Veneering and Marquetry ( <i>minimum</i> )	1
FIW	210	Bending and Laminating ( <i>minimum</i> )	1
FIW	120	Advanced Furniture and Cabinet Construction	8
CON	105	Blueprint Reading	3
General Education: English/Speech Credit			3
			16



## Construction Technology

### Third Session

FIW 116	Cabriole Legs/Queen Anne Furniture ( <i>minimum</i> )	1
FIW 120	Advance Furniture and Cabinet Construction	3
CON 151	Construction Process	4
General Education: Humanities, Science, Social or Behavioral Science Course		3
FIW Elective		<u>4</u>
		15

### Fourth Session

FIW 120	Advanced Furniture and Cabinet Construction	3
FIW Elective		4
General Education Elective		3
General Education: Humanities, Science, Social or Behavioral Science Course		<u>3</u>
		13
Total Required Credits		60

## Fine Woodworking Certificate

### Required Major Courses

		Credits
FIW 105	Joinery	4
FIW 108	Toolmaking & Jigs ( <i>minimum</i> )	1
FIW 110	Furniture Repairs ( <i>minimum</i> )	1
FIW 115	Advanced Joinery	4
FIW 116	Cabriole Legs and Queen Anne Furniture ( <i>minimum</i> )	1
FIW 118	Lathe Turning	1
FIW 120	Advanced Furniture and Cabinet Construction	8
FIW 122	Wood Carving ( <i>minimum</i> )	1
FIW 125	Finishing Wood ( <i>minimum</i> )	1
FIW 152	Tools: Hand and Power, Portable and Stationary	4
FIW 200	Veneering and Marquetry ( <i>minimum</i> )	1
FIW 210	Bending and Laminating ( <i>minimum</i> )	<u>1</u>
		28

### Electives

FIW/CAR	Electives ( <i>must have approval of your advisor</i> )	<u>4</u>
Total Required Credits		32

## Plumbing (PLU)

This program is designed to give you basic job-entry skills. It is also intended for job upgrading in special areas and for preparation of plumbers for the State Journeyman and Masters Exams.

## Construction Technology AAS Degree with Plumbing Emphasis

<b>General Education Requirements</b>	15
<b>Construction Technology Requirements</b>	<u>9</u>
<b>Total Required Credits</b>	24

### Required Major Courses

		Credits
<b>First Session</b>		
PLU 100	Introduction to Plumbing	3
PLU 107	Water Piping Methods and Back Flow Prevention	3
PLU 110	Finish and Installation of Plumbing Fixtures	3
CON 105	Blueprint Reading	3
MAT 115	Applied Occupational Math	<u>3</u>
		15
<b>Second Session</b>		
PLU 109	Residential Plumbing	4
PLU 116	Plumbing Repair	3
PLU 207	Basic Solar Energy	3
CON 100	Computers for Construction	2
English Credit		<u>3</u>
		15
<b>Third Session</b>		
PLU 106	Waste and Vent Layout and Code Requirements	5
PLU 206	Hot Water Heating Systems	4
PLU 208	Advanced Solar Energy	3
Science or Humanities or Social Science Course		<u>3</u>
		15
<b>Fourth Session</b>		
PLU 210	Commercial Layout and Code Project	3
PLU 216	Uniform Plumbing Code	4
CON 151	Construction Process	4
Science or Humanities or Social Science Course		3
General Education Elective		<u>3</u>
		17
Total Required Credits		62

## Basic Plumbing and Heating Maintenance Certificate

### Major Courses

PLU	100	Introduction to Plumbing	3
PLU	110	Finish and Installation of Plumbing Fixtures	3
PLU	116	Plumbing Repair	3
AHR	102	Heating Fundamentals	4
AHR	141	Residential Forced Air Heating	4
AHR/ PLU	206	Hot Water Heating Systems	4
<b>Total Required Credits</b>			<b>21</b>

## Apprentice Plumber's Training Certificate

<b>Required Major Courses</b>			<b>Credits</b>
PLU	100	Introduction to Plumbing	3
PLU	106	Waste and Vent Layout and Code Requirements	5
PLU	107	Water Piping Methods and Back Flow Prevention	3
PLU	109	Residential Plumbing	4
PLU	110	Finish and Installation of Plumbing Fixtures	3
PLU	116	Plumbing Repair	3
CON	105	Blueprint Reading	3
PLU	207	Basic Solar Energy	3
<b>Total Required Credits</b>			<b>27</b>

## Residential Plumber's Certificate

<b>Required Major Courses</b>			<b>Credits</b>
AHR	102	Heating Fundamentals	4
CON	100	Computers for Construction	2
PLU	206	Hot Water Heating Systems	4
PLU	208	Advanced Solar Energy	3
PLU	210	Commercial Layout and Code Project	3
PLU	216	Uniform Plumbing Code	4
PLU	225	Technical Project	4
WFT	120	Welding for Construction	3
<b>Total Required Credits</b>			<b>28</b>

## Solar Construction Technology

### Construction Technology AAS Degree with Active Solar Construction Technology Emphasis

The program is designed to provide the knowledge and skills necessary for job entry into the solar energy installation and maintenance field. Upgrading and refresher courses are offered for those already employed in the field.

		<b>Credits</b>
<b>General Education Requirements</b>		15
Construction Technology Requirements		9
<b>Total Required Credits</b>		<b>24</b>

<b>Required Major Courses</b>			<b>Credits</b>
PLU	100	Introduction to Plumbing	3
PLU	107	Water Piping Methods and Back Flow Prevention	3
PLU	206	Hot Water Heating Systems	4
PLU	207	Basic Solar Energy	3
ENT	125	Basic Solar Design and Layout	3
ENT	126	Solar Collectors	3
ENT	225	Solar Domestic Hot Water Systems	3
ENT	226	Solar Panel Installation	4
ENT	298	Solar Labs	4
AHR	102	Heating Fundamentals	4
AHR	141	Residential Forced Air Heating	4
<b>Total Required Credits</b>			<b>37</b>
<b>Total Required Credits</b>			<b>61</b>

## Construction Technology

### **Construction Technology AAS Degree with Passive Solar Construction Technology Emphasis**

*Many Fine Woodworking students speak highly of the instructor's skills and talents and appreciate the many tremendous contacts that they have been able to make here.*

The program provides the knowledge and skills necessary for job entry. Upgrading and refresher courses are offered for those already employed in the field.

	<b>Credits</b>
<b>General Education Requirements</b>	15
Construction Technology Requirements	<u>9</u>
<b>Total Required Credits</b>	24

	<b>Credits</b>
<b>Required Major Courses</b>	
PLU 207 Basic Solar Energy	3
ENT 141 Passive Solar Systems I	3
BRI 120 Bricklaying for Construction Trades	3
ENT 145 Passive Solar Retrofit	3
AHR 102 Heating Fundamentals	4
DRC 116 Architectural Drafting – Framing Construction	6
DRI 105 Introduction to Drafting	6
DRI 111 Introduction to Computer-Aided Drafting	6
ENT 298 Solar Lab	<u>3</u>
	37
<b>Total Required Credits</b>	61

### **Solar Construction Certificate**

ENT 125 Basic Solar Design and Layout	3
ENT 126 Solar Collectors	3
ENT 225 Solar Domestic Hot Water Systems	3
ENT 298 Solar Lab	3
AHR 102 Heating Fundamentals	4
AHR 141 Residential Forced Air Heating	4
PLU 100 Introduction to Plumbing	3
PLU 107 Water Piping Methods and Back Flow Prevention	3
PLU 206 Hot Water Heating Systems	<u>4</u>
<b>Total Required Credits</b>	30

### **Construction Technology AAS Degree with Apprentice-Related (Applicable Trade) Emphasis**

All apprentice-related courses are taught in cooperation with the Colorado Industry Training Council. You must have the approval of the Chair of Construction Technology.

	<b>Credits</b>
General Education Requirements	15
Construction Technology Requirements	9
Apprentice Trade-Related Certificate	16-32
Construction Technology Electives (see CT Advisor)	<u>4-20</u>
<b>Total Required Credits</b>	60

# Criminal Justice

**Degrees:** Associate of Applied Science  
Associate of General Studies

**Certificates:** Variable

- Basic Law Enforcement Training Academy
- Investigations
- Victim Assistance Administration
- Victim Assistance Direct Service

The Criminal Justice program is designed for those seeking a career in the criminal justice field. If you have a felony conviction, or any kind of criminal or significant driving record, you may not be employable in the criminal justice field. You may choose from the following emphasis areas: law enforcement, corrections, juvenile or victim assistance direct service. Certificate programs in investigations, law enforcement and victim assistance are available. The Associate of General Studies degree is articulated with Metropolitan State College of Denver (MSCD) for those of you planning to continue in the criminal justice and criminology field.

An Associate of General Studies degree with an emphasis in Criminal Justice with the AA or AS core completed and stamped will be considered to have completed MSCD's lower division general studies.

## Associate of Applied Science Degree

Required Major Courses		Credits
CRJ 110	Introduction to Criminal Justice	3
CRJ 111	Substantive Criminal Law	3
CRJ 112	Procedural Criminal Law	3
CRJ 125	Law Enforcement Operations	3
CRJ 135	Judicial Function	3
CRJ 145	Correctional Process	3
CRJ 210	Constitutional Law	3
CRJ 220	Human Relations and Social Conflict	3
CRJ 211	Criminal Behavior	<u>3</u>
	or	
SOC 255	Criminology	27

### General Education Requirements

#### English/Speech

ENG 121	English Composition I	3
SPE 115	Principles of Speech Communications	3

SPE 125	Interpersonal Communication	3
	<i>Mathematics</i> (100 or above)	3

	Credit from any two of the following three areas:	6
	<i>Humanities</i> (ART, FRE, GER, HUM, LIT, MUS, PHI, SPA, THE)	
	<i>Science</i> (AST, BIO, CHE, GEY, PHY)	
	<i>Social and Behavioral Sciences</i> (ANT, ECO, GEO, HIS, POS, PSY, SOC)	<u>15</u>

**Other Required Courses (Emphasis areas)\*** **21**

**Note:** You must select an emphasis area in the Criminal Justice program. Course substitutions may be made with the permission of your faculty advisor. Those who are not presently employed in the field will be required to take a minimum of 3 credits in CRJ 297 Internship and 1 credit of COM 115 The Job Search Process before you can receive your associate degree.

<b>Total Required Credits</b>	<b>63</b>
<b>Total Required Contact Hours</b>	<b>945</b>

\*Criminal Justice Emphasis Areas

## Area of Emphasis: Corrections

Required Courses		Credits
CRJ 146	Community Based Corrections	3
CRJ 150	Introduction to Victims of Crime and Trauma	3
CRJ 225	Crisis Intervention	3
CRJ 255	Organization and Management of Institutions	3
CRJ 256	Classification and Treatment of Offenders	<u>3</u>
<b>Required Courses for Adult Corrections</b>		
CRJ 147	Institutional Based Corrections	3
SOC 218	Sociology of Minorities	3
<b>Required Courses for Juvenile Corrections</b>		
CRJ 148	Juvenile Institutions	3
CRJ 235	Delinquent Behavior	<u>3</u>
	or	
SOC 254	Juvenile Delinquency	3
<b>Total Required Credits</b>		<b>21</b>

## Area of Emphasis: Law Enforcement

You must complete seven law enforcement CRJ courses for a total of 21 credits. You must confer with your CRJ Law Enforcement advisor to determine the appropriate courses. Specific courses required may vary, depending upon your background and work experience. The RRCC Basic Law Enforcement Training Academy may be used to satisfy the requirements of the Law Enforcement Emphasis area.

## Area of Emphasis: Victim Assistance

Required Courses		Credits
CRJ 150	Introduction to Victims of Crime and Trauma	3
CRJ 225	Crisis Intervention	3
CRJ 239	Managing Emergency Worker Stress	3
PSY 227	Death and Dying	3
	or	
SOC 237	Sociology of Death and Dying	3
SOC 258	Violence and Morality	3
<b>Choose any two courses (6 credits)</b>		
CRJ 151	Domestic Violence	3
CRJ 152	Sexual Assault	3
CRJ 153	Violence Against Children	3
CRJ 287	Adult Survivors of Childhood Molestation	<u>3</u>
<b>Total Required Credits</b>		<b>21</b>

## Criminal Justice

### Associate of General Studies Degree with an Emphasis in Criminal Justice

You are urged to consult with the criminal justice faculty advisor before beginning any program of study.

<b>General Education Requirements</b>		<b>Credits</b>
<i>English/Speech</i>		
ENG 121	English Composition I	3
ENG 122	English Composition II	3
SPE 115	Principles of Speech Communication	3
<i>Humanities</i> (courses from two different disciplines)		9
ART 110, 111, 112; Foreign Language 111, 112, 211, 212; HUM 121, 122, 123; LIT 115, 201, 202; MUS 120, 121, 122; PHI 111, 112, 113; THE 211, 212		
<i>Mathematics</i> (any course from the following)		3
MAT 121, 125, 135, 201, 202		
<i>Science</i> (any course from the following)		4
AST 101, 102; BIO 105, 111, 112; CHE 101, 102, 111, 112; GEY 111, 121; PHY 105, 111, 112, 211, 212		
<i>Social and Behavioral Sciences</i> (courses from two different disciplines)		9
ANT 101, 111; ECO 201, 202; GEO 105; HIS 101, 102, 201, 202; POS 105, 111; PSY 101, 102; SOC 101, 102		
		<u>34</u>

#### Required Major Courses

CRJ 110	Introduction to Criminal Justice	3
CRJ 111	Substantive Criminal Law	3
CRJ 112	Procedural Criminal Law	3
CRJ 125	Law Enforcement Operations	3
CRJ 135	Judicial Function	3
CRJ 145	Correctional Process	3
CRJ 210	Constitutional Law	3
CRJ 220	Human Relations and Social Conflict	3
SOC 255	Criminology	3
or		
CRJ 211	Criminal Behavior	<u>3</u>
		27
<b>Total Required Credits</b>		<b>61</b>

### Investigations Certificate

The Investigations Certificate program will be of interest to those of you seeking employment in the private sector or if you are seeking academic recognition in a specialized area of law enforcement.

<b>Required Major Courses</b>		<b>Credits</b>
CRJ 110	Introduction to Criminal Justice	3
CRJ 111	Substantive Criminal Law	3
CRJ 112	Procedural Criminal Law	3
CRJ 118	Report Writing	3
CRJ 210	Constitutional Law	3
CRJ 240	Criminal Investigation	3
CRJ 245	Interview and Interrogation	<u>3</u>
		21
<i>Elective Courses (Select two courses from the following)</i>		
CRJ 190	Financial Investigations	3
CRJ 218	Drug Investigative Strategies	3
CRJ 246	Traffic Investigation and Management	3
FST 252	Arson Investigation	<u>3</u>
		6
<b>Total Required Credits</b>		<b>27</b>
<b>Total Required Contact Hours</b>		<b>405</b>

### Victim Assistance Direct Service Certificate

You must have strong writing skills. A writing sample will be evaluated by the English Department. You must write at the ENG 121 level.

You also need to be computer literate. If you do not have experience using a computer, you will need to take:

CIS 118	Microcomputer Applications (IBM)	5
If you are computer literate, you must demonstrate computer ability prior to CIS 118 being waived. Prospective students must take the ASSET basic skills assessment test. If you score 43 or higher on the writing skills portion, you need to take ENG 121. If you score 42 or lower on the writing skills portion, you need to take ENG 105 prior to ENG 121. Writing ability and computer literacy are pre-requisites to receiving the certificate.		
		<b>Credits</b>
CRJ 110	Introduction to Criminal Justice	3
CRJ 150	Introduction to Victims of Crime and Trauma	3
CRJ 151	Domestic Violence	3
CRJ 152	Sexual Assault	3
CRJ 153	Violence against Children	3
CRJ 225	Crisis Intervention	3
CRJ 239	Managing Emergency Worker Stress	3
CRJ 287	Adult Survivors of Childhood Molestation	3
PSY 227	Death and Dying	3
or		
SOC 237	Sociology of Death and Dying	
SOC 258	Violence and Morality	<u>3</u>
<b>Total Required Credits</b>		<b>30</b>
<b>Total Required Contact Hours</b>		<b>492</b>

### Victim Assistance Administration Certificate

		<b>Credits</b>
CRJ 110	Introduction to Criminal Justice	3
CRJ 150	Introduction to Victims of Crime and Trauma	3
CRJ 239	Managing Emergency Worker Stress	3
CRJ 288	Grant Writing for Non-profit Organizations	2
ACC 121	Principles of Accounting I	5
MAN 200	Human Resources Management	3
MAN 226	Principles of Management	3
MAR 216	Principles of Marketing	<u>3</u>
<b>Total Required Credits</b>		<b>25</b>
<b>Total Required Contact Hours</b>		<b>417</b>

### Basic Law Enforcement Training Academy P.O.S.T. Certification

This certificate program exceeds the Colorado Peace Officers Standards and Training (P.O.S.T.) requirements for Peace Officer entry level training. You will earn 27 credits during this intense course of study. Twenty-one of these credits may be used to meet the Law Enforcement Emphasis area requirement of the Associate of Applied Science degree. This is not an open enrollment offering. You must make separate application to the Academy. See the Academy Director for details. Information: (303) 914-6464 or (303) 914-6462

<b>Required Courses</b>		<b>Credits</b>
CRJ 101*	Basic Law Enforcement Academy	9
CRJ 102	Arrest and Control Techniques	2
CRJ 103	Law Enforcement Driving	1
CRJ 104	Firearms	2
CRJ 126*	Patrol Procedures	3
CRJ 214*	Colorado Revised Statutes	3
CRJ 240*	Criminal Investigation	3
CRJ 246*	Traffic Investigation and Management	3
PHE 100	Aerobic Conditioning	<u>1</u>
<b>Total Required Credits</b>		<b>27</b>

\*These courses may be used to satisfy the Emphasis area requirement of the Associate of Applied Science degree in Law Enforcement.

## Permanent CRJ Course Offerings Listed by Session

### Fall Courses

CRJ 110	Introduction to Criminal Justice
CRJ 112	Procedural Criminal Law
CRJ 118	Report Writing
CRJ 125	Law Enforcement Operations
CRJ 135	Judicial Function
CRJ 145	Correctional Process
CRJ 146	Community-Based Corrections
CRJ 150	Introduction to Victims of Crime and Trauma
CRJ 190	Financial Investigations
CRJ 210	Constitutional Law
CRJ 218	Drug Investigative Strategies
CRJ 235	Delinquent Behavior
CRJ 240	Criminal Investigation
CRJ 246	Traffic Investigation and Mangement
CRJ 287	Adult Survivors of Childhood Molestation
CRJ 290	Special Topics in Criminal Justice
CRJ 297	Internship
SOC 237	Sociology of Death and Dying
SOC 255	Criminology

### Spring Courses

CRJ 110	Introduction to Criminal Justice
CRJ 111	Substantive Criminal Law
CRJ 116	Civil Liability
CRJ 126	Patrol Procedures
CRJ 148	Juvenile Institutions
CRJ 151	Domestic Violence
CRJ 153	Violence Against Children
CRJ 211	Criminal Behavior
CRJ 216	Juvenile Law and Procedure
CRJ 220	Human Relations and Social Conflict
CRJ 225	Crisis Intervention
CRJ 239	Managing Emergency Worker Stress
CRJ 245	Interview and Interrogation
CRJ 256	Classification and Treatment of Offenders
CRJ 290	Special Topics in Criminal Justice
CRJ 297	Internship
SOC 258	Violence and Morality

### Summer Courses

CRJ 110	Introduction to Criminal Justice
CRJ 111	Substantive Criminal Law
CRJ 145	Correctional Process
CRJ 152	Sexual Assault

**Note:** Additional Criminal Justice courses are offered during the Summer session. Check the *Summer Class Planning Schedule* for specific offerings.

# Early Childhood Education

**Degree: Associate of General Studies**

**Certificate: Director**

**Certificate: Group Leader**

Red Rocks Community College provides three possible alternatives for individuals desiring training in the Early Childhood Education field. These alternatives are Group Leader Certificate, Director's Certificate, and an Associate of General Studies Degree in Early Childhood Education. Through the courses offered in the Early Childhood Education program, you may enter the field at the entry level and become a group leader as approved by the State of Colorado Department of Human Services. You may then utilize the courses in the Group Leader Certificate to partially meet requirements for Director Qualification. You may also pursue an Associate of General Studies Degree in Early Childhood Education, that transfers to Metropolitan State College of Denver (MSCD). Courses marked with (\*) are accepted as transfer credit at MSCD.

In Colorado, the three alternatives for fulfilling the requirements for the Director Certificate in Early Childhood Education are 1) completion of all the (\*) courses and two years or the equivalent of two full years of acceptable experience; 2) an Associate of General Studies degree, including completion of the (\*) courses and one year of experience; or 3) the equivalent of one year of acceptable, full-time experience.

## Associate of General Studies

All individuals seeking an AGS degree from Red Rocks Community College must be able to pass the ASSET Test of General Education Skills with a level of 41+ in Reading Comprehension and 43+ in Writing.

- You should plan your program of study with the Early Childhood Education Coordinator.
- You are encouraged to take ECE 101 or 111 and ECE 238 in your first year of classes.
- ECE 226 should be taken only after taking ECE 238 and six additional ECE credits.
- Contact an Early Childhood Education faculty advisor the semester prior to taking ECE 102 to ensure space availability in the class
- Some ECE classes are offered on a two-year cycle. Contact the Early Childhood Education Coordinator for the proposed schedule of these courses.
- If you wish to focus on infants and toddlers, you may substitute ECE 111 and ECE 112 for ECE 101 and ECE 102

## Drafting Technology

*(See Engineering Graphics Technology)*

## Early Childhood Education

### Required Major Courses

#### First Session

ENG	121	English Composition I	3
SOC	101	Sociology I	3
		or	
SOC	205	Marriage and Family	
		Humanities Elective ( <i>core</i> )	3
ECE*	238	Child Growth and Development	3
ECE*	101	Intro to Early Childhood Profession	3
			<u>3</u>
			15

By the end of 15 credit hours, you need to take the assessment of basic skills. If you cannot achieve a score of 41+ on the reading and 43+ in writing, you will need to seek additional help in the Learning and Resource Center.

#### Second Session (Spring Only)

ECE*	148	Guidance Strategies for Children	3
ECE*	227	Methods and Techniques	3
PSY	101	General Psychology I	3
SPE	115	Principles of Speech Communication	3
ECE*	102	Introduction to ECE Lab	3
			<u>3</u>
			15

#### Third Session (Fall Only)

(ECE 116 and ECE 118 offered alternating years)

ECE*	205	Nutrition for Young Children	3
ECE*	116	Supporting Children's Language and Cognitive Growth	3
ECE*	118	Supporting Emotional and Social Growth	3
ECE*	216	Administration: Human Relations for the Early Childhood Profession	3
BIO	111	General College Biology I ( <i>Preferred</i> )	5
		or	
GEY	111	Physical Geology	4
		or	
AST	101	Astronomy I	4
ECE*		Elective	3
			<u>3</u>
			16-17

#### Fourth Session (Spring or Summer Only)

ECE*	115	Creativity and the Young Child	3
ECE*	295	Professional Issues	3
ECE*	226	Administration of ECE Centers	3
MAT	135	Introduction to Statistics ( <i>preferred</i> )	3-4
		or	
MAT	121	College Algebra	
ECE*	117	First Start: Children with Disabilities	3
			<u>3</u>
			15-16
		Total Required Credits (minimum)	63

### Electives

ECE 111 and ECE 112 may be substituted for ECE 101 and 102.  
ECE 291 are one credit classes covering current topics of interest  
ECE 291 Family Child Care Classes

### Credits

## Early Childhood Education Director Certificate

The Director Certificate at Red Rocks Community College enriches the social services director qualifications by offering ECE 102 or ECE 112 Lab in order to provide a field of experience in Early Childhood Education. Professional issues are required as well. All individuals receiving this certificate from Red Rocks are required to pass the ASSET Test of General Education skills with a level of 41+ in reading comprehension and 43+ in Writing.

You may take all courses required by Colorado State Social Services for Director Qualification including ECE 205, ECE 227, ECE 238, PSY 101, SOC 101 plus six additional ECE credits in methods. Colorado also requires two full years (*or equivalent*) of acceptable experience or an Associate of General Studies degree including the above listed courses and one year (*or equivalent*) of acceptable, full-time experience.

### Required Major Courses

#### First Session

ECE*	101	Introduction to Early Childhood Education	3
ECE*	102	ECE Lab Experience	3
			<u>3</u>
			6

#### Second Session

ECE*	148	Guidance Strategies for Children	3
ECE*	238	Child Development	3
ECE*	227	Methods and Techniques	3
			<u>3</u>
			9

By the end of 16 credit hours, you are required to take the ASSET Test which is an assessment of basic skills. If you cannot achieve a score of 41+ on the reading comprehension and 43+ in writing, you will be required to seek additional help in the Learning and Resource Center.

#### Third Session

ECE*	205	Nutrition of the Young Child	3
PSY	101	Introduction to Psychology	3
ECE*	216	Administration: Human Relations for the Early Childhood Profession	
		or	
ECE*	226	Administration of Early Childhood Care and Education Programs	3
			<u>3</u>
			9

#### Fourth Session

ECE*	295	Childhood Education Professional Issues	3
SOC	101	Introduction to Sociology I	
		or	
SOC	205	Marriage and Family	3
			<u>3</u>
			6
		Total Required Credits	30

## Early Childhood Education Group Leader Certificate

The Group Leader certificate at Red Rocks meets Colorado State Human Services' guidelines for a group leader. Individuals qualifying for the Child Development Associate (CDA) certificate automatically qualify for a Group Leader certificate.

### Required Major Courses:

#### First Session

ECE*	101	Introduction to Early Childhood	3
ECE*	102	Introduction to ECE Lab	3
			<u>3</u>
			6

#### Second Session (Spring Only)

ECE*	148	Guidance Strategies for Children	3
ECE*	238	Child Growth and Development	4
ECE*	227	Methods and Techniques	3
			<u>3</u>
			10
		Total Required Credits	16

# Economics

## Associate of Arts Degree With an Emphasis in Economics

Economics is the study of how our society feeds, clothes, houses and otherwise materially supports itself. It answers the fundamental questions of how?, what? and for whom? Graduates work in business, government and teaching in very colorful and varied careers and they are able to contribute in many ways to answering these basic questions that confront all societies and individuals. You are urged to consult with a faculty advisor before beginning any program of study.

<b>Recommended Courses</b>			<b>Credits</b>
ACC	121	Accounting Principles I	4
ACC	122	Accounting Principles II	4
ACC	226	Cost Accounting	4
ECO	201	Principles of Macroeconomics <i>(Core)</i>	3
ECO	202	Principles of Microeconomics <i>(Core)</i>	3
HIS	101	Western Civilization I <i>(Core)</i>	3
HIS	102	Western Civilization II <i>(Core)</i>	3

### Core Curriculum Requirements

#### *English/Speech*

ENG	121	English Composition I	3
ENG	122	English Composition II	3
SPE	115	Principles of Speech Communication	3

#### *Humanities* (courses from two different disciplines)

ART 111, 112; Foreign Language 111, 112, 211, 212;  
HUM 121, 122, 123; LIT 115, 201, 202; MUS 120, 121, 122;  
PHI 111, 112, 113; THE 211, 212

#### *Mathematics* (any course from the following)

MAT 121, 125, 135, 201, 202

#### *Science* (any course from the following)

AST 101, 102; BIO 105, 111, 112; CHE 101, 102, 111, 112;  
GEY 111, 121; PHY 105, 111, 112, 211, 212

#### Electives

Electives must be selected from college-level transfer courses.  
No more than three credits in physical education may be counted.

<b>Total Required Credits</b>	<b>60</b>
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# Electricity–Commercial/Industrial/Residential

*(See Construction Technology)*

# Electronic Digital/Computer Technology

## Degree: Associate of Applied Science

### Certificate: 28 Credits

This is a comprehensive program designed to give a thorough understanding of digital electronics and computer systems up through and including local area networks. This program provides the basic essentials for entry level positions in field engineering and support as well as opportunities for job upgrading. The preparation includes most hardware and network types. These platforms include vendors and products that are common from the smallest to the largest user. These systems include MS\_DOS, Windows, NetWare, and others. You will design and write a simple network in machine language; this provides a strong understanding of network communications. You will also plan, install, configure and support networks, applications and systems. You work in a real working environment providing end-user support and training.

### \*Required Major Courses

			<b>Credits</b>
<b>First Session (Fall)</b>			
EDT	110**	DC Circuits	7
EDT	120**	AC Circuits	7
EDT	216	Microprocessor Programming Part A	2
MAT	100	Introductory Algebra	3
			<b>19</b>
<b>Second Session (Spring)</b>			
EDT	130**	Digital Logic Devices for Electronics	7
EDT	140**	Linear Circuits	7
EDT	217	Microprocessor Programming Part B	2
PHY	105	Conceptual Physics	4
			<b>20</b>
<b>Third Session (Fall)</b>			
EDT	210	Computer Hardware	7
EDT	220	Computer Troubleshooting and Support	7
ENG	231	Technical Writing	3
General Education Elective			2
			<b>19</b>
<b>Fourth Session (Spring)</b>			
EDT	230	Microprocessors In Networks Part 1	7
EDT	240	Microprocessors In Networks Part 2	7
PSY	100	Human Relations in Business	3
			<b>17</b>
<b>Total Required Credits</b>			<b>75</b>

*\*This schedule is for full-time day students. Night students have a different schedule. Please contact you advisor.*

*\*\*Certificate Requirements*



## Electronic Digital/Computer Tech

### Colorado Windows Engineering Certificate

This program is designed to help prepare you for a career in network engineering and support. The preparation includes most major network platforms. These platforms include vendors and products that are common, from the smallest to the largest networks. This program prepares you to be a leader in future super data highways. You begin by preparing basic network and OS background. You will focus on networking and its building blocks.

You are also encouraged to take the IBM A+ Technical Certification Test and the NOVELL Certification Tests to receive the CNE and Master CNE rating from NOVELL and the A+ Certification from Computing Technology Industry Association. You will design and write a simple networking program in machine language; this ensures your understanding of network communications. This program has as its goal the production of enterprise network engineering specialists.

**Note:** Red Rocks Community College has no control over curriculum changes made by the agencies mentioned above.

<b>Required Major Courses</b>		<b>Credits</b>
<b>First Session</b>		
EDT 230	Microprocessor In Networks Part A	7
EDT 240	Microprocessor In Networks Part B	<u>7</u>
		14
<b>Second Session</b>		
EDT 260	NOVELL Certified CNE & Master CNE Part 1	<u>7</u>
		7
<b>Third Session</b>		
EDT 270	NOVELL Certified CNE & Master CNE Part 2	<u>7</u>
		7
<b>Third Session</b>		
EDT 280	NOVELL Certified CNE & Master CNE Part 3	<u>7</u>
		7
<b>Fourth Session</b>		
EDT 285	NOVELL Certified CNE & Master CNE Part 4	<u>7</u>
		7
	<b>Total Required Credits</b>	<b>42</b>

**Note:** Only grades of C or better in courses with an EDT prefix or courses transferred in for EDT prefix courses are counted toward the degree or certificate.

All incoming students are expected to have a strong computer background. If that is not the case for students, they should first take EDT 210 and EDT 220 before attempting EDT 230 and EDT 240.

# Emergency Management and Planning

**Degree: Associate of Applied Science**

**Certificate: 30 Credits**

Completion of this curriculum prepares individuals for:

- Entry into a career of Emergency Management Planning or related field.
- Promotion within Emergency Management or Preparedness divisions in Public and Private work places.
- Advancement to a four-year college in pursuit of a Bachelor of Science degree in Emergency Management or Public Administration.

The Emergency Management and Planning Program is designed to serve as the focal point for the development and delivery of emergency management training to enhance the capabilities of federal, state and local government officials; volunteer organizations; and the private sector to minimize the impact of disasters on the American public.

This program offers a number of training activities that develop operational capabilities and facilitate an effective response in the event of an emergency.

This program provides a degree option and enhanced employment opportunities for those in the program. Emergency management, preparedness, mitigation and planning are very vital professions in government, private industry and emergency response agencies. Strong emphasis is placed on prevention, public education and planning.

Prior to enrollment, if you are not presently working in Emergency Management, you are required to take assessment tests which will be administered in the Learning Development Center. The emergency management instructor, upon consultation with assessment staff, evaluates test results in order to assist you with proper placement in their course of study in emergency management. *If you are an advanced student you are expected to substitute advanced courses for introductory courses.*

## Associate of Applied Science Degree

<b>Required Major Courses</b>		<b>Credits</b>
EMP 101	Introduction to Emergency Management	3
EMP 105	Emergency Planning	3
EMP 106	Exercise Design	1 1/2
EMP 107	Computer Systems & Information	3
EMP 108	Mass Casualty	1
EMP 109	Community Emergency Response Teams and Incident Command	3
EMP 110	Exercise Evaluation	1 1/2
EMP 200	Hazard Mitigation Planning	3
EMP 240*	Leadership and Influence	1
EMP 241*	Decision Making and Problem Solving	1
EMP 242*	Effective Communications	1
EMP 244	Developing Volunteer Resources	1
ENV 101	Introduction to Environmental Science	3
FST 107	Hazardous Materials Awareness & Operations	3
FST 201	Instructional Methodology ( <i>Instructor I</i> )	3
		30

<b>General Education Requirements</b>		<b>Credits</b>
ENG 131	Technical Writing	3
GEY 235	GIS—Geographical Information Systems	4
MAT 135	Introduction to Statistics	3
PSY 101	General Psychology or three 1 credit hour PSY courses	3
SOC 101	Introduction to Sociology	3
		16-17

<b>Electives</b>		<b>Credits</b>
EMP 280	Public Policy in Emergency Management	1
EMP 291	Introduction to Public Information	2
EMP 292	Radiological Fundamentals ( <i>FCRR</i> )	2
EMP 297	Cooperative Education ( <i>Internship</i> )	1-6
EMP 299	Independent Study	3
FST 255	Fire Service Management	3
MAN 116	Principles of Supervision	3
MAN 226	Principles of Management	3
SPE 125	Interpersonal Communications	3
		14-18

Electives must be selected from college-level transfer courses. No more than three credits in physical education may be counted.

**Total Required Credits** **60**

*\*Other approved courses may be substituted with counselor approval.*

## Emergency Management and Planning Certificate

		<b>Credits</b>
EMP 101	Introduction to Emergency Management	3
EMP 105	Emergency Planning	3
EMP 106	Exercise Design	1 1/2
EMP 109	Community Emergency Response and Incident Command	3
EMP 110	Exercise Evaluation	1 1/2
EMP 240	Leadership and Influence	1
EMP 241	Decision Making and Problem Solving	1
EMP 242	Effective Communications	1
EMP 244	Developing Volunteer Resources	1
EMP 246	Capstone Seminar	1
EMP 280	Public Policy in Emergency Management	1
EMP 291	Introduction to Public Information	2
EMP 292	Radiological Fundamentals ( <i>FCRR</i> )	3
EMP 297	Cooperative Education ( <i>Internship</i> )	1-6
EMP 299	Independent Study ( <i>Program Analysis</i> )	1-6
FST 201	Instructional Methodology	3
GEY 235	Computers Systems ( <i>GIS</i> )	3
		30

# Engineering *(Preparatory)*

## Associate of Science Degree with an Emphasis in Engineering-Prep

The college offers courses that will transfer to many of the four-year institutions including Colorado State University, Colorado School of Mines and the University of Colorado at Boulder and Denver. All transfer students are subject to a minimum grade point average of 3.0 (B) or better to compete successfully for admission to these institutions. No single criterion for admission is used; however, the most important factor is scholastic achievement.

You are urged to consult with a Red Rocks Pre-Engineering/Mathematics faculty advisor before beginning any program of study.

### Associate of Science

This is a suggested sequence for full-time students completing the degree. Part-time students will take longer to complete the sequence. Some courses might not be offered each session.

First Session—Fall			Credits
CHE	111	General College Chemistry I	5
CHE	111	General College Chemistry I Lab	
ENG	121	English Composition I	3
MAT	201	Calculus I	5
Core: Social/Behavioral Science Elective			<u>3</u>
			16
Second Session—Spring			
CHE	112	General College Chemistry II	5
CHE	112	General College Chemistry II Lab	
ENG	122	English Composition II	3
MAT	202	Calculus II	5
Core: Social /Behavioral Science Elective			<u>3</u>
			16
Third Session—Fall			
PHY	211	Physics: Calculus-based I	5
PHY	211	Physics: Calculus-based I Lab	
SPE	115	Principles of Speech Communication.	3
Core: Humanities Elective			3
CSC	XXX	Computer Science Elective	<u>4</u>
			15
Fourth Session—Spring			
PHY	212	Physics: Calculus-based II	5
PHY	212	Physics: Calculus-based II Lab	
Core: Humanities Elective			3
CSC	XXX	Computer Science Elective	4
Transferable Elective *			<u>3</u>
			15
Total Required Credits			60-63

\* Transferable Electives should be approved by the student's faculty advisor. No more than three semester credits in physical education will count toward the Associate of Science degree.

# Engineering Graphics Technology

*(Formerly Drafting Technology)*

## Degrees: Associate of Applied Science With an Emphasis in Architectural or Mechanical

### Certificates: Variable Credits

The Engineering Graphics Technology program offers Associate of Science degrees and certificates with emphases in Architectural and Mechanical drafting and design. This program prepares you for employment as design drafters.

If you are seeking to upgrade or advance your current drafting knowledge and skills, classes can be tailored to fit your course work and schedule needs. Prerequisites may be waived for previous educational, occupational or related experience. The curricula are designed to develop communication, leadership and critical thinking skills and to provide a setting in order for you to experience a team approach to problem solving.

You will use CADD (Computer-Aided Design Drafting) to form the foundation for drafting standards, conventions, layouts, designs and details of working drawings and models. ANSI and AIA specifications, handbooks and technical data applicable to engineering graphics are emphasized. Lab fees are assessed. You should consult with a Red Rocks Engineering Graphics Technology faculty advisor before beginning any program of study.

## Associate of Applied Science Degree With an Emphasis in Architectural

Along with the Engineering Graphics course work, 15 general education semester credits are required for the AAS degree. The following is a suggested sequence for completing an Associate of Applied Science Degree in Engineering Graphics—Architectural for full-time students. If you are a part-time student it will take you longer to complete the sequence. Some courses might not be offered each session.

<b>First Session</b>		<b>Credits</b>
EGT	100 Technical Drawing	9
EGT	110 Basic CADD ( <i>Computer-Aided Design Drafting</i> )	6
*General Education Mathematics Requirement		<u>3-5</u>
		18-20

<b>Second Session</b>		
EGT	120 Intermediate CADD ( <i>Computer-Aided Design Drafting</i> )	3
EGA	121 Intermediate CADD ( <i>Architectural</i> )	3
EGT	130 Three-Dimensional CADD	3
EGA	131 Three-Dimensional CADD ( <i>Architectural</i> )	3
ENG	131 Technical Writing ( <i>General Ed. English Requirement</i> )	<u>3</u>
		15

<b>Third Session</b>		
EGX	XXX Architectural Elective Course(s)	3
Faculty Advisor Approved Elective		3
PHY	XXX* Physics ( <i>General Ed. Science Requirement</i> )	4-5
EGA	231 Architectural Design/Drafting I	<u>6</u>
		16-17

<b>Fourth Session</b>		
EGA	241 Architectural Design/Drafting II	6
EGX	XXX Architectural Elective Course(s)	3
Faculty Advisor Approved Elective		3
General Education Humanities, Social/Behavioral Science Requirement		<u>3</u>
		15

<b>Architectural Electives</b>		<b>Credits</b>
EGA	203 Site Orientation	1
EGA	204 Plot Plan Layout	1
EGA	205 Exterior Design	1
EGA	206 Foundation Systems	1
EGA	207 Framing Methods	3
EGA	208 Floor Systems	3
EGA	209 Roof Design	2
EGA	212 Electrical Plans	1
EGA	213 Plumbing Plans	1
EGA	214 HVAC Plans	1
EGA	215 Windows and Doors	1
EGA	216 Millwork and Cabinet Layout	1
EGA	217 Stair Structure and Layout	1
EGA	218 Fireplace Construction and Layout	1
EGT	220 Technical Illustration	3
EGT	235 Rendering Methods	3
EGT	255 Model Building	3
EGT	260 Portfolio Presentation	1
EGT	265 Presentation Graphics	<u>3</u>
<b>Total Required Credits</b>		<b>60-66</b>
<b>Total Required Contact Hours</b>		<b>1012 1/2-1147 1/2</b>

\*Mathematics Course: MAT 102, 121, 122 or 201 (or higher)  
Physics Course: PHY 105 (or higher)

For the Humanities or Social/Behavioral Science Elective see "Core Courses" under the Degrees and Certificates section of this Catalog.

## Associate of Applied Science Degree With an Emphasis in Engineering Graphics—Mechanical

Along with the Engineering Graphics course work, 15 general education semester credits are required for the AAS degree. The following is a suggested sequence for completing an Associate of Applied Science Degree in Engineering Graphics—Mechanical for full-time students. If you are a part-time student it will take you longer to complete the sequence. Some courses might not be offered each session.

<b>First Session</b>		<b>Credits</b>
EGT	100 Technical Drawing	9
EGT	110 Basic CADD ( <i>Computer-Aided Design Drafting</i> )	6
*General Education Mathematics Requirement		<u>3-5</u>
		18-20

<b>Second Session</b>		
EGT	120 Intermediate CADD ( <i>Computer-Aided Design Drafting</i> )	3
EGM	121 Intermediate CADD ( <i>Mechanical</i> )	3
EGT	130 Three-Dimensional CADD	3
EGM	131 Three-Dimensional CADD ( <i>Mechanical</i> )	3
ENG	131 Technical Writing ( <i>General Ed. English Requirement</i> )	<u>3</u>
		15

<b>Third Session</b>		
EGX	XXX Mechanical Elective Course(s)	3
Faculty Advisor Approved Elective		3
PHY	XXX* Physics ( <i>General Ed. Science Requirement</i> )	4-5
EGM	231 Mechanical Design/Drafting I	<u>6</u>
		16-17

<b>Fourth Session</b>		
EGM	241 Mechanical Design/Drafting II	6
EGX	XXX Mechanical Elective Course(s)	3
Faculty Advisor Approved Elective		3
General Education Humanities, Social/Behavioral Science Requirement		<u>3</u>
		15

<b>Mechanical Electives</b>		<b>Credits</b>
EGM	205 Assembly and Detail/GP & T	3
EGM	215 Mechanism and Drives	3
EGM	245 Manufacturing Processes	3
EGM	248 Hardware and Welding Processes	3
EGT	220 Technical Illustration	3
EGT	235 Rendering Methods	3
EGT	255 Model Building	3
EGT	260 Portfolio Presentation	1
EGT	265 Presentation Graphics	<u>3</u>
<b>Total Required Credits</b>		<b>60-66</b>
<b>Total Required Contact Hours</b>		<b>1012 1/2-1147 1/2</b>

\*Mathematics Course: MAT 102, 121, 122 or 201 (or higher)  
Physics Course: PHY 105 (or higher)

For the Humanities or Social/Behavioral Science Elective see "Core Courses" under the Degrees and Certificates section of this Catalog.

**Architectural Option Certificate**

The following is a suggested sequence for completing a Certificate in Engineering Graphics—Architectural for full-time students. If you are a part-time student it will take you longer to complete the sequence. Some courses might not be offered each session.

First Session		Credits
EGT 100	Technical Drawing	9
EGT 110	Basic CADD ( <i>Computer-Aided Design Drafting</i> )	6
*General Education Mathematics Requirement		<u>3-5</u>
		18-20
Second Session		
EGT 120	Intermediate CADD ( <i>Computer-Aided Design Drafting</i> )	3
EGA 121	Intermediate CADD ( <i>Architectural</i> )	3
EGT 130	Three-Dimensional CADD	3
EGA 131	Three-Dimensional CADD ( <i>Architectural</i> )	3
Faculty Advisor Approved Elective(s)		<u>3</u>
		15
<b>Total Required Credits</b>		<b>33-35</b>
<b>Total Required Contact Hours</b>		<b>675</b>

\* May take MAT 102, 121, 122, 123 or 201 (or higher)

**Mechanical Option Certificate**

The following is a suggested sequence for completing a Certificate in Engineering Graphics—Mechanical for full-time students. If you are a part-time student it will take you longer to complete the sequence. Some courses might not be offered each session.

First Session		Credits
EGT 100	Technical Drawing	9
EGT 110	Basic CADD ( <i>Computer-Aided Design Drafting</i> )	6
*General Education Mathematics Requirement		<u>3-5</u>
		18-20
Second Session		
EGT 120	Intermediate CADD ( <i>Computer-Aided Design Drafting</i> )	3
EGA 121	Intermediate CADD ( <i>Mechanical</i> )	3
EGT 130	Three-Dimensional CADD	3
EGA 131	Three-Dimensional CADD ( <i>Mechanical</i> )	3
Faculty Advisor Approved Elective(s)		<u>3</u>
		15
<b>Total Required Credits</b>		<b>33-35</b>
<b>Total Required Contact Hours</b>		<b>675</b>

\* May take MAT 102, 121, 122, 123 or 201 (or higher)

**English**

**Degree: Associate of Arts with an Emphasis in English**

The completion of the following courses is appropriate for those of you who plan to transfer to a four-year college or university to complete a major in English. For those of you who do not plan to major in English, emphasis in this area provides an excellent, general liberal arts background for many professions such as teaching, writing, community service, law and research. You are urged to consult with a faculty advisor before beginning any program of study.

**Recommended Courses**

Select 21 credits from the following courses:		Credits
ENG 131	Technical Writing I	3
ENG 221	Creative Writing I	3
LIT 115	Introduction to Literature ( <i>Core</i> )	3
LIT 201/202	Masterpieces of Literature I, II ( <i>Core</i> )	3
LIT 125	Study of the Short Story	3
LIT 126	Study of Poetry	3
LIT 127	Study of the Novel	3
LIT 211/212	Survey of American Literature I, II	3
LIT 221/222	Survey of British Literature I, II	3

**Core Curriculum Requirements**

<i>English/Speech</i>		
ENG 121	English Composition I	3
ENG 122	English Composition II	3
SPE 115	Principles of Speech Communications	3
<i>Humanities</i> (courses from two different disciplines)		9
ART 111, 112; Foreign Language 111, 112, 211, 212; HUM 121, 122, 123; MUS 120, 121, 122; PHI 111, 112; THE 211, 212; LIT 115, 201, 202		
<i>Mathematics</i> (any course from the following)		3
MAT 121, 125, 135, 201, 202		
<i>Science</i> (any course from the following)		4
AST 101, 102; BIO 105, 111, 112; CHE 101, 102, 111, 112; GEY 111, 121; PHY 105, 111, 112, 211, 212		
<i>Social and Behavioral Sciences</i> (courses from two different disciplines)		9
ANT 101, 111; ECO 201, 202; GEO 105; HIS 101, 102, 201, 202; POS 105, 111; PSY 101, 102; SOC 101, 102		
Electives	<u>5</u>	
Electives must be selected from college-level transfer courses. No more than three credits in physical education may be counted.		

Total Required Credits **60**

# Environmental and Safety Technology

## Degrees: Associate of Applied Science With Areas of Emphasis in:

- Environmental Technology
- Field Engineering Technology
- Hazardous Materials Technology
- Occupational Safety
- Water Quality Management

This application-oriented degree and certificate are offered through the Colorado Consortium for Environmental and Safety Technology (EST). Required and recommended courses offered at Front Range, Red Rocks, and Arapahoe Community Colleges. However, specific graduation requirements may differ slightly among the colleges. This program area offers four specializations: Environmental Technology, Field Engineering Technology, Occupational Safety and Water Quality Management. Regardless of the area of specialization, the following technical and general education courses are required.

### Technical Core

If you are completing the EST Associate of Applied Science degree program, you must complete the following required courses.

ENV	101	Introduction to Environmental Science	4
EST	151	Environmental Laws	3
EST	112	Chemistry of Hazardous Materials	4
OSH	131	OSHA General Industry Standards	5
		or	
EST	132	Environmental Health and Safety	3
			19

### General Education

ENG	121	English Composition I	3
ENG	131	Technical Writing	3
SPE	115	Principles of Speech Communication	3
MAT	121	College Algebra	4
CHE	101	Introduction to Chemistry I	5
		or	
CHE	111	College Chemistry I	4
CIS	118	Microcomputer Applications or equivalent	4
Science Elective		3	25

## Area of Emphasis: Environmental Technology

This program teaches skills for technical involvement in a variety of environmental issues, especially those involving hazardous materials. The program emphasizes hands-on skills, problem solving, and application oriented instruction.

**Technical Core (see above) 19**

**General Education Requirements (see above) 25**

### Technical Electives

*(choose 16 credits from the list below)*

EST	107	Emergency Response/Hazardous Materials Ops	3
EST	211	Pollution Prevention	3
EST	225	Air Pollution	3
EST	231	Site Remediation	3
EST	241	Environmental Sampling	4
EST	254	Emergency Response/Hazardous Materials Tech	6
EST	261	RCRA Compliance	3
EST	265	Environmental Auditing	3
EST	268	Site Assessment	3
EST	270	Risk Assessment	3
EST	280	Environmental Compliance	3
EST	290	Transportation of Hazardous Materials	3
EST	295	Environmental Management	3
		<b>Total Required Credits</b>	<b>60</b>

## Area of Emphasis: Field Engineering Technology

*(Approval Pending)*

This program is designed to provide application oriented training to meet public and private sector needs for skilled technicians in field engineering. Those completing the program will have a variety of technical skills including soil and materials testing, application and limitations of engineering materials, engineering components of solid waste management, and construction management. This program is currently under development and final approval is pending.

**Technical Core (see above) 19**

**General Education Requirements (see above) 25**

### Technical Electives

*(choose 16 credits from the list below)*

*Courses that may be available in 1997-98 include the following:*

FET	122	Introduction to Field Engineering	3
FET	124	Engineering Properties of Soils	3
FET	232	Engineering Materials	3
FET	233	Engineering Aspects of Solid Waste Management	3
FET	262	Construction Management	4

## Environmental/Safety Tech

### **Area of Emphasis: Occupational Safety**

The Occupational Safety program is designed to provide training to both pre-service students and in-service workers. As a comprehensive industry oriented program, this curriculum was established to provide knowledge and skills in safety applications as they relate to the construction and general industry fields.

**Technical Core (see above) 19**

**General Education Requirements (see above) 25**

#### **Technical Electives**

*(choose 16 credits from the list below)*

OSH 111	Fire Analysis	2
OSH 130	Construction Standards	5
OSH 131	General Industry Standards	5
EST 132	Environmental Health and Safety	3
OSH 196	Safety Program Planning	3
OSH 200	Hazardous Materials	2
OSH 201	Worker Compensation Cost Containment	2
OSH 202	Accident Prevention	2
OSH 203	Ergonomics: Managing Task Stress	3
OSH 207	Industrial Hygiene	3
OSH 255	Instrument Laboratory	2
EST 107	Hazardous Material Operations	3
	<b>Total Required Credits</b>	<b>60</b>

### **Area of Emphasis: Water Quality Management**

This program is designed to prepare you as a technician in the field of water and wastewater treatment. It also provides additional training and skills for those of you already employed in the field.

**Technical Core (see above) 19**

**General Education Requirements (see above) 25**

#### **Technical Electives**

*(choose 16 credits from the list below)*

WQM 100	Introduction to Water Quality	3
WQM 105	Calculations for Water Quality Management	4
WQM 119	Basic Water Quality Analysis	4
WQM 120	Water Quality Equipment Maintenance	4
WQM 200	Hydraulics for Water Quality Management	4
WQM 206	Design Interpretation of Water Quality System	4
WQM 210	Advanced Water Quality Analysis	4
WQM 216	Biological Water Quality Analysis	4
WQM 217	Disinfection Techniques	4
WQM 230	Industrial Monitoring and Treatment	3
	<b>Total Required Credits</b>	<b>60</b>

### **Area of Emphasis: Hazardous Materials Technology**

This certificate program teaches skills for technical involvement in the detection, remediation and management of hazardous materials. The program emphasizes hands-on skills, problem solving, and application oriented instruction.

**Technical Core (see above) 19**

**General Education Requirements (see above) 25**

#### **Technical Electives**

*(choose 16 credits from the list below)*

EST 107	Emergency Response/Hazardous Materials Ops	3
EST 120	Confined Space Entry	3
EST 127	Technical Heavy Rescue	3
EST 185	Radiation Protection	3
EST 235	Field Instrumentation	3
EST 241	Environmental Sampling	4
EST 254	Emergency Response Hazardous Materials Tech	6
EST 265	Environmental Auditing	3
EST 270	Risk Assessment	3
EST 290	Transportation of Hazardous Materials	3
	<b>Total Required Credits</b>	<b>60</b>

*The Environmental and Safety Technology program at Red Rocks Community College offers emphases in Environmental Technology, Hazardous Materials Technology, Occupational Safety and Water Quality Management. A new program that is awaiting approval is Field Engineering Technology.*

# Film/Video Technology

**Degrees: Associate of Applied Science  
Associate of General Studies**

## Certificates: Variable Credits

There are four key concentrations within the Film/Video Technology discipline including Film Production, Video Production, Video Post-Production and Writing, Directing and Producing for Film and Video. Required courses vary depending on the course of study you select and upon approval of your faculty advisor. You will gain a comprehensive understanding of the industry as well as practical training in film and video equipment and other technical elements.

## Associate of Applied Science Degree With an Emphasis in Film/Video Technology

### General Education Requirements

<i>English/Speech</i>	3
Recommend: ENG 121	
<i>Humanities, Science, Social and Behavioral Science</i>	6
Recommend: MUS 120, THE111, ART110 and/or PHI112	
<i>Mathematics</i>	3
Recommend: MAT 121	
General Education Elective from above	3
Recommend: SPE	15
<b>Total Required Credits</b>	<b>60</b>

## Associate of General Studies Degree With an Emphasis in Film/Video Technology

Articulated with Metropolitan State College of Denver: up to 66 semester hours will be accepted toward MSCD's bachelor's degree in Technical Communication.

### General Education Requirements

<i>English/Speech</i>	6
Recommend: ENG 121, SPE 115	
<i>Humanities</i>	3
Recommend: PHI 112, MUS 120, THE 111 or ART 110	
<i>Mathematics</i>	3
Recommend: MAT 121	
<i>Science</i>	3
<i>Social and Behavioral Science</i>	3
Recommend: SOC 101, POS 111 or POS 105	18
<b>Total Required Credits</b>	<b>60</b>

### Electives (For the Film/Video Technology AAS and AGS degrees)

FVT 105	Video Production I	3
FVT 150	Development of Film Expression	3
FVT 153	Introduction to 16mm Film Production	3
FVT 155	Scriptwriting for Film and Video	3
FVT 160	Video Post Production I	3
FVT 200	Video Production II	3
FVT 205	Film/Video Camera Equipment and Techniques	3
FVT 206	Lighting and Grip for Film and Video	3
FVT 208	Sound for Film and Video	3
FVT 209	Production Management Techniques	3
FVT 215	Video Editing and Post Production II	3
FVT 254	Introduction to Digital Editing	3
FVT 260	Screenwriting for Feature Films	3
FVT 265	Advanced Screenwriting for Feature Films	3
FVT 270	Film/Video Production III	3
FVT 280	Introduction to Avid Media Composer	3
FVT 290	Acting and Direction Workshop	3
FVT 297	Cooperative Education	3

## Film Production Certificate

FVT 105	Video Production	3
FVT 150	Development of Film Expression	3
FVT 153	Introduction to Film Production	3
FVT 155	Script Writing for Film and Video	3
FVT 160	Video Post Production I	3
FVT 205*	Film/Video Camera Equipment and Techniques	3
FVT 206	Film/Video Lighting and Grip	3
FVT 208*	Sound for Film and Video	3
FVT 220	16mm Production	3
FVT 270	Film/Video Production III	3
FVT 280	Introduction to AVID Media Composer	3
	<b>Total Required Credits</b>	<b>30</b>

\*Choose 205 or 208.

## Video Production Certificate

FVT 105	Video Production I	3
FVT 150	Development of Film Expression	3
FVT 155	Script Writing for Film and Video	3
FVT 160	Video Post Production I	3
FVT 200	Video Production II	3
FVT 205*	Film/Video Camera Equipment and Techniques	3
FVT 206	Film/Video Lighting and Grip	3
FVT 208*	Sound for Film and Video	3
FVT 215	Video Post Production II	3
FVT 270	Film/Video Production III	3
FVT 280	Introduction to AVID Media Composer	3
	<b>Total Required Credits</b>	<b>30</b>

\*Choose 205 or 208.

## Video Post-Production Certificate

FVT 105	Video Production	3
FVT 150	Development of Film Expression	3
FVT 160	Video Post Production I	3
FVT 200	Video Production II	3
FVT 206	Film/Video Lighting and Grip	3
FVT 208	Sound for Film and Video	3
FVT 215	Video Post Production II	3
FVT 254	Introduction to Digital Editing—Adobe Premiere	3
FVT 280	Introduction to AVID Media Composer	3
PDT 290	Special Topics: AfterEffects	3
	<b>Total Required Credits</b>	<b>30</b>

## Writing/Directing/Producing for Film and Video Certificate

FVT 105	Video Production	3
FVT 150	Development of Film Expression	3
FVT 153	Introduction to Film Production	3
FVT 155	Script Writing for Film and Video	3
FVT 160	Video Post Production I	3
FVT 200	Video Production II	3
FVT 206	Film/Video Lighting and Grip	3
FVT 209	Production Management Techniques	3
FVT 215	Video Post Production II	3
FVT 220	16mm Production	3
FVT 260	Screen Writing for Feature Films	3
FVT 265	Advanced Screen Writing for Feature Films	3
FVT 270	Film/Video Production III	3
FVT 280	Introduction to AVID Media Composer	3
FVT 290	Special Topics: Acting/Directing	3
	<b>Total Required Credits</b>	<b>45</b>



# Fine Woodworking

*(See Construction Technology)*

# Fire Science Technology

## Degree: Associate of Applied Science

Completion of this curriculum prepares you for:

- Entry into a career of fire suppression, prevention or related field.
- Promotion within a fire department or within the fire service.
- Advancement to a four-year college in pursuit of a Bachelor of Science degree in Fire Science Administration.

Emphasis is placed on modern methods of fire prevention and suppression, and management of the fire service. Public and private fire protection systems; life safety of fire service personnel and civilians; protection of property through the application of code enforcement; and the increasing problems of hazardous materials and arson are studied.

Prior to enrollment, if you are not presently a member of a fire department, you are required to take assessment tests which are administered in the Learning and Resource Center. The fire science instructor, upon consultation with assessment staff, evaluates test results in order to assist you with proper placement in your course of study in fire science. Advanced students are expected to substitute advanced courses for introductory courses.

### Required Major Courses

FST	102*	Introduction to Fire Science and Suppression	3
FST	103*	Firefighter Occupational Health and Safety	3
FST	104	Fire Protection Systems	3
FST	105*	Building Plans and Construction	3
FST	106*	Fire Inspection Practices ( <i>Fire Inspector I</i> )	3
FST	107	Hazardous Materials I/Awareness and Operations	3
FST	201	Instructional Methodology ( <i>Instructor I</i> )	3
FST	202	Firefighting Strategy and Tactics	3
FST	203*	Fire Science Hydraulics	3
FST	204	Codes and Ordinances	3
FST	205	Fire Cause Determination	3
FST	206	Fire Company Supervision/Leadership ( <i>Fire Off. II</i> )	3
PHE	100	Physical Education Aerobics I	1
PHE	150	Physical Education Aerobics II	1
PHE	200	Physical Education Aerobics III	1
			39

### General Education Requirements

CHE	101	Introduction to Chemistry I or Science elective	4-5
ENG	121	English Composition I	3
MAT	100	Introductory to Algebra ( <i>or higher</i> )	3
Humanities or Liberal Arts Course			3
Social and Behavioral Sciences Course			3
			3

16-17

### Elective Courses

EST	201	Chemistry of Hazardous Materials I	3
EMS	227	Emergency Medical Technician—B	10
EMS	237	Emergency Medical Technician—Paramedic	24
FST	100**	Fire Academy ( <i>Firefighter I</i> )	5
FST	101	Fire Academy ( <i>Firefighter II</i> )	3
FST	110	Job Placement and Assessment	3
FST	111	Private Fire Protection Systems	3
FST	112	Fire Service Planning	3
FST	113	Introduction to Fire Prevention Awareness	3
FST	114	Fire Company Organization Procedures	3
FST	115	Introduction to Industrial Fire Protection	3
FST	116	Industrial Fire Prevention	3
FST	120	Confined Space Safety and Rescue ( <i>OSHA Certification</i> )	3
FST	121	Rope Rescue Module I	1
FST	122	Rope Rescue Module II	1
FST	123	Rope Rescue Module III	1
FST	127	Technical Heavy Rescue	3-9
FST	150	Public Fire Prevention and Education ( <i>Public Fire Education</i> )	3
FST	151	Driver Operator ( <i>Operator I, II, III</i> )	3
FST	152	Wildland Firefighter ( <i>I, II</i> )	3
FST	207	Strategy and Tactics II	3
FST	208	Codes and Ordinances II	3
FST	250	Chemistry for Fire Protection	3
FST	251	Fire Service and the Law	3
FST	252	Fire Investigation ( <i>Fire Investigator</i> )	3
FST	253	Incident Command	3
FST	254	Hazardous Materials II ( <i>Technician Level</i> )	3
FST	255	Fire Service Management ( <i>Fire Officer II</i> )	3
FST	256	Fire Administration ( <i>Fire Officer III</i> )	3
FST	257	Volunteer Fire Department Administration	3
FST	258	Wildland Fire Incident Management and Organization 2	2
FST	259	Wildland Fire Strategy and Tactics	2
FST	260	Fire Related Collapse of Buildings ( <i>may substitute for FST 105 only</i> )	3
FST	261	Fire Operation in the Urban Interface	3
FST	264	Fire Hazard and Risk Analysis	3
FST	265	Fire Administration Risk Management	2
FST	290	Advanced Topics	1-3
FST	297**	Cooperative Education Academy	4
FST	297	Internship	1-6
FST	299	Independent Study and Analysis	1-3

\*\* Required if you are not currently employed in the Fire service or related field.

### Three-Part Program

FST	100	75 hours Fire Essentials Classroom Lectures	
FST	297	75 hours Fire Academy Drill Ground	
FST	297	72 hour internship with a local fire department	9

**Total Required Credits**

**66-69**

**Areas of Emphasis:  
Fire Science Technology**

Certificates of completion for the following areas of emphasis may be obtained by written application to the Director of Fire Science Technology.

**Code/Ordinance Certificate**

FST	105	Building Plans and Construction	3
FST	106	Fire Inspection Practices	3
FST	204	Codes and Ordinances	3
FST	260	Fire Related Collapse of Buildings	3
MAN	219	Public Relations Management	<u>3</u>
<b>Total Required Credits</b>			<b>15</b>

**Emergency Medical Service/Paramedic Certificate**

EMS	227	Emergency Medical Technician—B	8
EMS	237*	Emergency Medical Technician/Paramedic	<u>23</u>
<b>Total Required Credits</b>			<b>31</b>

\*EMS 237 is available through the St. Anthony's Hospital EMS Program. With completion of this course the student receives 23 credits toward an Associates Degree in Fire Science or for a Paramedic Technician Degree.

**Fire Investigations Certificate**

FST	205	Fire Cause Determination	3
FST	252	Arson Investigation	3
FST	299	Independent Study—Fire Analysis (Police and Fire Personnel only)	3
CRJ	240	Criminal Investigations	3
CRJ	245	Interviewing Techniques	<u>3</u>
<b>Total Required Credits</b>			<b>15</b>

**Fire Service Management Certificate**

FST	201	Instructional Methodology	3
FST	206	Fire Company Supervision and Leadership	3
FST	253	Incident Command	3
FST	260	Fire Related Collapse of Buildings	3
FST	299	Independent Study and Analysis	<u>3</u>
<b>Total Required Credits</b>			<b>15</b>

**Hazardous Materials Technician Certificate**

FST	107	Hazardous Materials Awareness/Operations Level	3
EST	201	Chemistry of Hazardous Materials I	3
FST	202	Firefighting Strategy and Tactics	3
FST	253	Incident Command	3
FST	254	Hazardous Materials Technician	<u>3</u>
<b>Total Required Credits</b>			<b>15</b>

**Officer Development Certificate**

FST	114	Fire Company Organization	3
FST	201	Instructional Methodology	3
FST	206	Fire Company Supervision and Leadership	3
FST	207	Strategy and Tactics II/ICS	3
FST	208	Advanced Codes (PUB ED)	3
FST	251	Fire Service Legal Considerations	3
FST	255	Fire Service Management	3
FST	256	Fire Administration	3
FST	265	Risk Analysis (Community and Firefighter Safety)	3
FST	299	Independent Study and Analysis	<u>3</u>
<b>Total Required Credits</b>			<b>30</b>

**Wildland Management Certificate**

FST	152	Wildland Firefighting	3
FST	253	Command of Major Incidents	3
FST	261	Wildland Fire Management and Organization	3
FST	262	Wildland Fire Strategy and Tactics	2
FST	263	Fire Operations in the Urban Interface	<u>2</u>
<b>Total Required Credits</b>			<b>13</b>

*Red Rocks has received a \$1.9 million "Program of Excellence" award for its Fire Science Technology Program from the Colorado Commission on High Education. Plans to accomodate Red Rocks' incredible growth in this program, include a future renovation and construction project on its current Fire Science facility.*

# Foreign Languages

## Associate of Arts Degree With an Emphasis in Foreign Languages

The completion of the following courses is appropriate for those of you who plan to transfer to a four-year college or university to complete a major in a foreign language. If you do not plan to major in a foreign language, knowledge of a second language may significantly improve chances of professional advancement in careers such as business, computer technology, medicine, engineering and in the natural and behavioral sciences.

You are urged to consult with a faculty advisor before beginning any program of study.

<b>Recommended Courses</b>			<b>Credits</b>
ENG	121	English Composition I (Core)	3
ENG	122	English Composition II (Core)	3
SPE	115	Principles of Speech Communication (Core)	3

**Choose one (FRENch, GERman, SPANish)**

FRE/GER/SPA	111	Foreign Language I (Core)	5
FRE/GER/SPA	112	Foreign Language II (Core)	5
FRE/GER/SPA	211	Foreign Language III (Core)	3
FRE/GER/SPA	212	Foreign Language IV (Core)	3

### Core Curriculum Requirements

*Humanities* (any course from the following) 3  
 ART 111, 112; HUM 121, 122, 123; LIT 115, 201, 202;  
 MUS 120, 121, 122; PHI 111, 112, 113; THE 211, 212

*Mathematics* (any course from the following) 4  
 MAT 121, 125, 135, 201, 202

*Science* (any course from the following) 4  
 AST 101, 102; BIO 105, 111, 112; CHE 101, 102, 111, 112;  
 GEY 111, 121; PHY 105, 111, 112, 211, 212

*Social and Behavioral Sciences* (courses from two different disciplines) ANT 101, 111; ECO 201, 202; GEO 105; HIS 101, 102, 201, 202; POS 105, 111; PSY 101, 102; SOC 101, 102 9

**Electives** \_\_\_\_\_ **16**  
 Electives must be selected from college-level transfer courses.  
 No more than three credits in physical education may be counted.

**Total Required Credits** 60

\* If your emphasis is in Spanish, you are encouraged to complete HUM 126 and HIS 271.

# Geology

## Associate of Science Degree With an Emphasis in Geology

The completion of the following courses is appropriate for those of you who plan to transfer to a four-year college or university to complete a major in geology.

You are urged to consult with a faculty advisor before beginning any program of study.

<b>Recommended Courses</b>			<b>Credits</b>
BIO	112	General College Biology II (Core)	5
CHE	111	General College Chemistry I (Core)	5
GEY	111	Physical Geology (Core)	4
GEY	121	Historical Geology (Core)	4
GEY	XXX	Other GEY courses	6
MAT	121	College Algebra (Core)	4
MAT	122	College Trigonometry	3

### Core Curriculum Requirements

*English/Speech*

ENG	121	English Composition I	3
ENG	122	English Composition II	3
SPE	115	Principles of Speech Communication	3

*Humanities* (any two courses from the following) 6  
 ART 111, 112; Foreign Language 111, 112, 211, 212;  
 HUM 121, 122, 123; LIT 115, 201, 202; MUS 120, 121, 122;  
 PHI 111, 112, 113; THE 211, 212

*Social and Behavioral Sciences* (courses from two different disciplines) ANT 101, 111; ECO 201, 202; GEO 105; HIS 101, 102, 201, 202; POS 105, 111; PSY 101, 102; SOC 101, 102 6

**Electives** 8  
 Electives must be selected from college-level transfer courses.  
 No more than three credits in physical education may be counted.

**Total Required Credits** 60

# Graphics and Animation Technology

*(See Multimedia Technology Cluster)*

# Health Careers Continuing Education

## Certificates: Variable Credits

Continuing Education is offered, as indicated by community needs, to augment knowledge and skills of nurses and other health care professionals.

			Credits				
CEN	104	The Healing Mind	1/2	CEN	250	Home Health Nursing Skills Part I	1/2
CEN	106	Case Management	1/2	CEN	251	Music as a Therapy for Wellness	1
CEN	107	Camp Health Care	1/2	CEN	252	Menopause: Traditional/Natural Approaches	1/2-1
CEN	110	Neurolinguistic Programming I	1/2	CEN	254	Holistic Nursing-Level II	2
CEN	201	Ethics in Health Care	1/2	CEN	255	Spanish for Health Care Level II	1
CEN	202	Aromatherapy	1/2	CEN	256	Holistic Nursing Level III	2
CEN	203	Women's Holistic Health Care	1/2	CEN	257	ACLS ( <i>Advanced Cardiac Life Support</i> )	2
CEN	205	Herbology	1/2	CEN	258	Journaling the Spiritual Journey	1
CEN	208	Basic EKG Interpretation	1	CEN	259	ACLS Recertification	
CEN	209	Spanish for Health Care Level I	1			( <i>Advanced Cardiac Life Support</i> )	1/2
CEN	210	Physical Assessment of the Adult	2-3	CEN	260	Bereavement Counseling	1/2
CEN	212	Neurolinguistic Programming II	1/2	CEN	262	Advanced Therapeutic Touch	1
CEN	213	Spiritual Role in Health Care	1/2	CEN	263	Self-Esteem and the Child	1
CEN	216	Humor Therapy	1/2	CEN	264	Documentation in Home Health	1/2-1
CEN	217	Phlebotomy Refresher	1	CEN	265	Personal Power: Gift of Self-Esteem	1
CEN	218	Better Charting and Legal Documentation	1/2-1	CEN	266	Physical Assessment for Home Health	1
CEN	219	Family Violence	1/2	CEN	267	Living Without Limits	1/2
CEN	220	Law Every Nurse Should Know	1/2-2	CEN	269	Healing Presence	1/2
CEN	221	High Level Wellness	1	CEN	271	AIDS Update	1/2
CEN	224	Massage Therapy	1	CEN	274	Quality Assurance in Home Health	1/2
CEN	225	Introduction to Home Health Nursing	1/2-1	CEN	276	Creating Healthy Relationships	1
CEN	226	Intravenous Therapy	1	CEN	278	Hospice Nursing	1/2
CEN	227	Communication Skills	1/2-1	CEN	281	Home Health Nursing Skills Part II	1/2
CEN	228	Solution Focused Counseling	1/2	CEN	282	Legal Issues in Home Health Care	1/2
CEN	229	Wellness Counseling	1	CEN	283	Psychoneuroimmunology	1/2
CEN	230	Trauma Assessment and Intervention	1	CEN	285	Stress Management	1/2-1
CEN	232	Caring for the Caregiver	1/2	CEN	287	Nurse Entrepreneur	1/2
CEN	235	Nutritional Therapy and Health	1/2	CEN	289	Career Alternatives Within Nursing	1/2
CEN	236	Dance Therapy and Healing	1/2				
CEN	238	Advanced EKG Interpretation	1/2				
CEN	239	Intravenous (IV) Certification	4/2				
CEN	241	Healing Imagery: Body, Mind and Spirit	1/2				
CEN	242	Therapeutic Touch	1				
CEN	243	Teaching in Community/Home Health Nursing	1/2				
CEN	244	Holistic Nursing Level I	1				
CEN	249	Journaling	1				

### Continuing Education Refresher Nursing Certificate: 12 Credits

CER	200	Registered Nurse Refresher Course	8-12
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# History

## Associate of Arts Degree With an Emphasis in History

The completion of the following courses is appropriate for those of you who plan to transfer to a four-year college or university to complete a major in history. This program provides preparation for you if you are interested in teaching, government service, law, research, business and industry, journalism, publishing, historical societies, museums, archives and library science.

You are urged to consult with a faculty advisor before beginning any program of study.

<b>Recommended Courses</b>			<b>Credits</b>
ANT	101	Cultural Anthropology <i>(Core)</i>	3
ECO	201	Principles of Macroeconomics <i>(Core)</i>	3
ECO	202	Principles of Microeconomics <i>(Core)</i>	3
GEO	105	World Regional Geography <i>(Core)</i>	3
HIS	101	Western Civilization I <i>(Core)</i>	3
HIS	102	Western Civilization II <i>(Core)</i>	3
HIS	201	U.S. History I <i>(Core)</i>	3
HIS	202	U.S. History II <i>(Core)</i>	3
POS	111	American Government <i>(Core)</i>	3
SOC	101	Introduction to Sociology I <i>(Core)</i>	3
SOC	102	Introduction to Sociology II <i>(Core)</i>	3

### Core Curriculum Requirements

#### English/Speech

ENG	121	English Composition I	3
ENG	122	English Composition II	3
SPE	115	Principles of Speech Communication	3

#### Humanities (courses from two different disciplines)

ART 111, 112; Foreign Language 111, 112, 211, 212; HUM 121, 122, 123; LIT 115, 201, 202; MUS 120, 121, 122; PHI 111, 112, 113; THE 211, 212

#### Mathematics (any course from the following)

MAT 121, 125, 135, 201, 202

#### Science (any course from the following)

AST 101, 102; BIO 105, 111, 112; CHE 101, 102, 111, 112; GEY 111, 121; PHY 105, 111, 112, 211, 212

#### Electives \_\_\_\_\_ 3

Electives must be selected from college-level transfer courses. No more than three credits in physical education may be counted.

**Total Required Credits 61**

# Humanities

## Associate of Arts Degree With an Emphasis in Humanities

Humanities is the study of literature, philosophy, art, music and theatre. It provides an excellent background for professions such as teaching, writing, community service, law and research.

You are urged to consult with a faculty advisor before beginning any program of study.

<b>Recommended Courses</b>			<b>Credits</b>
ART	111	Art History I <i>(Core)</i>	3
<b>or</b>			
ART	112	Art History II <i>(Core)</i>	
HUM	121	Survey of Humanities I <i>(Core)</i>	3
HUM	122	Survey of Humanities II <i>(Core)</i>	3
HUM	123	Survey of Humanities III <i>(Core)</i>	3
HUM	215	Ideas in a Changing Society	3
LIT	115	Introduction to Literature <i>(Core)</i>	3
MUS	120	Music Appreciation <i>(Core)</i>	3
PHI	111	Introduction to Philosophy <i>(Core)</i>	3
THE	211	Development of Theatre I <i>(Core)</i>	3
<b>or</b>			
THE	212	Development of Theatre II <i>(Core)</i>	

### Core Curriculum Requirements

#### English/Speech

ENG	121	English Composition I	3
ENG	122	English Composition II	3
SPE	115	Principles of Speech Communication	3

#### Mathematics (any course from the following)

MAT 121, 125, 135, 201, 202

#### Science (any course from the following)

AST 101, 102; BIO 105, 111, 112; CHE 101, 102, 111, 112; GEY 111, 121; PHY 105, 111, 112, 211, 212

#### Social and Behavioral Sciences (courses from two different disciplines)

ANT 101, 111; ECO 201, 202; GEO 105; HIS 101, 102, 201, 202; POS 105, 111; PSY 101, 102; SOC 101, 102

#### Electives \_\_\_\_\_ 8

Electives must be selected from college-level transfer courses. No more than three credits in physical education may be counted.

**Total Required Credits 60**

# Mathematics

## Associate of Science Degree With an Emphasis in Mathematics

The completion of the following courses is appropriate for those of you who plan to transfer to a four-year college or university to complete a major in mathematics. This program provides basic preparation leading to science-related careers as well as to teaching mathematics.

You should consult with a Mathematics faculty advisor before beginning any program of study.

### Suggested Sequence

This is a suggested sequence if you are a full-time student completing this degree program. If you are a part-time student it will take you longer to complete the sequence. Some courses might not be offered each session.

First Session (Fall)	Credits
ENG 121 English Composition I (Core)	3
MAT 201 Calculus I (Core)	5
Humanities Core Elective	3
Social/Behavioral Science Core Elective	3
	<hr/> 14

Second Session (Spring)	Credits
ENG 122 English Composition II (Core)	3
MAT 202 Calculus II (Core)	5
Humanities Core Elective	3
Social/Behavioral Science Core Elective	3
	<hr/> 14

Third Session (Fall)	Credits
SPE 115 Principles of Speech Communication (Core)	3
MAT 203 Calculus III	4
Computer Science Elective	4
Science Core Elective	5
	<hr/> 16

Fourth Session (Spring)	Credits
MAT 255 and/or MAT 265	3-6
Science Core Elective	5
Transferable Electives	8-3
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### Electives

Transferable Electives must be selected from college-level transfer courses. No more than three credits in physical education will count towards the degree.

**Total Required Credits 60-63**

If you are planning to major in mathematics at a four-year college or university, you will find MAT 201 Calculus I is the first (lowest level) mathematics course in which the credits earned will count toward a B.A. or a B.S. degree. If you are a student just entering and are not prepared to take MAT 201, you will need to take the pre-requisite course(s) (Do not expect the credits earned in the pre-requisite course(s) to count toward a B.A. or a B.S. degree.)

# Medical Assisting

## Degree: Associate of Science Certificate: 49 Credits

The Medical Assisting program is designed to prepare you, upon successful completion, for a career as an allied health professional, assisting physicians in ambulatory care settings. This program prepares you to be multi-skilled by including a full range of administrative and clinical medical assisting skills. You are required to complete a clinical internship at the end of the academic portion in order to receive a certificate or degree.

### Associate of Applied Science

To earn an Associate of Applied Science degree in Medical Assisting you must complete all the courses in the certificate program as well as 15 credits of general education courses listed below.

General Education Requirements	Credits
English/Speech (SPE 115, ENG 121)	3
Mathematics (MAT 100 or above)	3

Credit from any two of the following three areas:

*Social and Behavioral Science* (ANT, ECO, GEO, HIS, POS, PSY, SOC)

*Science* (AST, BIO, CHE, GEY, PHY)

*Humanities* (ART, FRE, GER, HUM, LIT, PHI, SPA, MUS, THE)

Required Certificate Courses	49
<b>Total Required Credits</b>	<b>64</b>
<b>Total Required Contact Hours</b>	<b>1215</b>

## Certificate

### Required Major Courses

First Session (Fall)	Credits
HEO 100 Medical Terminology	3
HEO 104 Anatomy & Physiology for Health Occupations	4

#### First Seven Weeks

*BTE 140 Medical Office I	4
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#### Second Seven Weeks

BTE 102 Keyboarding Applications*	4
*BTE 140 Medical Office II	

#### Second Session (Spring)

HEO 220 Pharmacology for Health Occupations	3
CIS 118 Microcomputer Applications	5

#### First Seven Weeks

*HEO 230 Clinical Skills for Medical Office	3
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#### Second Seven Weeks

*HEO 240 Lab Skills for Medical Office	3
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#### Third Session (Summer)

HEO 297 Medical Assisting Internship	6
*BTE 206 Coding/Health Insurance Methods and Claims	4
*BTE 115 Data Entry I	4

**Total Required Credits 49**  
**Total Required Contact Hours 990**

\*These courses are only offered during the session shown above

# Multimedia Technology Cluster

**Degree: Associate of Applied Science**  
**Degree: Associate of General Studies\***  
**Certificates: 29 Credits**

with Areas of Emphasis and Options in:

## Graphics and Animation (GAT)

The Graphics and Animation emphasis within the Multimedia Technology Department prepares you for work in the traditional graphic design and printing industries. You learn how to use the computer for electronic production and basic design techniques. In addition to printed graphics, graphic images for multimedia presentation, animation and 3-D graphics are explored.

Degree	Certificate
• Graphics and Animation	• Graphics and Animation

## Production and Design (PDT)

The Production and Design emphasis within the Multimedia Technology Department prepares you for work in the exciting world of CD-ROM production. You learn to create projects such as interactive games, informational kiosks, educational training projects as well as many of the other exciting uses for CD-ROM and multimedia development.

Degree	Certificate
• Production and Design	• Production and Design

### General Education Requirements for Multimedia Technology Degree Programs:

#### Associate of Applied Sciences

Designed for students who desire quick entry into the workforce

##### General Education Requirements

<i>English/Speech</i> (ENG 121 recommended)	3
<i>Mathematics</i> (MAT 121 recommended)	3
<i>Art, Humanities, Science, Social Science</i> (MUS 120, THE 111, ART 110 and/or PHI 112 recommended)	6
<i>Elective from above</i> (SPE 115 recommended)	3
<b>Total Required Credits</b>	<b>15</b>

Approximately 12 Additional Courses to total **60**  
 Could include Co-op or Intern Experience

#### Associate of General Studies\*

Designed for students who desire both work and transfer options

##### General Education Requirements

<i>English/Speech</i> (ENG 121, SPE 115 recommended)	6
<i>Mathematics</i> (MAT 121 recommended)	3
<i>Social Science</i> (SOC 101, POS 111 or POS 105 recommended)	3
<i>Humanities</i> (PHI 112, MUS 120, THE 111 or ART 110 recommended)	3
<i>Science</i>	3
<b>Total Required Credits</b>	<b>18</b>

Approximately 11 Additional Courses to total **60**  
 Could include Co-op or Intern Experience

### Multimedia Technology Core—Required for all Degree Candidates

Test-outs and Articulation Possible

Course Number and Description	Credits	Course Number and Description	Credits
CIS 113 Introduction to Macintosh Computers	2	MTC 201 Multimedia Production and Management <i>(Should be taken during last semester of program)</i>	3
MTC 100 Multimedia Equipment and Technology	*3	<b>Total Required Credits</b>	<b>11</b>
MTC 101 Introduction to Design and Graphics	*3		

\*Requires 60 hours of lecture/lab

\*Articulated with Metropolitan State College of Denver: up to 66 semester hours of the Associate of General Studies Degree will be accepted toward MSCD's bachelor's degree in Technical Communication.

## Graphics and Animation Technology (GAT)

### Multimedia AAS and AGS+ Degree with Graphics and Animation Emphasis

#### Credits

<b>General Education Requirements</b>	15-18
Multimedia Technology Core	11
<b>Total Required Credits</b>	26-29

<b>Required Major Courses</b>	<b>Credits</b>
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GAT	106	Adobe Illustrator	3
GAT	115	Color Theory	3
GAT	120	Adobe Photoshop I	3
GAT	125	QuarkXPress	3
GAT	127	Electronic Prepress	3
PDT	150	Introduction to Multimedia Authoring	3
PDT	205	Computer Art Studio	3
GAT	201	Animation and Rendering	3
GAT	220	Adobe Photoshop II	3
GAT	290	Special Topics	3
GAT	297	Cooperative Education	3 or more
One applied creative course			3

#### Electives

One course from other areas of emphasis. With advisor permission, you may substitute two courses from other Multimedia options (Film/Video and/or Production and Design).

<b>Total Required Credits</b>	<b>62-65</b>
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*\*Articulated with Metropolitan State College of Denver: up to 66 semester hours of the Associate of General Studies Degree will be accepted toward MSCD's bachelor's degree in Technical Communication.*

## Graphics and Animation Technology Certificate

CIS	113	Introduction to Macintosh Computer	2
MTC	101	Introduction to Design and Graphics	3
GAT	106	Adobe Illustrator	3
GAT	115	Color Theory	3
GAT	120	Adobe Photoshop I	3
GAT	125	QuarkXPress	3
GAT	127	Electronic Prepress	3
GAT	201	Animation and Rendering	3
GAT	220	Adobe Photoshop II	3
Plus one elective selected from GAT, PDT, MTC or FVT			3
<b>Total Required Credits</b>			<b>29</b>

## Production and Design Technology (PDT)

### Multimedia AAS and AGS+ Degree with Production and Design Technology Emphasis

#### Credits

<b>General Education Requirements</b>	15-18
Multimedia Technology Core	11
<b>Total Required Credits</b>	26-29

<b>Required Major Courses</b>	<b>Credits</b>
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GAT	115	Color Theory	3
GAT	120	Adobe Photoshop	3
GAT	125	QuarkXPress	3
PDT	150	Introduction to Multimedia Authoring	3
PDT	205	Computer Art Studio	3
PTD	210	Sound Design for Multimedia	3
PTD	220	Multimedia Development	3
ART	151	Photography I	3
FVT	254	Introduction to Digital Editing	3
PDT	290	Special Topics	3
PDT	297	Cooperative Education	3 or more
One applied creative course			3

#### Electives

One course from other areas of emphasis. With advisor permission, you may substitute two courses from other Multimedia options (Film/Video and/or Graphics and Animation).

<b>Total Required Credits</b>	<b>62-65</b>
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## Production and Design Technology Certificate

CIS	113	Introduction to Macintosh Computer	2
MTC	100	Multimedia Equipment and Technology	3
GAT	106	Adobe Illustrator	3
GAT	120	Adobe Photoshop I	3
PDT	210	Sound Design for Multimedia	3
PDT	220	Multimedia Development	3
FVT	254	Introduction to Digital Editing	3
PDT	290	Adobe After Effects	3
MTC	201	Multimedia Production and Management	3
Plus one elective selected from GAT, PDT, MTC or FVT			3
<b>Total Required Credits</b>			<b>29</b>



# Nurse Aide/Home Health Aide

## Certificate: 5 Credits

### Required Courses

NUR	108	Nurse Aide/Home Health Aide	Credits	5
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## Nursing (Preparatory)

If you are interested in nursing, you may take courses which will transfer. Admission and course requirements vary among nursing programs; therefore, you are encouraged to work closely with an advisor in the college or university offering the program.

The following courses are suggested				Credits
ANT	101	Cultural Anthropology		3
BIO	201	Human Anatomy and Physiology I		4
BIO	203	Human Anatomy and Physiology II		4
CHE	101	Introduction to Chemistry I		5
CHE	102	Introduction to Chemistry II		5
ENG	121	English Composition I		3
ENG	122	English Composition II		3
MAT	135	Introduction to Statistics		3
NUR	108	Nurse Aide/Home Health Aide		5
NUR	200	Basic Nutrition		3
PSY	101	General Psychology I		3
PSY	235	Human Growth and Development		3
SOC	101	Introduction to Sociology I		3

### Electives

Electives must be selected from art, foreign languages, history, humanities, philosophy, political science, medical terminology, and ethics in health care.

**Note:** Completion of course work at Red Rocks does not guarantee acceptance into a nursing program.

# Occupational Safety Technology

*(In cooperation with Trinidad State Junior College)*

## Degree: Associate of Applied Science Certificate: 30 Credits

The Occupational Safety Technology program is designed to provide occupational safety training to both pre-service students and in-service professionals. As a comprehensive industry-oriented program, this curriculum is established to provide knowledge and training skills in safety applications as they relate to the industrial field.

**Note:** Occupational Safety students cannot register through the Red Rocks phone registration system. You must meet and register directly with the Occupational Safety Department Coordinator.

### Required Major Courses

Required Major Courses			Credits
<b>First Session (Fall)</b>			
OSH	110	Fire Protection	2
OSH	130	Construction Standards	5
ENG	121	English Composition I	3
CIS	115	Introduction to Computers <i>(Required Lab)</i>	5
<b>or</b>			
CIS	118	Microcomputer Applications <i>(Required Lab)</i>	5
OSH	202	Accident Prevention	<u>2</u>
			17
<b>Second Session (Spring)</b>			
OSH	111	Fire Analysis	2
OSH	131	General Industry Standards	5
OSH	196	Safety Program Planning and Administration	3
HEO	104	Anatomy for Health Occupations	4
SPE	115	Principles of Speech Communication	<u>3</u>
			17
<b>Third Session (Fall)</b>			
OSH	200	Hazardous Material Control	2
OSH	201	Worker's Compensation Cost Containment	2
OSH	203	Ergonomics: Managing Task Stress	3
MAT	102	General Mathematics for College Students	1-5
PHY	105	Conceptual Physics	<u>4</u>
			14
<b>Fourth Session (Spring)</b>			
OSH	230	First Aid	2
OSH	240	Case Study Evaluation	5
OSH	207	Industrial Hygiene	3
OSH	250	Safety Training Methods	2
OSH	261	Independent Study	<u>2</u>
			14
<b>Total Required Credits</b>			<b>63</b>

A minimum of two credits of elective courses will be chosen from the following on the recommendation of the advisor.

CHE	101	Introduction Chemistry I	5
EST	102	Environmental Regulatory Framework	3
EST	104	Health and Safety Applications (HAZWOPER)	3
EST	111	Chemistry of Hazardous Materials I	3
EST	203	RCRA Compliance	3
EST	215	Field Sampling and Lab Analysis	3
EST	225	Air Toxics and Pollution Control	3
EST	230	Hazmat Response and Emergency Planning	3
EST	235	Hazmat Transportation	3
OSH	255	Instrument Laboratory	2
OSH	264	Process Safety Management	2
OSH	270	Environmental and Safety Auditing	3
OSH	275	Mine Safety and Health Standards	2
OSH	290	Occupational Safety Internship	5-18
WQM	100	Introduction to Water Quality Management	3

## Occupational Safety Technology Certificate

The Occupational Safety Technology Certificate program is designed to provide you with knowledge and training skills in industrial safety applications. It is recommended that you obtain an Occupational Safety Certificate have five or more years of working experience in the safety field.

<b>Required Major Courses</b>			<b>Credits</b>
OSH	130	Construction Standards	5
OSH	131	General Industry Standards	5
OSH	196	Safety Program Planning	5
OSH	200	Hazardous Material Control	2
OSH	202	Accident Prevention	2
OSH	240	Case Study Evaluation	5
OSH	250	Safety Training Methods and Administration	5
FST/			
OSH	XXX	Choose from OSH 110, 111 or FST classes chosen in conjunction with your advisor.	3
OSH	XXX	Elective chosen from degree program electives.	3
		<b>Total Required Credits</b>	<b>30</b>

# Paramedic Technician

## Degree: Associate of Applied Science

Completion of this curriculum will allow individuals to enter a career in Paramedic Technology. As a paramedic, career opportunities are available in public and private pre-hospital emergency care such as fire and ambulance services and management of the same.

<b>Required Major Courses</b>			<b>Credits</b>
BIO	201	Human Anatomy and Physiology I	4
BIO	203	Human Anatomy and Physiology II	4
CHE	101	Introduction to Chemistry I	5
EMS	227	Emergency Medical Technician—Basic	8
HEO	210	Pathophysiology for Health Occupations	4
HEO	220	Pharmacology for Health Occupations	3
			<u>28</u>

### General Education Requirements

ENG	131*	Technical Writing	3
PSY	101	General Psychology I	3
MAT	100	Introductory Algebra ( <i>or higher level course</i> )	3
SOC	101	Introduction to Sociology I	3
SPE	125	Interpersonal Communication	3
			<u>15</u>

Electives (two courses selected from the following): **6**

ANT	101	Cultural Anthropology	
ENG	121	English Composition I	
MAN	116	Principles of Supervision	
MAN	226	Principles of Management	
SOC	215	Contemporary Social Problems	

*The following course will be taken at St. Anthony Hospital Central:*

EMS	237**	Paramedic Technician	<u>24</u>
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**Total Required Credits** **73**

*\* Requires satisfactory score on placement test.*

*\*\* One year active field experience as an EMT with a first responding agency is required.*

# Park Ranger Technology

**Degree: Associate of Applied Science**

**Certificate: Variable Credits**

The Park Ranger Training Program provides training for those of you seeking careers in natural resource protection, interpretation and management. Law Enforcement, natural resource interpretation, public safety services and outdoor recreation/education are the major areas of concentration reflecting the needs of the industry and potential employment in all levels of government as well as private companies.

The Associate of Applied Science Degree and the certificate programs are designed around the hiring agencies requirements and also to allow the student to design a program around specific interests, career goals and previous training or education.

<b>Required Major Courses</b>			<b>Credits</b>
BIO	111	General College Biology I	5
BIO	112	General College Biology II	5
FST	152	Basic Wildland Firefighting	3
FST	253	Incident Command of Major Incidents	3
HIS	201	U.S. History I	3
HIS	202	U.S. History II	3
PAR	102	Introduction to Park Ranger Technology	3
PAR	105	National Resource Interpretation	3
PAR	297	Park Ranger Internship	3
			3
			31

## General Education Requirements

### English/Speech

ENG	121	English Composition I	3
SPE	115	Principles of Speech Communication	3
or			
SPE	125	Interpersonal Communication	3

### Mathematics

MAT	121	College Algebra	4
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### Science

GEY	111	Physical Geology	4
or			
ENV	101	Introduction to Environmental Science	4

### Social and Behavioral Sciences

PSY	101	General Psychology I	3
			3
			16

## Electives

**10-12**

### Fire/Public Safety Electives

EMS	227	Emergency Medical Technician (Basic)	8
FST	121	Rope Rescue Module I	1
FST	122	Rope Rescue Module II	1
FST	123	Rope Rescue Module III	1
FST	258	Wildland Fire Incident Management and Organization	3
FST	261	Fire Operations in Urban Interface	3
PAR	227	Wilderness First Aid	3

### Interpretation Electives

BIO	199	Plants of the Front Range	3
BIO	227	Ecology	4
BIO	228	Field Biology	2
ENV	101	Introduction to Environmental Science	4
GEY	135	Environmental Geology	3
GEY	203	Map and Airphoto Interpretation	3
GEY	205	Geology of Colorado	
GEY	208	Geology Field Trip	2-3
HIS	116	The Native American Experience	3
HIS	225	History of Colorado	3
PAR	203	Natural Resource Management	3
PAR	255	Advanced Resource Interpretation	3

### Law Enforcement Electives

CRJ	XXX	Post Law Enforcement Academy	24
PAR	230	Park Ranger Law Enforcement	3

### Outdoor Skills Electives

PHE	170	Cross Country Skiing	2
PHE	180	Mountaineering I	3
PHE	181	Basic Rock Climbing	2
PHE	182	Intermediate Rock Climbing	2
PHE	183	Basic Ice Climbing	2
PHE	185	Snow and Glacier Climbing	3
PHE	186	Orienteering	2
PHE	187	Map and Compass for the Outdoors	3
PHE	188	Backpacking	2
PHE	190	Snowshoeing	1
PHE	218	Outdoor Recreation and Camping	2
PHE	225	Routefinding	1
PHE	226	Wilderness Ethics	2
PHE	227	Basic Mountaineering II	3
PHE	228	Wilderness Ethics	2
PHE	229	Wilderness Survival I	3
PHE	259	Wilderness Survival II	3

## Park Ranger Certificate: Law Enforcement Concentration

The Law Enforcement Certificate is for those students wishing to increase their job opportunities by being qualified for full law enforcement responsibilities in the field.

### Credits

CRJ	XXX	Post Law Enforcement Academy	24
PAR	102	Introduction to Public Lands/Park Ranger Services	3
PAR	230	Park Ranger Law Enforcement	3
PAR	297	Park Ranger Internship	3
<b>Total Required Credits</b>			<b>33</b>

## Park Ranger Certificate: Outdoor Recreation Concentration

The Outdoor Recreation Certificate provides a wide choice for those wishing to become employed as guides, outdoor instructors, safety personnel or rangers with both governmental and private agencies.

### Credits

PAR	105	Introduction to Park Ranger Technology	3
PAR	205	Resource Interpretation	3
PAR	227	Park Ranger Internship	3
<b>Credit from the following areas:</b>			<b>21</b>
PHE	170	Cross Country Skiing	2
PHE	180	Mountaineering I	3
PHE	181	Basic Rock Climbing	2
PHE	182	Intermediate Rock Climbing	2
PHE	183	Basic Ice Climbing	2
PHE	185	Snow and Glacier Climbing	3
PHE	186	Orienteering	2
PHE	187	Map and Compass for the Outdoors	3
PHE	188	Backpacking	2
PHE	190	Snowshoeing	1
PHE	218	Outdoor Recreation and Camping	2
PHE	220	Wilderness Equipment and Facilities	3
PHE	225	Routefinding	1
PHE	227	Basic Mountaineering II	3
PHE	228	Wilderness Ethics	2
PHE	229	Wilderness Survival I	3
PHE	259	Wilderness Survival II	3
<b>Total Required Credits</b>			<b>30</b>

## Park Ranger Certificate: Public Safety Concentration

The Public Safety Certificate provides necessary training for those students wanting to work for agencies providing fire, EMS, rescue, hazardous materials or other response/mitigation services.

### Credits

PAR	102	Introduction to Park Ranger Technology	3
PAR	227	Park Ranger Internship	3
EMS	227	Emergency Medical Technician (Basic)	8
FST	121	Rope Rescue Module I	1
FST	122	Rope Rescue Module II	1
FST	123	Rope Rescue Module III	1
FST	151	Hazardous Mat. Awareness and Opns.	3
FST	152	Intro to Wildland Firefighting	3
FST	236	Fire Operations in the Urban Interface	1
FST	253	Incident Command at Major Incidents	3
FST	258	Wildland Fire Incident Mgmt and Org.	3
PHE	229	Wilderness Survival I	3
<b>Total Required Credits</b>			<b>31</b>

## Park Ranger Certificate: Resource Interpretation Concentration

The Resource Interpretation Certificate is for those working with resource interpretation, naturalist or other nature center work with the public.

### Credits

BIO	111	General College Biology I	5
BIO	112	General College Biology II	5
BIO	228	Field Biology	2
GEY	111	Physical Geology	4
HIS	201	U.S. History I	3
HIS	202	U.S. History II	3
PAR	102	Introduction to Park Ranger Technology	3
PAR	203	Natural Resource Management	3
PAR	205	Resource Interpretation	3
PAR	227	Park Ranger Internship	3
PAR	255	Advanced Resource Interpretation	3
<b>Total Required Credits</b>			<b>34</b>

## Philosophy

# Philosophy

## Degree: Associate of Arts With an Emphasis in Philosophy

Philosophy is the study of basic concepts with which we construct meaning in life. It examines reasoning processes, ways of knowing, concepts of right and wrong, interpretations of reality and views of the self. The following sequence of courses provides a broad introduction to the field and prepares you for further education.

You are encouraged to consult with a Red Rocks Philosophy faculty advisor before beginning any program of study.

### Associate of Arts

#### Suggested Sequence for Full-time Students

This is a suggested sequence for completing the degree. If you are a part-time student, it will take you longer to complete the sequence. Some courses might not be offered each session.

First Session			Credits
PHI 111	Introduction to Philosophy		3
ENG 121	English Composition I		3
SPE 115	Principles of Speech Communication		3
SOC 101	Introduction to Sociology I		3
PSY 101	General Psychology I		3
			<hr/> 15
Second Session			
PHI 113	Logic		3
SPE 230	Argumentation and Debate		3
HIS 101	Western Civilization I		3
ENG 122	English Composition II		3
MAT XXX	Mathematics Core Course		3-5
			<hr/> 15-17
Third Session			
HIS 102	Western Civilization II		3
PHI 112	Ethics		3
PHI 115	Comparative Religion		3
ANT 101	Cultural Anthropology		3
	Science Core Course		4-5
			<hr/> 16-17
Fourth Session			
POS 105	Introduction to Political Science		3
	Humanities Core Course ( <i>except Philosophy</i> )		3
	Transferrable Electives		8
			<hr/> 14

#### Electives

Electives must be selected from college-level transfer courses. No more than three semester credits in physical education may be counted.

Total Required Credits (minimum) 60

# Physics

## Degree: Associate of Science With an Emphasis in Physics

The completion of the following courses is appropriate for you if you plan to transfer to a four-year college or university to complete a major in physics.

You are urged to consult with a faculty advisor before beginning any program of study.

#### Recommended Courses

			Credits
CHE 111	General College Chemistry I ( <i>Core</i> )		5
CHE 112	General College Chemistry II ( <i>Core</i> )		5
CSC 160	Computer Science I ( <i>Required Lab</i> )		5
	or		
CIS 148	FORTTRAN Programming ( <i>Required Lab</i> )		4
MAT 201	Calculus I ( <i>Core</i> )		5
MAT 202	Calculus II ( <i>Core</i> )		5
MAT 203	Calculus III		4
PHY 211	Physics: Calculus-based I ( <i>Core</i> )		5
PHY 212	Physics: Calculus-based II ( <i>Core</i> )		5

#### Core Curriculum Requirements

##### English/Speech

ENG 121	English Composition I	3
ENG 122	English Composition II	3
SPE 115	Principles of Speech Communication	3

\**Humanities* (any two courses from the following) 6-10

ART 111, 112; Foreign Language 111, 112, 211, 212;  
HUM 121, 122, 123; LIT 115, 201, 202; MUS 120, 121, 122;  
PHI 111, 112, 113; THE 211, 212

*Social and Behavioral Sciences* (courses from two different disciplines) ANT 101, 111; ECO 201, 202; GEO 105; HIS 101, 102, 201, 202; POS 105, 111; PSY 101, 102; SOC 101, 102 6

Electives 3

Electives must be selected from college-level transfer courses.

No more than three credits in physical education may be counted.

Total Required Credits 61-69

\* *Students are encouraged to complete GER 111 and 112 to satisfy the Arts and Humanities requirement.*

# Plumbing

(See *Construction Technology*)

# Political Science

## Degree: Associate of Arts With an Emphasis in Political Science

Political science is the study of how political systems are created, the nature of the social contracts between people and governments, political parties, political behavior and the evolution of political institutions. The completion of the following courses is appropriate for those who plan to transfer to a four-year college or university to complete a major in political science.

You are urged to consult with a faculty advisor before beginning any program of study.

Recommended Courses			Credits
ECO	201	Principles of Macroeconomics	3
ECO	202	Principles of Microeconomics	3
HIS	201	U. S. History I	3
HIS	202	U. S. History II	3
POS	105	Introduction to Political Science	3
POS	111	American Government	3
POS	215	Current Political Issues	3

### Core Curriculum Requirements

#### English/Speech

ENG	121	English Composition I	3
ENG	122	English Composition II	3
SPE	115	Principles of Speech Communication	3

*Humanities* (courses from two different disciplines) 9  
 ART 111, 112; Foreign Language 111, 112, 211, 212;  
 HUM 121, 122, 123; LIT 115, 201, 202; MUS 120, 121, 122;  
 PHI 111, 112, 113; THE 211, 212

*Mathematics* (any course from the following) 3  
 MAT 121, 125, 135, 201, 202

*Science* (any course from the following) 4  
 AST 101, 102; BIO 105, 111, 112; CHE 101, 102, 111, 112;  
 GEY 111, 121; PHY 105, 111, 112, 211, 212

Electives 14  
 Electives must be selected from college-level transfer courses.  
 No more than three credits in physical education may be counted.

Total Required Credits 60

# Production and Design Technology

*(See Multimedia Technology Cluster)*

# Psychology

## Associate of Arts Degree With an Emphasis in Psychology

The field of psychology is concerned with the study of normal and abnormal human behavior. Psychologists frequently provide personal counseling in hospitals, clinics, schools, corrections facilities or in their own private practices. Experimental psychologists work in laboratories and try to develop theories of why and how people behave as they do. The completion of the following courses is appropriate for students who plan to transfer to a four-year college or university to complete a major in psychology.

You are urged to consult with a faculty advisor before beginning any program of study.

Recommended Courses			Credits
PSY	101	General Psychology I	3
PSY	102	General Psychology II	3

### Choose from one of the following

PSY	226	Social Psychology	3
or			
PSY	235	Human Growth and Development	
or			
PSY	238	Child Development	
or			
			Social and Behavioral Sciences Electives <i>(approved by faculty advisor)</i>

### Core Curriculum Requirements

#### English/Speech

ENG	121	English Composition I	3
ENG	122	English Composition II	3
SPE	115	Principles of Speech Communication	3

*Humanities* (courses from two different disciplines) 9  
 ART 111, 112; Foreign Language 111, 112, 211, 212;  
 HUM 121, 122, 123; LIT 115, 201, 202; MUS 120, 121, 122;  
 PHI 111, 112, 113; THE 211, 212

*Mathematics* (any course from the following) 3  
 MAT 121, 125, 135, 201, 202

*Science* (any course from the following) 4  
 AST 101, 102; BIO 105, 111, 112; CHE 101, 102, 111, 112;  
 GEY 111, 121; PHY 105, 111, 112, 211, 212

*Social and Behavioral Sciences* (any course from the following) 3  
 ANT 101, 111; ECO 201, 202; GEO 105; HIS 101, 102,  
 201, 202; POS 105, 111; SOC 101, 102

Electives 14  
 Electives must be selected from college-level transfer courses.  
 No more than three credits in physical education may be counted.

Total Required Credits 60

# Radiologic Technology

**(In cooperation with Lutheran Medical Center)**

## Degree: Associate of Applied Science

*The following program becomes effective Fall 1997*

The Radiologic Technology program is designed to provide medical diagnostic radiography training for students who wish to establish eligibility to participate in the national certification examination of the American Registry of Radiologic Technologists. Graduates who pass this national certifying examination are qualified to assume diagnostic radiographer positions in thousands of medical facilities across the nation, both in hospitals and private clinics or offices. After gaining on-the-job experience, these positions may allow the technologist to participate in advanced level examinations as well as computed tomography, magnetic resonance imaging or mammography.

### Required Major Courses

	<b>Credits</b>
<b>First Session (Fall)</b>	
RAD 105 Radiographic Procedures I	3
RAD 165 Imaging Equipment I	3
RAD 185 Patient Care I	3
RAD 106 Clinical Education I	5
	14
<b>Second Session (Spring)</b>	
RAD 115 Radiographic Procedures II	3
RAD 175 Imaging Equipment II	3
RAD 195 Patient Care II	2
RAD 116 Clinical Education II	5
	13
<b>Third Session (Summer)</b>	
RAD 226 Clinical Education III	7
	7

### Fourth Session (Fall)

RAD 225	Radiographic Procedures III	3
RAD 270	Radiation Biology & Radiation Protection	2
RAD 236	Clinical Education IV	8
		13

### Fifth Session (Spring)

RAD 260	Registry Review	2
RAD 246	Clinical Education V	11
		13

**Total Required Credits** **78**

### Program Totals

Credit Hours	78
Prerequisites	18
Professional	60
Clinical Contact Hours	1640

*Prior to beginning the Radiologic Technology Program, interested students are required to apply to both the college and the Program. There are five General Education Core courses that must be completed before beginning the radiography program.*

### General Education Courses

	<b>Credits</b>
MAT 105 Intermediate Algebra	4
PSY 101 General Psychology	3
<b>or</b>	
SOC 101 Introduction to Sociology	3
BIO 201 Human Anatomy & Physiology I	4
BIO 203 Human Anatomy & Physiology II	4
ENG 121 English Composition I	3

*Interested students should apply to the Radiologic Technology program in the Fall of the year preceding the year in which they wish to begin. Other admission requirements are available upon request. All of the clinical experiences are conducted at Lutheran Medical Center.*

# Sociology

## Associate of Arts Degree With an Emphasis in Sociology

Sociology is the study of groups of people and the way they interact. The completion of the following courses is appropriate for those who plan to transfer to a four-year college or university to complete a major in sociology.

You are urged to consult with a faculty advisor before beginning any program of study.

<b>Recommended Courses</b>		<b>Credits</b>
SOC 101	Introduction to Sociology I ( <i>Core</i> )	3
SOC 102	Introduction to Sociology II ( <i>Core</i> )	3
SOC 215	Contemporary Social Problems	3
SOC XXX	Electives to be selected from the sociology curriculum	6
<b>Core Curriculum Requirements</b>		
<i>English/Speech</i>		
ENG 121	English Composition I	3
ENG 122	English Composition II	3
SPE 115	Principles of Speech Communication	3
<i>Humanities</i> (courses from two different disciplines) 9		
ART 111, 112; Foreign Language 111, 112, 211, 212; HUM 121, 122, 123; LIT 115, 201, 202; MUS 120, 121, 122; PHI 111, 112, 113; THE 211, 212		
<i>Mathematics</i> (any course from the following) 3		
MAT 121, 125, 135, 201, 202		
<i>Science</i> (any course from the following) 4		
AST 101, 102; BIO 105, 111, 112; CHE 101, 102, 111, 112; GEY 111, 121; PHY 105, 111, 112, 211, 212		
<i>Social and Behavioral Sciences</i> (any course from the following) ANT 101, 111; ECO 201, 202; GEO 105; HIS 101, 102, 201, 202; POS 105, 111; PSY 101, 102 3		
<b>Electives</b>	<b>17</b>	
Electives must be selected from college-level transfer courses. No more than three credits in physical education may be counted.		
<b>Total Required Credits</b>		<b>60</b>

# Speech Communications

## Associate of Arts Degree with an Emphasis in Speech Communications

The completion of the following courses is appropriate for those of you who plan to transfer to a four-year college or university to complete a major in communications. This program provides basic preparation leading to communication-related careers such as sales, journalism, public relations, personnel, service and political careers, teaching and broadcasting.

You are urged to consult with a faculty advisor before beginning any program of study.

<b>Recommended Courses</b>		<b>Credits</b>
SPE 111	Survey of Communication	3
<b>or</b>		
SPE 125	Interpersonal Communication	
<b>or</b>		
SPE 211	Advanced Public Speaking	
SPE 217	Group Communication	3
SPE 115	Principles of Speech Communication	3
SPE 220	Intercultural Communication	3
SPE 230	Argumentation and Debate	1-3
<b>or</b>		
SPE 275	Forensics and Speech Competition	1-3
ENG 121	English Composition I	3
ENG 122	English Composition II	3
<b>Core Curriculum Requirements</b>		
<i>Humanities</i> (courses from two different disciplines) 9		
ART 111, 112; Foreign Language 111, 112, 211, 212; HUM 121, 122, 123; LIT 115, 201, 202; MUS 120, 121, 122; PHI 111, 112, 113; THE 211, 212		
<i>Mathematics</i> (any course from the following) 3		
MAT 121, 125, 135, 201, 202		
<i>Science</i> (any course from the following) 4		
AST 101, 102; BIO 105, 111, 112; CHE 101, 102, 111, 112; GEY 111, 121; PHY 105, 111, 112, 211, 212		
<i>Social and Behavioral Sciences</i> (courses from two different disciplines) ANT 101, 111; ECO 201, 202; GEO 105; HIS 101, 102, 201, 202; POS 105, 111; PSY 101, 102; SOC 101, 102 9		
<b>Electives</b>	<b>14</b>	
Electives must be selected from college-level transfer courses. No more than three credits in physical education may be counted.		
<b>Total Required Credits</b>		<b>60</b>



## Theatre Arts

# Theatre Arts

### Associate of Arts Degree with an Emphasis in Theatre Arts

The completion of the following courses is appropriate for those who plan to transfer to a four year college or university to complete a major in theatre arts. This program provides basic preparation leading to theatre-related careers as well as to the teaching of theatre. Students are urged to consult with a faculty advisor before beginning any program of study.

Recommended Courses			Credits
THE	105	Introduction to Theatre Arts	3
THE	111	Acting I	3
		or	
THE	112	Acting II	

#### Choose two courses from the following:

THE	131	Theatre Production I	
THE	132	Theatre Production II	
THE	231	Theatre Production III	
THE	232	Theatre Production IV	6
THE	116	Technical Theatre	3
THE	170	Dance and Stage Movement	
		or	
THE	271	Dance for the Musical Theatre	3
THE	210	Singing for Actors	3
THE	211	Development of Theatre I (Core)	3
		or	
THE	212	Development of Theatre II (Core)	3
		or	
THE	215	Playwriting	3

### Core Curriculum Requirements

#### English/Speech

ENG	121	English Composition I	3
ENG	122	English Composition II	3
SPE	115	Principles of Speech Communication	3

<i>Humanities</i> (any course from the following)	3
ART 111, 112; Foreign Language 111, 112, 211, 212; HUM 121, 122, 123; LIT 115, 201, 202; MUS 120, 121, 122; PHI 111, 112, 113	

<i>Mathematics</i> (any course from the following)	3
MAT 121, 125, 135, 201, 202	

<i>Science</i> (any course from the following)	4
AST 101, 102; BIO 105, 111, 112; CHE 101, 102, 111, 112; GEY 111, 121; PHY 105, 111, 112, 211, 212	

<i>Social and Behavioral Sciences</i> (courses from two different disciplines)	9
ANT 101, 111; ECO 201, 202; GEO 105; HIS 101, 102, 201, 202; POS 105, 111; PSY 101, 102; SOC 101, 102	

**Electives 8**  
Electives must be selected from college-level transfer courses.  
No more than three credits in physical education may be counted.

**Total Required Credits 60**

# Water Quality Management Technology

(See *Environmental and Safety Technology*)

# Welding Fabrication Technology

**Degree: Associate of Applied Science**

**Certificate: 32 Credits**

This program provides job entry skills in the welding trade and upgrading for those in the field who need to acquire more skill.

Demonstrated mastery of these skills is required. Programs are open-entry and open-exit. You may complete some of the courses, enter the work force and then return at any time either to complete the program for a certificate or degree or to upgrade specific skills.

Required Major Courses			Credits
WFT	100*	Oxy-Acetylene Safety, Cutting and Welding	4
WFT	107*	Blueprint Reading and Estimating	4
WFT	108*	S.M.A.W. Safety Electrode Identification and Surface Padding	4
WFT	110*	S.M.A.W. Joints in Three Positions	4
WFT	115*	Plate Code Test E7018 With Backing Strip	4
WFT	116*	Plate Code Test E6010 Without Backing Strip	4
WFT	118	Special Applications in Arc Welding	4
WFT	200	Pipe Joint Design, Fabrication and Testing 2G	4
WFT	202	Pipe Test A.S.M.E., Section IX, E6010	4
WFT	207*	G.T.A.W. Safety and Welding Joints	12
WFT	209	G.M.A.W. Pipe and Plate Code Testing	4
WFT	210	Structural Shapes and Joint Design Project Development	4
WFT	235	Pipe Test A.S.M.E., Section IX, E6010 and E7018	4
WFT	236	Pipe Joint Design and Fabrication	4
			<hr/> 64

### General Education Requirements

English/Speech (COM, ENG, SPE)	3
Mathematics (056 or above)	3

**Credit from any two of the following three areas: 9**

*Humanities* (ART, FRE, GER, HUM, LIT, MUS, PHI, SPA, THE) 15

*Science* (AST, BIO, CHE, GEY, PHY)

*Social and Behavioral Sciences* (ANT, ECO, GEO, GEO, HIS, POS, PSY, SOC)

**Total Required Credits 74**

**Total Required Contact Hours 1222**

COM	115	The Job Search Process (1 credit) and
WFT	297	Cooperative Education (variable credit) or
WFT	299	Independent Study (variable credit)
		May be used as an elective.

\* Certificate Requirements

# Course Descriptions

## Course Descriptions

Course descriptions are listed in alphabetical order by program. Please refer to the current *Class Planning Schedule* for the list of courses offered each semester. Unless otherwise indicated, courses are normally offered each semester. The courses listed on the following pages are an indication of college course offerings; courses and programs are subject to modification at any time.

## Corequisite

A corequisite is a course which must be taken in conjunction with another course during the same session, i.e. a laboratory is a corequisite to some computer, math and science courses.

## Prerequisite

A prerequisite is a course which must be satisfactorily completed before taking the next higher level course. The prerequisite for a course may also be permission of instructor.

## Special Topics Courses

Most program/course prefix areas offer special topics courses. These courses are numbered 290. Students should consult with their advisor regarding the applicability of these courses toward a degree or certificate. Descriptions are on file with the appropriate Instructional Vice President.

## ACCOUNTING

### ACC Computer Lab Courses

Some accounting courses have a computer lab accompanying them. The lab is incorporated into the credits for its related course.

### ACC 101 Fundamentals of Accounting I 3 Credits

This course presents the basic elements and concepts of accounting, with emphasis on the procedures used for maintaining journals, ledgers and other related records, and for the completion of end-of-period reports for small service and merchandising businesses.

### ACC 105 Expanded Fundamentals of Accounting 5 Credits

This course presents the basic elements of accounting, with emphasis on the procedures used for maintaining journals, ledgers and other related records and for the completion of end of period reports for small service and merchandising businesses in accordance with generally accepted accounting principles. You are introduced to fundamental record keeping for proprietorships, partnerships and corporations.

### ACC 121 Principles of Accounting I 4 Credits

This course introduces the study of accounting principles and the theory and logic that underlie procedures and practices. Topics include the accounting cycle for service and merchandising companies; special journals and subsidiary ledgers, internal control principles and practices, notes and interest, inventory systems and costing, plant assets and intangible asset accounting, and depreciation methods and practices.

### ACC 122 Principles of Accounting II 4 Credits

Prerequisite: ACC 121 or equivalent

This course is a continuation of ACC 121 and covers accounting principles as they apply to partnerships and corporations. Topics include stocks and bonds, investments, cash flow statements, financial analysis, budgeting and cost and managerial accounting.

### ACC 125 Introduction to Electronic Spreadsheets 1 Credit

Prerequisite: CIS 110 or equivalent

This course introduces the basic concepts of electronic spreadsheets. You prepare and modify several spreadsheets. Booting up the computer, cursor movement, data types, formatting, editing cells, protecting cells, pointing, copying, modifying the spreadsheet and printing are covered. Saving and retrieving files are also covered. Lotus 1-2-3 or other popular versions are used. See the *Course Planning Schedule*.

### ACC 126 Intermediate Electronic Spreadsheets 1 Credit

Prerequisite: ACC 125, CIS 150 or equivalent

This course builds on the basic concepts of electronic spreadsheets covered in ACC 125 by providing you with hands-on experience constructing more complex spreadsheets utilizing more advanced features of spreadsheet software. Decision-making with if-then structures and sorting and combining spreadsheets are covered. In addition, students learn to use some of the special functions such as lookup tables, average, count, minimum, maximum, amortization, present and future value and depreciation. Lastly, you are introduced to the database and the graphics capabilities of the software. Lotus 1-2-3 or other popular versions are used. See the *Course Planning Schedule*.

## **Accounting**

### **ACC 127 Advanced Spreadsheets—Macros**

1 Credit

Prerequisite: ACC 126, CIS 151 or equivalent

This course introduces macros and the command language. You will write macros that include the features of if-then, looping, accept user input, subroutines, open, read and write files and maintenance-oriented macros. Troubleshooting and debugging are emphasized.

### **ACC 136 Computerized Accounting**

3 Credits

Prerequisite: ACC 101, 105 or 121

Corequisite: Computer Lab

This course introduces data entry procedures on the computer in accounting applications. You will study theory and application of general ledger, accounts receivable, accounts payable and payroll functions of accounting as performed on a typical microcomputer system. Additional topics discussed are internal control and selection of a computerized accounting system. This course gives students hands-on experience on the microcomputer culminating with a computerized practice set.

### **ACC 137 Electronic Spreadsheets**

3 Credits

Prerequisite: CIS 118 or equivalent and ACC 101, 105 or 121

Corequisite: Computer Lab

This course introduces you to the concepts and uses of electronic spreadsheets as they apply in accounting. You will construct several spreadsheets and graphs as well as learn to use the database query and statistical features. Use and design of macros are introduced.

### **ACC 138 Payroll and Sales Tax**

3 Credits

Corequisite: ACC 101, 105 or 121

This course acquaints you with various payroll systems; recordkeeping rules for both payroll and sales taxes; and the preparation of the required federal, state and local forms for reporting sales taxes and payroll taxes.

### **ACC 146 Individual Income Tax**

5 Credits

Prerequisite: ACC 121 recommended

This course introduces preparation of Federal and Colorado individual income tax returns according to the Internal Revenue Service and Colorado Department of Revenue regulations. It familiarizes you with the most frequently used tax forms, information and procedures. This course also includes the preparation of income tax forms necessary for a sole proprietorship business, gains and losses on sale of assets, alternative methods of computing income tax and methods of researching tax questions.

### **ACC 161 Understanding Financial Statements**

3 Credits

This course examines the elements of the primary financial statements including balance sheet, income statement, retained earnings statement and statement of cash flows. You will do vertical and horizontal analysis of statements, as well as learn to calculate key ratios and rates of return.

### **ACC 190 Financial Investigations**

3 Credits

This course introduces the current perspectives dominant in the field of financial investigations. This course also discusses concepts of law and evidence, sources of information including financial institutions, business financial record keeping, and tracing funds, using a variety of methods and interviewing as they apply to detecting and resolving financial crimes. Emphasis is placed on theoretical principles and applications of financial investigative techniques.

### **ACC 211 Intermediate Accounting I**

5 Credits

Prerequisites: ACC 122, MAT 100 or equivalent

This course studies the conceptual framework of financial accounting and advanced theory and practice applicable to the following major topics: time value of money; current assets; current liabilities; and operational assets.

### **ACC 212 Intermediate Accounting II**

5 Credits

Prerequisite: ACC 211

This course is a continuation of ACC 211. It focuses on the theoretical and practical aspects of accounting for long-term liabilities, stockholders' equity, investments, pensions and leases. Income tax allocation, financial statement analysis, cash flow statements and accounting methods changes are also covered.

### **ACC 216 Governmental Accounting**

3 Credits

Prerequisite: ACC 122

This course studies the hands-on approach to accounting for local, state and federal governments as prescribed in the law and in generally accepted governmental accounting practices. It includes the study of fund accounting, budgeting, revenues, appropriations and expenditure controls.

### **ACC 226 Cost Accounting I**

4 Credits

Prerequisite: ACC 122, MAT 100 or equivalent

This course studies cost accumulation methods and reports. The concepts and procedures of job order, process, standard and direct cost systems are covered, and budgeting, planning and control of costs are included.

### **ACC 227 Cost Accounting II**

3 Credits

Prerequisite: ACC 226

This course is a continuation of ACC 226 and focuses on the decision-making aspects of managerial accounting using microcomputer spreadsheet applications for assigned problems. Topics include product pricing strategy, capital budgeting, statement of cash flows and application of linear programming.

### **ACC 246 Business Taxation**

3 Credits

Prerequisite: ACC 146

This course introduces the preparation of Federal and Colorado business tax returns and tax reports according to the current Internal Revenue Code and Colorado Department of Revenue regulations. This course familiarizes students with the most frequently used tax forms, information resources and procedures. Practical application is emphasized with actual preparation of income tax forms for C-Corporations, S-Corporations and partnerships. An overview of payroll, sales, excise and property taxes and the proper filing of their related forms is included.

# AIR CONDITIONING, HEATING AND REFRIGERATION

### **AHR 101 Heating for the Home Owner**

2 Credits

This course is for homeowners who wish to maintain their own heating system. Minor repairs such as thermocouples and motor/belt replacement are covered.

### **AHR 102 Heating Fundamentals**

4 Credits

This course examines the properties of gas, gas controls, gas burners, gas piping. It also covers combustion air and venting gas-fired appliances. Study of the Uniform Mechanical Code related to these areas and heat loss calculations are also covered.

### **AHR 105 Electricity for HVAC/R**

4 Credits

This course covers fundamentals of electricity, measuring instruments, Ohm's Law, series and parallel circuits, components, basic electrical motors and application to HVAC/R.

### **AHR 110 Refrigeration Fundamentals**

4 Credits

Corequisite: AHR 105

This course covers basic refrigeration theory and practice, safety, hermetic systems, refrigerants and tools and equipment used in refrigeration servicing.

### **AHR 120 Air Conditioning Systems**

6 Credits

Prerequisites: AHR 105, 110 or field experience

Corequisite: AHR 132

This course covers theory/practices used in servicing air conditioning systems. Emphasis is placed on heating and cooling calculations, duct sizing, air flow demand, refrigerant recovery practices and special control devices.

### **AHR 125 Refrigerant Recovery Training**

1 Credit

This course explains the laws regarding refrigerant recovery. It includes hands-on use of recovery equipment. Upon successful completion of this course you will be prepared to take the EPA certification test.

### **AHR 132 Air Conditioning and Refrigeration Controls**

4 Credits

Prerequisite: AHR 105 or permission of instructor

This course is an extension of AHR 105. It applies the knowledge of basic electricity to controls related to air conditioning and refrigeration equipment. The course also works on reading and drawing schematic and ladder diagrams.

### **AHR 140 Residential Forced Air Heating**

4 Credits

This course is designed for the student who wishes to enter the HVAC trade. The student will learn the basic skills and knowledge required to work on installation of residential forced-air systems. Information covered in this course includes: tools, safety, materials, installation standards and practices.

### **AHR 141 Residential Forced Air Heating**

4 Credits

Prerequisites: AHR 102, 105

This course covers the operation, maintenance and repair of residential forced air heating systems. It examines air to air heat exchanges, humidification, air cleaning systems, analyzing flue gas and testing for furnace efficiency.

### **AHR 145 Residential Air System Installation and Design**

4 Credits

Prerequisite: Completion of AHR 140 with a grade of "C" or above or permission of instructor

This course is presented in cooperation with the Denver Home Builders Association and Red Rocks Community College. The focus of this course is on the installation, design and layout of residential forced air systems and accessories. Topics include reading blueprints, installation of equipment and application of national standards and local codes.

### **AHR 151 Low Pressure Steam Heating**

4 Credits

Prerequisites: AHR 102, 105

This course examines low pressure steam systems including boilers, piping, heat convectors. Repair and maintenance of these systems is covered as well as theory behind their operation. Boiler feed water and condensate systems are also discussed.

### **AHR 162 Heating Controls**

4 Credits

Prerequisite: AHR 105 or permission of instructor

This course is an extension of AHR 105. It applies the knowledge of Basic Electricity to Controls related to heating equipment. This includes boilers and furnaces with emphasis on ignition and controls related to high efficiency heating equipment. Course work includes reading and drawing ladder and schematic wiring diagrams.

### **AHR 200 HVAC/R Controls II**

4 Credits

Prerequisite: AHR 132

This course covers advanced electrical controls. Emphasis is on pneumatic controls and systems used in commercial and industrial HVAC/R equipment.

### **AHR 201 Advanced Refrigeration**

6 Credits

Prerequisites: AHR 105, 110

This course covers fundamentals of commercial refrigeration equipment with emphasis on service and installation of bulk storage equipment and low or medium temperature such as walk-in, display cases, ice machines and ice cream machines.

### **AHR 206 Hot Water Heating Systems**

4 Credits

Prerequisites: AHR 102, 105

This course covers the theory of operation behind these systems, as well as installation, maintenance and repair. It also examines air elimination, circulator pump and pipe sizing. Boiler and heat convector sizing are also discussed.

### **AHR 211 Stationary Engineer**

### **AHR 212 Boiler Operator**

### **AHR 213 Journeyman Steam Fitter**

### **AHR 214 Journeyman Boiler Maker**

### **AHR 215 Journeyman Heating and Ventilating**

2-4 Credits

These courses cover the Uniform Mechanical Code and city codes where these certificates are required.

### **AHR 216 Uniform Mechanical Code**

2-4 Credits

This course reviews in detail the Uniform Mechanical Code. It is intended to give those entering the HVAC/R trade as well as those trades people taking certification examinations a sound knowledge of this code.

## Air Conditioning, Heating/Refrigeration

### **AHR 217 Refrigeration Operator AHR 218 Journeyman Refrigeration** 2-4 Credits

The above two courses cover the Uniform Mechanical Code and city codes where these certificates are required.

### **AHR 222 Evaporative Cooling Systems and Water Treatment** 4 Credits

This course covers aspects of commercial and residential evaporative cooling systems. Areas examined include maintenance to these systems, water treatment, sizing, pumps and piping.

### **AHR 225 Indoor Air Quality and Ventilation** 4 Credits

This course is for the experienced HVAC contractor and service technician. It informs students of problems associated with indoor air quality and methods for improvement of the indoor environment. The Uniform Mechanical Code and other national standards are covered as well.

### **AHR 239 Fundamental Heating for the Building Maintenance Person** 4 Credits

This course is for the building maintenance person who possesses experience with electromechanical devices and applies it to heating equipment. Forced air, hot water and steam systems are examined.

### **AHR 240 Commercial Heating Systems** 4 Credits

Prerequisites: AHR 102, 132

This course covers the maintenance and repair of the typical heating systems used in commercial buildings and multi-family dwellings. This course includes study in warm air and hydronic systems. Flame safeguard systems are also studied. Students interested in this course must have previous experience with residential heating systems.

### **AHR 278 Advanced HVAC/R Study** 3-12 Credits

Prerequisite: Permission of instructor

Enrollment in this course is limited to advanced HVAC/R students.

## **ANTHROPOLOGY**

### **ANT 101 Cultural Anthropology** 3 Credits

This course studies human cultural patterns and learned behavior. The course includes linguistics, social and political organization, religion, culture and personality, culture change and applied anthropology. Cultural anthropology deals with issues of cultural diversity, pluralism and relativism as a component of multi-cultural studies.

### **ANT 111 Physical Anthropology** 3 Credits

This course studies human biology and its effects on behavior. It includes principles of genetics and evolution, vertebrates and primates, human origins, human variation and ecology.

### **ANT 209 Culture in the World Today: Latin America** 3 Credits

This course presents a view of cultural dynamics.

### **ANT 271 History of Middle America** 3 Credits

This course traces the history of the indigenous people of Mexico from the first inhabitants through the conquest by the Spanish in 1521 A.D. Special emphasis is placed on such cultures as the Olmec, Maya, Toltec, Totonac, Teotihuacan and Aztec. The course presents the daily life, religion, art, social and political organization and other historical characteristics.

## **ART**

### **ART 110 Art Appreciation** 3 Credits

This course is an introduction to the visual arts including language, concepts, process and history.

### **ART 111 Art History I** 3 Credits

This course provides the knowledge base to understand the visual arts, especially as related to Western culture. It surveys the visual arts from the Ancient through the Medieval periods.

### **ART 112 Art History II** 3 Credits

This course provides the knowledge base to understand the visual arts, especially as related to Western culture. It surveys the visual arts from the Renaissance through the Modern periods.

### **ART 121 Drawing I** 3 Credits

This course is an investigation of various approaches and media designed to develop drawing skills and visual awareness.

### **ART 122 Drawing II** 3 Credits

This course studies expressive drawing techniques and development of individual expressive style.

### **ART 131 Design I** 3 Credits

This course studies basic design elements, visual perception, form and composition.

### **ART 132 Design II** 3 Credits

This course covers the application of design elements and principles to both two and three dimensional problems.

### **ART 151 Photography I** 1-3 Credits

This course is an introduction to black and white photography as a fine art medium and it develops skills necessary for basic camera and lab operations.

### **ART 152 Photography II** 1-3 Credits

This course further explores camera and lab operations with and emphasizes individual creativity. It includes the development of a comprehensive portfolio.

### **ART 156 Fundamentals of Ceramics** 1 Credit

This course is an introduction and comprehensive study of low fire ceramics. It introduces handbuilding techniques such as slab, coil and pinch; and throwing on the wheel. There is discussion of technical and esthetics concerns. *Offered at the Arvada Center for the Arts and Humanities only.*

### **ART 157 Advanced Wheel Throwing** 1 Credit

Prerequisite: Permission of instructor

This course is a comprehensive study of wheel thrown work. Using the wheel as a tool and learning to finish the work, glazing and firing are discussed. There are discussions of technical and esthetics concerns. *Offered at the Arvada Center for the Arts and Humanities only.*

**ART 158 Advanced Handbuilding**

1 Credit

Prerequisite: Permission of instructor

This course is a comprehensive study of handbuilding. Basic handbuilding techniques such as slab, coil and pinch; learning advanced handbuilding techniques; working on a large scale and combining techniques and including the wheel are covered. There are discussions of technical and esthetics concerns. Offered at the Arvada Center for the Arts and Humanities only.

**ART 160 Fundamentals of Ceramics I**

3 Credits

This is an art methods course concerned with developing the student's ability to produce and appreciate ceramic art objects including utilitarian pottery, decorative vessels and sculpture. The fundamental topics covered are wheel throwing and handbuilding techniques, the physical and chemical properties of clay and glazes, surface decoration techniques and firing techniques.

**ART 162 Fundamentals of Ceramics II**

3 Credits

Prerequisite: ART 160

This is an art methods course concerned with the continued development of the student's ability to produce and appreciate ceramic art objects including utilitarian pottery, decorative vessels, and sculpture. In this course the basic skills of wheel throwing, handbuilding, clay and glaze science, decorative techniques, and firing processes will be further developed.

**ART 211 Painting I**

3 Credits

This course covers color composition, materials and techniques of studio painting.

**ART 212 Painting II**

3 Credits

This course emphasizes experimentation with materials, composition and color.

**ART 213 Painting III**

3 Credits

This course provides continuing investigation of subject, color composition and individual forms of expression.

**ART 214 Painting IV**

3 Credits

This course provides advanced work with theme development, sophisticated color relationships, experimentation in conceptual forms and consistent progression of subject matter.

**ART 221 Drawing III**

3 Credits

This course provides further exploration of expressive drawing techniques and style.

**ART 222 Drawing IV**

3 Credits

This course covers advanced drawing problems with emphasis on individual style, subject and content.

**ART 224 Sculpture I**

3 Credits

This course introduces the fundamentals of sculpture such as modeling, casting, carving and assemblage processes.

**ART 225 Sculpture II**

3 Credits

This course provides a development of the understanding and manipulation of three-dimensional form, with greater concentration on individual creativity and style.

**ART 228 Printmaking I**

3 Credits

This course introduces the basic techniques and skills of printmaking as fine art media. Instruction includes an understanding of the visual concepts as they relate to print.

**ART 231 Watercolor I**

3 Credits

This course introduces the basic techniques and unique aspects of materials involved with using transparent and/or opaque water media.

**ART 232 Watercolor II**

3 Credits

This course provides advanced study of subject development, form, color and theme.

**ART 233 Watercolor III**

3 Credits

This course provides continuing study of watercolor techniques with an emphasis on original compositions and experimentation with materials.

**ART 234 Watercolor IV**

3 Credits

This course provides advanced study of techniques, individual style or expression and consistency of compositional problem-solving.

**ART 255 Color Photography**

3 Credits

This course covers the fundamentals of color photography such as color theory and light, production, processing and printing of color negatives.

**ART 261 Second Year Pottery I**

3 Credits

Prerequisites: ART 162 or permission of instructor

Intermediate wheelwork with advanced throwing problems is covered in this course and there is continuing involvement in glazing and firing techniques.

**ART 262 Second Year Pottery II**

3 Credits

Prerequisites: ART 261 or permission of instructor

This course is a continuation of ART 261. This course covers more advanced throwing problems in one of three areas: (1) tableware, (2) other functional forms and (3) art forms.

**ART 263 Ceramic Design**

3 Credits

Prerequisites: One semester of handbuilding and/or throwing

This course covers design and the decoration of pottery forms. You may work in one or more areas of throwing, extruding, handbuilding, casting or any combination of forming techniques in clay. This course includes various glazing, firing and fabricating processes that aid or result in pottery decoration.

**ART 265 Handbuilt Clay III**

3 Credits

This course covers advanced problems that are investigated with emphasis placed on large-scale pieces that promote creativity with techniques and combinations of different textures.

**ART 266 Intermediate Wheel Throwing**

1 Credit

This course is an introduction and comprehensive study of wheel-thrown work and starts with using the wheel as a tool. This course covers finishing the work, glazing and firing. There are discussions of technical and esthetics concerns. These discussions include construction techniques, design problems, glazing, decoration technique and firing. Glazing includes slips, englobe and terra sigillata. Firing techniques concentrate on high fire and salt. Along with direct experience, this course also includes keeping a sketchbook, visiting studios or museums and learning a new clay vocabulary.

## **Art**

### **ART 270 Figure Drawing I**

3 Credits

This course is an introduction to the basic techniques of drawing the human figure.

### **ART 271 Figure Drawing II**

3 Credits

This course provides a continuing study of the various methods of drawing the human figure, with emphasis on the description of form and individual style.

### **ART 280 Metalsmithing and Jewelry**

3 Credits

This course is designed as an introduction to the design and construction of jewelry. Safety and proper shop techniques are also covered.

### **ART 281 Metalsmithing and Jewelry II**

3 Credits

This course uses advance design techniques in jewelry construction. It also introduces students to new tools and studio techniques.

### **ART 290 Special Topics: Raku**

Variable Credits

This course is an introduction and comprehensive study of Raku fired ceramics. Building techniques, including slab, pinch and coil are introduced as well as using the wheel as a tool. Learning to finish the work, glazing and firing are also covered. The technical and aesthetic aspects of ceramics are discussed. Discussions include construction techniques, design problems and decoration techniques. This course also explores slips, englobe and raku glazes. You are required to keep sketch books, attend studio or museum visits and learn new clay vocabulary.

## **ASTRONOMY**

### **AST 101 Astronomy I**

4 Credits

This course studies the history of astronomy, the tools of the astronomer and the contents of the solar system: planets, moons, asteroids, meteoroids and comets. This course also includes laboratory experience.

### **AST 102 Astronomy II**

4 Credits

This course studies the structure and life cycle of the sun, stars, galaxies and the universe as a whole, including cosmology and relativity. This course also includes laboratory experience.

## **AUTO COLLISION TECHNOLOGY**

### **ACT 120 GMAW (MIG) Welding**

3 Credits

This course develops the skills needed to analyze factors such as welding current, voltage, gun angle, shielding gases, wire speed and their affects on MIG welding. Students produce several Mig welding plates that meet or exceed industry standards.

### **ACT 140 Non-Structural Parts Repair (Outer Body Panel Replacement/Adjustment Repair)**

3 Credits

This course explores how to remove and replace non-structural parts of an automobile.

### **ACT 160 Structural Analysis**

3 Credits

This course develops students skills needed to identify and diagnose various types of body damage, including twist, mash, sag and side sway, and explains how the datum plane and center line concepts relate to body repair.

### **ACT 164 Unibody Measurement**

3 Credits

This course enables students to measure a damaged unibody vehicle using a universal measuring system and interpret body dimension information and key location reference points. The use of a dedicated (fixture) system, tape measure, tram bar and a self-centering gauge are also utilized.

### **ACT 168 Anchoring, Pulling and Stress Relieving**

3 Credits

Prerequisites: ACT 120, 160 and 164

This course enables students to identify and set-up various types of straightening equipment and explains how they are used. This course also plans and executes a pulling sequence using a multiple-pull approach and performs basic stress relieving techniques.

### **ACT 170 Surface Preparation**

5 Credits

This course inspects and identifies types of finishes and surface conditions. This course also covers terminology including: materials, finishes, surfaces preparation, masking and application of under coats. In addition, this course prepares students in the usage of power sanding equipment and existing paint films for refinishing.

### **ACT 174 Paint Mixing, Matching and Applying**

5 Credits

This course covers types/colors of paint on vehicles, correctly mixing materials to manufacturers' recommendations, selecting spray equipment, adjusting air pressure and spraying technique. The instructor assigns either practice panels, shop vehicles or customer vehicles to be refinished with various types of repair systems.

### **ACT 178 Finish Defects, Causes and Cures**

3 Credits

This course enables students to identify finish defects, determine the cause and correct the condition.

### **ACT 180 Plastics and Fiber Glass Repair/Adhesives**

3 Credits

This course studies plastic automobile parts, resin/fiber glass parts and SAC fiber glass parts. Students make resin/fiber glass parts and molds and perform adhesive repairs of all types of plastics.

### **ACT 184 Plastic Parts Repair/Welding**

3 Credits

This course studies thermoplastic automotive parts and appropriate welding techniques. This course also explores plastic parts retexturing and refinishing of repaired parts.

### **ACT 190 Automotive Damage Estimating**

3 Credits

This course explores the purposes of the estimate sheet, the use of professional guides and manuals and the procedures of producing completed estimates of damaged automobiles. This course also utilizes computerized applications to generate professional estimate sheets.

## **AUTOMOTIVE TECHNOLOGY**

*(In cooperation with and held at the Warren Center)*

### **AUM 101 Basic Mechanics/Safety** 1 Credit

This course introduces you to the Automotive Technology program held at the Warren Tech Auto Shop. It covers orientation, grading systems and shop safety. It is a required course if you are new to the Automotive Technology program and is a prerequisite for any of the other courses within the program.

### **AUM 102 Brakes I** 2 Credits

Prerequisite: AUM 101

This course covers basic terminology, theory of operation and service of drum and disc brakes, including lathe operation. Knowledge and skill improvements are measured by manipulative and written assessments.

### **AUM 103 Brakes II** 3 Credits

Prerequisite: AUM 102

This course covers complete trouble-shooting and service of automotive braking systems, including drum and disc brakes, complete overhaul and ABS systems. Knowledge and skill improvements are measured by manipulative and written assessments.

### **AUM 104 Suspension I** 2 Credits

Prerequisite: AUM 101

This course covers the theory and operation of the various automotive suspension systems. Identification, terminology and simple repairs are studied. Skills are evidenced by practical application and unit tests. Knowledge and skill improvements are measured by manipulative and written assessments.

### **AUM 105 Suspension II** 3 Credits

Prerequisite: AUM 104

This course trains you to diagnose suspension problems, make repairs and use special tools related to suspension work. Knowledge and skill improvements are measured by manipulative and written assessments.

### **AUM 106 Alignment I** 3 Credits

Prerequisite: AUM 101

This course introduces you to the principles of wheel alignment, tire and wheel service and wheel balancing.

Required adjustments, theory and necessary repairs are included. Knowledge and skill improvements are measured by manipulative and written assessments.

### **AUM 107 Alignment II** 1 Credit

Prerequisite: AUM 106

This course enables you to use 4-wheel alignment equipment, make necessary repairs and adjustments to a vehicle and restore it to factory alignment specifications. Knowledge and skill improvements are measured by manipulative and written assessments.

### **AUM 108 Heating and A/C II** 7 Credits

Prerequisites: AUM 101 & 128

This course studies the theory of operation and defines related terms. It identifies various components and matches them to their function and identifies special tools and equipment. You will be able to recover refrigerant, repair, evacuate, recharge and leak check an automotive air conditioning system. Completion of the federally required certification test is covered as well. Knowledge and skill improvements are measured by manipulative and written assessments.

### **AUM 109 Manual Drive Train I** 3 Credits

Prerequisite: AUM 101

This course covers the theory and operation of drive shafts, CV joints, clutches and manual transmission servicing. You will diagnose, remove, repair drive shafts and FWD drive axles. Terminology of associated parts, clutch servicing (on car) and basic services (on car) are also studied. Knowledge and skill improvements are measured by manipulative and written assessments.

### **AUM 110 Manual Drive Train II** 6 Credits

Prerequisite: AUM 109

This course studies the theory and operation of manual transmissions, transfer cases and differentials. Emphasis on diagnosis, removal and repair of clutches, transmissions, differentials and transfer cases are emphasized. Special tools, tool usage and lifting equipment are also covered. Knowledge and skill improvements are measured by manipulative and written assessments.

### **AUM 114 Automatic Transmission I** 3 Credits

Prerequisite: AUM 101

This course covers the theory of operation, terminology, diagnosis and testing of automatic transmissions. On car repairs, pressure testing and servicing are covered as well. Knowledge and skill improvements are measured by manipulative and written assessments.

### **AUM 115 Automatic Transmission II** 4 Credits

Prerequisite: AUM 114

This course is intended to train you in the techniques used in the rebuilding of automatic transmissions. Use of service manuals is stressed in returning transmissions to serviceable condition. Knowledge and skill improvements are measured by manipulative and written assessments.

### **AUM 118 Tune-Up I** 3 Credits

Prerequisite: AUM 101

This course identifies the components, their operation and terminology related to automotive engine tune-up. Theory of 4-stroke engines, principles of magnetism, spark timing and related tools and test equipment are covered. You will use test equipment to make adjustments and return engine settings to manufacturer specifications. Knowledge and skill improvements are measured by manipulative and written assessments.



## Automotive Tech

### **AUM 119 Tune-Up II**

3 Credits

Prerequisite: AUM 118

This course is a continuation of Tune-Up I. You will learn terminology, operation and repair of electronic ignition systems. Use of test equipment, oscilloscopes, hand-held scanners and other special tools are taught. Knowledge and skill improvements are measured by manipulative and written assessments.

### **AUM 120 Emissions**

2 Credits

Prerequisites: AUM 119 & 126

This course is intended to train you in the theory, diagnosis and repair of emission control systems. Knowledge of ignition and fuel systems is important prior to undertaking this course. You will learn the interaction of different system failures that cause high tailpipe emissions. You will diagnose emissions failures and repair them. Use and calibration of the 4-gas emission analyzer and IM240 testing is covered. Knowledge and skill improvements are measured by manipulative and written assessments.

### **AUM 123 Fuel Systems I**

2 Credits

Prerequisite: AUM 101

This course gives you a basic knowledge in the theory, purpose and operation of fuel delivery systems. Carburetor circuitry, fuel and basic testing procedures are covered as well. Knowledge and skill improvements are measured by manipulative and written assessments.

### **AUM 125 Fuel Systems II**

1 Credit

Prerequisite: AUM 123

This course gives you practical knowledge in diagnosis, disassembly and repair of carburetors. Knowledge and skill improvements are measured by manipulative and written assessments.

### **AUM 126 Fuel Injection**

1 Credit

Prerequisite: AUM 125

This course covers the theory, terminology and operation of various fuel injection systems. GM port fuel injection, and Bosch systems are covered. You will diagnose and test fuel injection systems. Knowledge and skill improvements are measured by manipulative and written assessments.

### **AUM 127 Basic Electrical I**

6 Credits

Prerequisite: AUM 101

This course gives you a basic understanding of automotive electrical systems. Utilizing wiring diagrams, meter use, electrical theory and removal and replacement of electrical components are covered. Testing of starting and charging systems are emphasized. Knowledge and skill improvements are measured by manipulative and written assessments.

### **AUM 131 Basic Engines I**

3 Credits

Prerequisite: AUM 101

This course gives you an introduction to the various engine designs, operating principles and testing procedures. You will learn related terminology, perform diagnostic testing on engine condition and prepare to remove, disassemble and rebuild an engine. Knowledge and skill improvements are measured by manipulative and written assessments.

### **AUM 132 Engine Overhaul II**

5 Credits

Prerequisite: AUM 131

This course gives you advanced knowledge in the procedures used to disassemble, measure, diagnose and reassemble an automotive engine. This is done on engines that belong to the school/college. Various cleaning procedures are covered. Measurement and proper disassembly and reassemble procedures are stressed. Knowledge and skill improvements are measured by manipulative and written assessments.

## **AVIATION TECHNOLOGY**

### **AVI 101 Introduction to Aviation**

3 Credits

This course presents a general study of the aviation field which includes theory of flight, growth and development of aviation through gliders and balloon flights to the modern jets and space age, aviation in today's economy and aviation careers.

### **AVI 102 Private Pilot Ground School**

3 Credits

This course provides the necessary aeronautical knowledge to meet the prerequisites specified for the FAA Private Pilot Written Examination. This course includes basic aerodynamics, airplane systems, air traffic control and communications, weights and balance, meteorology, flight computer and plotter, charts, FAA regulations, basic navigation, radio navigation and physiology of flight.

### **AVI 103 Instrument Ground School**

3 Credits

Prerequisites: AVI 102 or permission of instructor

This course provides you with the necessary aeronautical knowledge to meet the prerequisites specified for the FAA Instrument Pilot Written Examination. This course includes instruments and systems, ILS and Radar Services, IFR pilot's privileges and limitations, weather hazards, weather services, general operating rules and procedures, National Airspace Systems, emergency IFR operations and IFR clearances.

### **AVI 104 Commercial Ground School**

3 Credits

Prerequisites: AVI 102 or permission of instructor

This course provides you with the necessary aeronautical knowledge to meet the prerequisites specified for the FAA Commercial Pilot Written Examination. This course includes commercial applications of weight and balance loading, use of performance charts, complex airplane systems, general operating rules and procedures for operation in national airspace and provisions of FBAR part 135 governing air taxi operations and general considerations for pilot professionalism.

**AVI 106 Meteorology**

3 Credits

This course is an in depth study of basic weather phenomenon. This course includes interpretation and recognition of weather systems, their causes and effects, use of weather charts and forecasts and weather services which support aviation.

**AVI 111 Private Flight**

3 Credits

This course requires you to obtain flight instruction from an approved 141 flight school. An FAA Private Pilot Certificate must be obtained to receive credit for this course. You are responsible for presenting evidence of certification. *Red Rocks Community College does not provide flight training but provides a list of approved 141 flight schools.*

**AVI 112 Instrument Flight**

3 Credits

Prerequisite: AVI 102, 111 or permission of instructor

This course requires you to obtain flight instruction from an approved 141 flight school. An FAA Instrument rating must be obtained to receive credit for this course. You are responsible for presenting evidence of certification. *Red Rocks Community College does not provide flight training but provides a list of approved 141 flight schools.*

**AVI 113 Commercial Flight**

3 Credits

Prerequisite: AVI 104 or permission of instructor

This course requires you to obtain flight instruction from an approved 141 flight school. An FAA Commercial certificate must be obtained to receive credit for this course. You are responsible for presenting evidence of certification. *Red Rocks Community College does not provide flight training but provides a list of approved 141 flight schools.*

**BIOLOGY****BIO 105 Science of Biology**

4 Credits

This course is designed for non-science students. You examine the basis of biology in the modern world and survey the current knowledge and conceptual framework of the discipline. Biology as a science is explored as is the impact of biological science on society. This course includes a lab.

**BIO 111 General College Biology I**

5 Credits

This course examines the fundamental molecular, cellular and genetic principles characterizing plants and animals. Cell structure, function and the metabolic processes of respiration and photosynthesis are included as well as cell reproduction and basic concepts of heredity. This course includes a lab.

**BIO 112 General College Biology II**

5 Credits

Prerequisite: BIO 111

This course is a continuation of BIO 111 and topics include evolution, classification, structure and function in plants and animals and ecology. This course includes a lab.

**BIO 201 Human Anatomy and Physiology I**

4 Credits

Prerequisite: Recent coursework in Biology or Chemistry recommended

This course is an integrated study of the human body in which the histology, anatomy and physiology of each system is covered. The first part of this two semester course includes molecular, cellular and tissue levels of organization; followed by integumentary, skeletal, muscular and nervous systems and senses. A mandatory laboratory component of this course includes microscope work, observations and dissection.

**BIO 203 Human Anatomy and Physiology II**

4 Credits

Prerequisite: BIO 201

This course is an integrated study of the human body in which the histology, anatomy and physiology of each system is covered. The second part of this two- semester course includes study of the following systems: endocrine, cardiovascular with hematology, lymphatic, immune, respiratory, digestive, urinary with fluid and electrolyte balance, and reproductive. A mandatory laboratory component of this course includes microscope work, observations and dissection.

**BIO 205 Microbiology**

4 Credits

Prerequisite: BIO 111 or 201 or permission of the instructor

Corequisite: Laboratory

This course is a survey of the biology of microorganisms. Major topics include microbial diversity, functional anatomy, biochemistry, genetics, ecology and disease. The laboratory experience offers students the opportunity to examine, culture, and identify microbes and to conduct experiments on microorganisms.

**BIO 211 Cellular Biology**

4 Credits

Prerequisite: BIO 111 or permission of instructor

This course introduces the major topics and techniques of modern cell biology. Lecture topics include chemistry of carbohydrates, lipids, proteins and nucleic acids; structure and function of prokaryotic and eukaryotic cells; protein synthesis; biochemistry of cellular respiration; enzymes; cell motility; and cell cycle. The laboratory emphasizes microscopy, cell fractionation, cytochemistry, immunochemistry and gel electrophoresis. The scientific method is emphasized as the approach to problem solving, data collection and analysis. *(Fall only)*

**BIO 212 Molecular Biology**

4 Credits

Prerequisites: BIO 111, 211 or permission of instructor

This course introduces the theory and techniques of modern molecular biology. Lecture topics include DNA/RNA structure and function; DNA replication; gene expression and regulation; and recombinant DNA technology. Both eukaryotic and prokaryotic models are used. The laboratory emphasizes bacteriology, isolation and purification of DNA, cloning with phage and plasmid vectors, restriction enzyme digests and agarose gel electrophoresis. The scientific method is emphasized as the approach to problem solving, data collection and analysis. *(Spring only)*

## **Biology**

### **BIO 225 General Zoology**

5 Credits

Prerequisite: BIO 105, 111 or permission of instructor

Corequisite: Laboratory

This course introduces a variety of zoological topics using a comparative approach to investigate animal structure, physiology, reproduction, development, ecology, evolution, and zoogeography. A survey of zoological diversity emphasizes the characteristics, zoological contributions and classification of animal phyla and major classes. *This course may require some hiking.*

### **BIO 226 Botany**

5 Credits

Prerequisite: BIO 111, 112 or permission of instructor

This course studies both vascular and nonvascular plants. It emphasizes photosynthetic pathways, form and function, reproduction, physiology, genetics, diversity, evolution and ecology. This course also involves laboratory and field experiences. *This course may require some hiking.*

### **BIO 227 Ecology**

4 Credits

Prerequisite: BIO 111, 112 or permission of instructor

This course is a study of the interdependence between organisms and their environments. Topics covered are composition and function of terrestrial and aquatic ecosystems, population biology, pollution and the effects of man on ecosystems. This course includes laboratory and field experiences.

### **BIO 228 Field Biology**

2-3 Credits

Prerequisite: BIO 111, 112 or permission of instructor

Corequisite: GEY 208

This course involves in-depth field studies of natural environments within and outside of Colorado. The course varies from 7-10 days in length. It involves identification of plant and animal organisms as well as an examination of ecological concepts and principles. *This course involves extensive hiking.*

## **BRICKLAYING**

### **BRI 120 Bricklaying for Construction Trades**

3 Credits

This course presents an orientation into the field of bricklaying. It also covers the general principles, initial techniques and skill development for bricklaying and how bricklaying relates to the various trades are presented.

### **BRI 126 Solar Walls and Fireplaces**

3 Credits

Prerequisite: BRI 120

This course teaches trompe wall and solid masonry construction and also Russian fireplace construction that includes basic and special types with emphasis on heatilators and heat exchangers.

### **BRI 211 Fireplace Technology for Solar**

10 Credits

This course covers fireplace codes and construction of new energy fireplaces.

## **BUSINESS**

### **BUS 110 Mathematics of Business/ Personal Finance**

3 Credits

Prerequisite: Minimum of high school algebra or equivalent

This course emphasizes the development and understanding of concepts regarding various business applications. You learn mathematical problem solving in the areas of merchandising, financial accounting, general business and personal finance.

### **BUS 115 Introduction to Business**

3 Credits

This course is a survey of the operation of the American business system including the fundamentals of the economy, careers and opportunities, marketing, management, production, governmental regulations, tools of business and social responsibilities.

### **BUS 216 Legal Environment of Business**

4 Credits

This course explores the government regulation of business. The course discusses the origins, development and sources of law. The legal system (legislature, courts, administrative agencies, etc.) is described, emphasizing the areas relating to the regulation of business. This course corresponds to public law affecting business, not traditional private law. This law concerns matters with which a business manager must deal including government, stockholders, competitors, employees and the public. This course also discusses contract law.

### **BUS 217 Business Communications and Report Writing**

3 Credits

Prerequisite: A minimum of 3 credit hours of a 100 level English course or equivalent.

This course emphasizes effective business writing including letters, memoranda, reports, application letters and resumes. The fundamentals of business communication and international communication is introduced.

### **BUS 218 Commercial Law**

4 Credits

This course explores the legal system and how it applies to business and the consumer. It includes an in-depth study of the UCC (Uniform Commercial Code) as it applies to the sale of goods, secured transactions and commercial paper. The fundamental concepts of real property and the law of bankruptcy are also covered.

### **BUS 221 Business Law I**

3 Credits

This course introduces business law including, but not restricted to, such topics as foundations of the legal system, contracts, sales (UCC), agency and property (real and personal).

### **BUS 226 Business Statistics**

3 Credits

Prerequisite: MAT 105 or permission of instructor

This course is intended for business majors and covers statistical study, descriptive statistics, probability and the binomial distribution, index numbers, time series, decision theory, confidence intervals, hypothesis testing, testing of two-sample means, chi-square and ANOVA, linear regression and correlation.

**BUSINESS  
TECHNOLOGY****BTE 100 Touch Keyboarding**

2 Credits

Corequisite: Computer Lab

This course is an introduction to touch keyboarding as well as basic operations and functions of PC equipment. This course emphasizes learning the alphanumeric keyboard, proper technique, and speed and control. This course is designed for those who have minimal or no keyboarding skills.

**BTE 102 Keyboarding Applications**

3 Credits

Prerequisite: Minimum typing speed of 30 wpm

Corequisite: Computer Lab

This course is designed for those with keyboarding skills. Letters, tables, memos and reports are introduced. Production and formatting of documents using PCs are stressed. Speed and accuracy are also emphasized.

**BTE 103 Keyboarding Skillbuilding I**

3 Credits

Prerequisite: Minimum typing speed of 20 wpm

Corequisite: Computer Lab

This course is designed to increase speed and improve accuracy in keyboarding on the PC through the use of proper techniques and concentrated effort.

**BTE 104 Keyboarding Skillbuilding II**

3 Credits

Prerequisite: BTE 103

Corequisite: Computer Lab

This is a skill-building course designed to increase speed and improve accuracy in keyboarding on the PC through the use of proper techniques and concentrated effort.

**BTE 106 Ten-Key Keyboarding**

1 Credit

This course provides speed and accuracy drills by touch using proper techniques on the ten-key calculator and includes the four functions of addition, subtraction, multiplication and division.

**BTE 108 Ten-Key by Touch  
(PC 10-Key Pad)**

1 Credit

Corequisite: Computer Lab

This course introduces touch control of a ten-key pad. This course emphasizes the development of speed and accuracy using proper techniques.

**BTE 115 Data Entry I**

3 Credits

Prerequisites: Keyboarding skills; CIS 118

Corequisite: Computer Lab

This course is designed to develop data-entry skills on the PC using computer software. This course also reviews DOS and Windows commands.

**BTE 125 Procedures for Workplace 2000**

3 Credits

Pre-corequisite: BTE 100

This course focuses on the knowledge and skills necessary for successful employment in the business field. Topics include communication skills, human relations, business ethics and professional growth.

**BTE 135 Office Correspondence**

3 Credits

Prerequisite: BTE 100 or equivalent

This course teaches language arts through the use of written communications. Emphasis is on grammar, spelling, formatting, proof-reading and editing of business documents. Assignments in verbal communications for the office such as listening and self-expression.

**BTE 140 Medical Office I**

4 Credits

This course is designed specifically for the medical office. It introduces you to career opportunities and professional growth in the medical office. This course includes reception and telephone management, appointment coordination, medical law and ethics, patient record management and patient communication.

**BTE 141 Medical Office II**

4 Credits

Prerequisite: BTE 140 or equivalent

Pre-corequisite: BTE 102 or equivalent

This course is designed specifically for the medical office and includes pegboard accounting, payroll and banking procedures as well as credit and collections. A review of basic mathematics accompanies the accounting unit. It also includes a review of office correspondence as it pertains to the medical office.

**BTE 142 Medical Transcription**

2 Credits

Prerequisite: HEO 100 and CIS 125 or equivalent

Corequisite: Computer Lab

This course provides instruction in the use of transcription equipment and the transcribing of medical reports, operative reports, discharge summaries, x-ray reports, etc. that are used in a hospital or clinic setting.

**BTE 161 Filing and Records  
Management**

2 Credits

This course provides instruction in alphabetic, numeric, subject, chronologic and geographic systems of filing. This course also covers principles, organization and procedures for records management.

**BTE 162 Electronic Filing I**

3 Credits

Prerequisites: CIS 118 and BTE 100 or equivalent

Corequisite: Computer Lab

This course provides exercises and application problems that review and enhance the fundamental concepts of database management tasks. You design and create a database, edit data, organize data in various ways, search for particular data, and design custom data-entry reports and labels.

**BTE 206 Coding/Health Insurance  
Methods and Claims**

4 Credits

Prerequisite: HEO 100 or HEO 104

This course is designed to instruct you in understanding general types of health insurance plans on the market, methods of payment, common insurance terms, benefits and limitations of government sponsored and mandated insurance plans. ICD-9, CPT-4 and HCPC coding is discussed as well as filing claims with carriers for reimbursement.

## **Business Technology**

### **BTE 208 Legal Terminology**

3 Credits

Corequisite: BTE 209

This course studies characteristic terms used in the legal profession, including spelling, pronouncing and interpreting how legal terms relate to the various fundamentals of the legal system. It introduces the structure of the court system, judicial documentation, legal ethics and standard procedures followed in legal offices.

### **BTE 209 Legal Research**

3 Credits

Corequisite: BTE 208

This course is designed to provide the knowledge necessary to locate and interpret information including statutes and ordinances within federal, state and local legal publications, through the use of law libraries and other sources of legal material. Emphasis is placed on disseminating legal research through oral and written communication, incorporating legal terminology and style, grammar, proofreading and editing.

### **BTE 220 Machine Transcription**

3 Credits

Prerequisites: BTE 102 and 135 or equivalent

Corequisite: Computer Lab

This course provides instruction in the use of transcribing equipment and established formatting procedures in the production of mailable business documents. A review of English grammar, punctuation, capitalization, abbreviation, numbers and spelling is provided.

### **BTE 297 Cooperative Education/Internship**

3 Credits

Prerequisite: Permission of instructor

This course allows students to gain work experience from on-the-job training.

## **CARPENTRY**

*(Also see Fine Woodworking)*

*Most courses have no prerequisites and prior experience is not required.*

### **CAR 107 Site Preparation**

1-4 Credits

This course covers site characteristics including governmental and utilities regulation, plot plans, leveling tools, site selection, preparation and layout.

### **CAR 108 Foundation Systems**

1-4 Credits

This course explores the different types of foundations utilized in construction, perimeter drainage, estimating materials, steel reinforcement, precast construction and forming techniques.

### **CAR 109 Floor Framing**

1-4 Credits

This course presents types of wood framing, structural spans and loading, girders and beams, sills, estimation, subflooring, joist connections, openings and special framing situations.

### **CAR 110 Wall Framing**

1-4 Credits

This course teaches exterior wall layout, assembly, erection, bracing, estimation, sheathing and partition construction.

### **CAR 111 Roof Framing**

1-4 Credits

This course covers roof styles, terminology, rafters, trusses, roof sheathing, ceiling joists, layout and estimation and construction.

### **CAR 112 Stair Framing**

1-4 Credits

This course covers stair design, estimation, layout and construction for a variety of different stair types.

### **CAR 113 Framing Labs**

1-8 Credits

Prerequisites: CAR 109, 110, 111 or 112 and permission of instructor

This course covers construction of a variety of different structural frameworks of various complexities. Timber frames, domes, A-frame and log structures may be explained as well as specific framing problems such as different building shapes and unusual construction variations.

### **CAR 114 Formwork Lab**

1-8 Credits

Prerequisites: CAR 108 and permission of instructor

This course covers construction of a great variety of form types; floating forms, edge forms on grade, wall forms, on grade curb forms, vertical piers and columns, horizontal beam forms, above grade slabs systems, fire-proof encasement forms, stair forms, bridge deck forms and specialty forms.

### **CAR 150 Construction Materials**

5 Credits

This course examines the qualities, uses and characteristics of wood, building materials, lumber grading and defects of hard and soft woods, estimating ordering, pricing, fasteners, adhesives, manufactured wood products, steels, vinyls and aluminum and their applications in construction process.

### **CAR 152 Tools: Hand and Power, Portable and Stationary**

4 Credits

This course covers the safe use and care of hand and power, portable and stationary tools. Through tool utilization skills are developed to pass competency and safety tests for each tool.

### **CAR 200 Exterior Trim**

1-4 Credits

This course teaches cornice and rake construction, corner, window and door trim, installation of soffit, frieze, fascia and similar trim items and includes estimation and proper selection.

### **CAR 201 Commercial Roofing Project**

1-8 Credits

Prerequisite: Permission of instructor

This course teaches the different varieties of commercial roofing products, their installation, estimation and maintenance.

### **CAR 202 Exterior Finishes Lab**

1-8 Credits

Prerequisites: CAR 200, 205, 206 or 207 and permission of instructor

This course teaches the selection, construction and estimation of a variety of exterior finishes on all portions of a building exterior, including some unique Colorado finishes. Renovation, remodeling and energy rehab may be explored.

### **CAR 203 Finishes and Refinishing**

1-4 Credits

This course examines finishes on buildings (interior and exterior) and new and renovated furnishings.

### **CAR 205 Exterior Doors and Windows**

1-4 Credits

This course covers types of doors, operating and fixed windows, skylights, glazing methods, installation, estimation and construction. This course also includes discussion of chimneys, fireplaces and wood stoves.

### **CAR 206 Exterior Wall Coverings**

1-4 Credits

This course covers all manner of materials utilized as exterior vertical finishes and their installation and estimating including thermal and sound insulation, vapor and fire barriers, siding types and methodologies.

### **CAR 207 Roof Coverings**

1-4 Credits

This course covers application techniques and estimation of asphalt and wood roofing products and accessories including gutters and flashing.

### **CAR 208 Interior Finishes**

1-4 Credits

This course covers interior trim materials including baseboard, casing, paneling, interior doors and shelving. This course also discusses drywall hanging, finishing and texturing, ceiling tile, suspended ceilings, plastering, finish flooring, hardware, railings, door hanging and estimation.

### **CAR 209 Cabinetmaking**

1-4 Credits

This course covers cabinet types, kitchen and cabinet design, layout, construction, hardware installation, materials, power tool use, accessories and estimation.

### **CAR 211 Shop Carpentry**

1-8 Credits

Prerequisite: Permission of instructor

This course is for the non-site, shop carpenter and includes jig and patternmaking; stationary power tool maintenance and adjustment; machining of woods; and techniques unique to shops, cabinetmakers and millworkers.

### **CAR 213 Furniture Making**

1-4 Credits

This course teaches furniture design, construction techniques, material selection, joinery, bending, laminating, veneerwork and casework details.

### **CAR 215 Cabinet Installation, Countertops and Built-Ins**

1-4 Credits

This course covers the selection and installation of factory built cabinets, countertops, built-ins and terminology, types, design, estimation and construction.

### **CAR 216 Drywall Construction**

1-4 Credits

This course covers the use of gypsum wall board and the techniques of concealing joints and fasteners, construction methods, estimation and a variety of texture finishes.

### **CAR 217 Advanced Cabinetmaking**

1-8 Credits

This course expands skills taught in CAR 209. It includes a review of the types of joints, gluing and hardware used in cabinets. It also familiarizes you with various types/designs of cabinets used in residential/commercial construction. Construction of shop-built cabinets including a variety of door styles and the proper use of power tools for creating various designs. The uses and application of plastic laminates are explored and you learn the proper installation of shop-built cabinets.

### **CAR 218 Commercial and Tenant Finishes**

1-4 Credits

This course deals with dropped ceilings, steel stud partitions, estimating, scheduling and the interrelations of the mechanical trades associated in most commercial, retail and other leased spaces.

### **CAR 220 Remodeling, Renovation and Additions**

1-4 Credits

This course covers conversions of attic and basement spaces to usable living spaces and additions or renovation to existing structures, including kitchens and baths. Materials scheduling, estimation and construction methods are investigated.

### **CAR 221 Building Maintenance**

1-4 Credits

This course examines the maintenance of homes, apartments and commercial buildings—from the handyman to building superintendent, from fences and roofing repairs to plumbing and heating maintenance. This course enables you to be aware of what to expect in keeping buildings operating.

### **CAR 223 Owner-Built Homes and Owner Contracting**

1-5 Credits

This course explores the areas of the owners/builders making a home for themselves from inception to certificate of occupancy, owner-built or the owner as a builder and selecting contractors to perform the actual construction. The problems and common pitfalls of the owner-built home are also examined.

### **CAR 224 Contracting and the Construction Business**

1-5 Credits

This course is for those of you entering and/or those already in the construction industry and desire to know what it entails. Job costing, overhead, insurance, when to subcontract, maintaining your own crews, cost estimation, bidding, contracts and liability are examined.

### **CAR 225 Building Codes, Permits, Inspection, Compliance and Variances**

1-5 Credits

This course covers the governmental regulations concerning building and the process through which these regulations are enforced including whom to talk to, what to do, when to do the inspection process, how to obtain a building permit and the process of securing a variance.

### **CAR 226 Contractor Licensing**

1-5 Credits

This course prepares you to take the contractor's license exam in their municipality.

### **CAR 227 Construction Coordination**

1-5 Credits

This course covers the non-trade aspects of a construction project. Time, cost and labor management as well as construction techniques are included.

## **Carpentry**

### **CAR 228 Cost Estimation**

1-5 Credits

This course examines each type of estimating and provides an opportunity to enhance and utilize these methods. Ball parking, unit costing, stick counts and computerized estimating tools are also explored.

### **CAR 229 Contractors' and Builders' Seminar**

1-4 Credits

This course reviews current techniques, materials and problems experienced by those working as competitors.

### **CAR 230 Construction Techniques for More Effective Building**

1-4 Credits

This course explores the new materials and techniques that allow for more effective use of space, energy and materials. From foundations through finishes there are a wide assortment of innovations available to the home owner, builder and remodeler that benefit any building project.

### **CAR 231 Highway and Bridge Construction**

1-4 Credits

This course concerns highway construction, terminology, methods and standard practice. Heavy construction estimation procedures, scheduling organization and equipment are examined.

### **CAR 232 Carpentry Lab**

1-8 Credits

Prerequisite: Permission of instructor

This course allows you to specialize in a chosen area of study requiring a written proposal, plans and specifications with a particular construction project as an outcome.

### **CAR 233 Technical Project for a Specialty Trade**

1-8 Credits

Prerequisite: Permission of instructor

This course requires you to make a written proposal to explore an area of construction through research and a project. An example of a topic might be finish flooring with projects that resulted in installing ceramic tile, several types of carpet, sheet goods and wood strip and parquet floorings. Upholstery, plaster covering, log cabin construction, round windows, wood carving might all be appropriate projects.

## **CHEMISTRY**

### **CHE 101 Introduction to Chemistry I**

5 Credits

Prerequisite: Algebra or permission of instructor

This course is for non-science majors, those in occupational and health programs or those lacking any chemistry background. It includes measurements, atomic theory, chemical bondings, nomenclature, stoichiometry, solutions, acid and base, gas laws and condensed states. Laboratory experiments demonstrate the above concepts qualitatively and quantitatively.

### **CHE 102 Introduction to Chemistry II**

5 Credits

Prerequisite: CHE 101 or permission of instructor

This course includes hybridization of atomic orbitals for carbon; nomenclature of organic compounds; properties of different functional groups; nomenclature of various biologically important compounds, their properties and their biological pathways.

Laboratory experiments demonstrate the above concepts qualitatively and quantitatively.

### **CHE 111 General College Chemistry I**

5 Credits

Prerequisite: One year of high school chemistry or equivalent

Corequisite: MAT 121 or permission of instructor

This course is for science and engineering majors. It includes the study of measurements, atomic theory, chemical bonding, stoichiometry, gases, condensed states, solutions and thermochemistry. It also includes the problem solving skills and descriptive contents for these topics. Laboratory techniques used in the experiments demonstrate the above concepts as well as the qualitative and quantitative analytical techniques involved in chemistry.

### **CHE 112 General College Chemistry II**

5 Credits

Prerequisite: CHE 111

This course studies of thermodynamics, chemical kinetics, chemical equilibrium, acid-base equilibrium, ionic equilibrium, electrochemistry, nuclear chemistry and organic chemistry. It also includes the problem solving skills and descriptive contents for these topics. Organic chemistry may be included if time permits. The lab experiments demonstrate both the qualitative and quantitative analytical techniques.

### **CHE 211 Organic Chemistry I**

5 Credits

Prerequisite: CHE 112

This course covers structure and reactions of aliphatic hydrocarbons and selected functional group families. Nomenclature of organic compounds, stereochemistry, reaction mechanisms are also covered. Laboratory demonstrates the above concepts and techniques.

### **CHE 212 Organic Chemistry II**

5 Credits

Prerequisite: CHE 211

This course covers structure, reactions and reaction mechanisms of aromatic compounds and continuation of functional group families from CHE 211. The chemistry of heterocycles and biologically related compounds is introduced if time permits. Laboratory demonstrates the above concepts and laboratory techniques.

## COMMERCIAL FOOD SERVICE MANAGEMENT

### RTA 101 Restaurant Arts I

12 Credits

This is a first semester course which must be completed at Warren Tech. This course covers basic cooking skills which you then apply to the operation of the Warren Tech Coffee Shop and Gourmet Dining Room. You also gain experience in serving the dining public.

### RTA 102 Restaurant Arts II

12 Credits

This is a second semester course which must be completed at Warren Tech. This course consists of three credits in quality food production, which include food preparation and the principles of food handling and storage and three credits in line cooking and table service, which provides training in coffee house and dining room table service as well as customer service. Both courses provide you with practical experience.

## COMMUNICATION

### COM 125 Communication in the Workplace

3 Credits

This course focuses on professional relationships and communication in the workplace by examining topics like self-expression, assertiveness, active listening, negotiation and ethics. Through written and oral expression, you demonstrate understanding of critical thinking, the uses of language and relevant communication theory.

### COM 181 Sign Language I

3 Credits

This course gives you basic conversational sign language skills and a knowledge of deaf culture.

### COM 182 Sign Language II

3 Credits

Prerequisite: COM 181 or permission of instructor

This course gives you advanced conversational sign language skills and a knowledge of deaf culture.

## COMPUTER INFORMATION SYSTEMS

*Many of these courses require concurrent enrollment in computer lab sections.*

### CIS Computer Lab

1/3 -1 Credit per course

Many computer courses have a lab accompanying them. You must register for the accompanying lab section to their computer course(s). Computer courses having an accompanying lab are designated with a corequisite of lab.

### CIS 095 Computers and You

3 Credits

Corequisite: Computer lab

This course familiarizes you with the computer and its application in today's home. You work with the computer using prewritten programs and learn the basics of the logic used in programming a computer. Applications covered include money and resource management, consumer affairs and the use of computers for entertainment.

### CIS 110 Introduction to Microcomputer Operating Systems (DOS)

1 Credit

Corequisite: Computer Lab

This course studies concepts, terminology and skills in the use of an operating system. It emphasizes understanding and using an operating system in a practical way in order to complement the student's use of application software on the microcomputer.

### CIS 111 Advanced Microcomputer Operating Systems (DOS)

1 Credit

Prerequisite: CIS 110 is suggested

Corequisite: Computer Lab

This course expands the student's knowledge from CIS 110. Advanced features of the microcomputer operating system commands and application of these features to create an efficient environment for microcomputer operations are covered.

### CIS 113 Introduction to the Macintosh Computer

2 Credits

Corequisite: Computer Lab

This course introduces the use and operation of the Macintosh computer. You are introduced to various Macintosh configurations as well as hands on usage of the system and applications.

### CIS 115 Introduction to Computers

4 Credits

Corequisites: Computer Lab; CIS 116 is recommended

This course is an overview of the needs for and roles of computer information systems. It emphasizes computer requirements in organizations, history, hardware functions, programming, systems development and computer operations. Computer applications and programming are introduced.

### CIS 116 Logic and Program Design

3 Credits

Corequisite: CIS 115 is recommended

This course introduces the development of computer program design using the concepts of structured programming and logic. Pseudo-code, IPO charts, flowcharts, decision tables, Warnier and HIPO are some of the vehicles used in developing logic designs.

### CIS 117 Web Page Essentials

3 Credits

Prerequisite: CIS 115 is recommended

Corequisite: Computer Lab

This course is an introduction to the development of Web page essentials using the logical structured approach. Text, cross-platform calibration issues, JPEGs, GIFs, displays, hot images, data tables and quick-time requirements are some of the vehicles that are discussed and used for developing Web pages.

### CIS 118 Microcomputer Applications

4 Credits

Corequisite: Computer Lab

This course reviews standard software packages available to support a microcomputer-based work station. Included are descriptions of and hands-on work with word processors, spreadsheets, file and database management systems and other common application packages.

*This course is equivalent to taking CIS 120, CIS 138, CIS 140 and CIS 150.*



# Computer Information Systems

## **CIS 119 Intermediate and Advanced Microcomputer Applications**

4 Credits

Prerequisite: CIS 118 or 120, 138, 140 and 150

Corequisite: Computer Lab

This course addresses intermediate and advanced topics in microcomputer applications. This course provides hands-on work with word processing, spreadsheet and database software. Word processing topics include hyphenation, columns, formats, document design, specialty layouts, macros and graphics. Spreadsheet topics include graphics, database features, macros and "what-if" analysis. Database topics include creating custom screen forms, reports and database programming. *This course is equivalent to taking CIS 121, CIS 122, CIS 141, CIS 142, CIS 151 and CIS 152 separately.*

## **CIS 120 Introduction To Word Processing**

1 Credit

Prerequisite: CIS 138 or a working knowledge of Windows

Corequisite: Computer Lab

This course uses state-of-the-art software to study the features of word processors including types, strengths and weaknesses, keyboard skills, creating, editing, formatting and printing documents. *If you have taken CIS 118, you should not take this course.*

## **CIS 121 Intermediate Word Processing**

1 Credit

Prerequisite: CIS 120

Corequisite: Computer Lab

This course continues to build on word processing skills learned in the introductory course. You practice hands-on exercise skills such as hyphenation and columns, format layout, document design and graphics.

## **CIS 122 Advanced Word Processing**

1 Credit

Prerequisite: CIS 121

Corequisite: Computer Lab

This course builds on word processing skills learned in the intermediate course. You practice hands-on exercise skills such as mail merge, columns, tables and graphics.

## **CIS 125 Word Processing**

3 Credits

Prerequisite: CIS 138 or a working knowledge of Windows

Corequisite: Computer Lab

This course uses state-of-the-art software to study the features of word processors including types, strengths and weaknesses, keyboard skills, creating, editing, formatting and printing documents. You practice hands-on exercise skills such as hyphenation, columns, format layout, document design and graphics. *This course is the equivalent of CIS 120, CIS 121 and CIS 122 taken separately.*

## **CIS 135 Graphics Technology**

3 Credits

Prerequisite: CIS 138 or a working knowledge of Windows

Corequisite: Computer Lab

This course is a lecture/hands-on course that introduces the concepts and techniques of computer graphics technology. You use paint programs, computer art, scanners and desktop publishing software.

## **CIS 136 Presentation Graphics**

3 Credits

Prerequisite: CIS 138 or a working knowledge of Windows

Corequisite: Computer Lab

This course focuses on the development of presentation graphics materials including graphs, charts, illustrations and diagrams. Emphasis is on effective communication.

## **CIS 137 Desktop Publishing**

3 Credits

Prerequisite: CIS 138 or a working knowledge of Windows

Corequisite: Computer Lab

This course is a hands-on course that introduces the concepts and techniques of desktop publishing. You learn how to merge text and graphics files to create flyers, brochures and newsletters.

## **CIS 138 Introduction to MS Windows**

1 Credit

Corequisite: Computer Lab

This course introduces you to the basics of Microsoft Windows. This course covers installing, configuring and modifying the Windows operating system in a DOS environment. Topics covered include hardware and software considerations and compatibility issues.

## **CIS 139 Advanced Microsoft Windows**

1 Credit

Prerequisite: CIS 138

Corequisite: Computer Lab

This course explores advanced topics in Microsoft Windows. The course covers topics for power users such as networking, creating individual user setups, disk management, troubleshooting, communications, adding/removing hardware/software, and the DOS environment.

## **CIS 140 Introduction to Microcomputer Database**

1 Credit

Prerequisite: CIS 138 or a working knowledge of Windows

Corequisite: Computer Lab

This course introduces the functions of a database. It includes skills such as file creation, searches, sorts, simple editing and indexing. *If you have taken CIS 118, you should not take this course.*

## **CIS 141 Intermediate Microcomputer Database**

1 Credit

Prerequisite: CIS 140

Corequisite: Computer Lab

This course builds on skills learned in CIS 140. You practice through hands-on exercise skills such as report writing and command languages.

## **CIS 142 Advanced Microcomputer Database**

1 Credit

Prerequisite: CIS 141

Corequisite: Computer Lab

This course introduces database programming, problem solving and interfacing with other packages.

## **CIS 143 Microcomputer Database (Paradox: Object PAL)**

3 Credits

Prerequisite: CIS 142 or 145

Corequisite: Computer Lab

This course covers the skills, terms and concepts of using the Object PAL programming language to customize and enhance applications that were created using the interactive level of Paradox for Windows.

## **CIS 145 Microcomputer Database**

3 Credits

Prerequisite: CIS 138 or a working knowledge of Windows

Corequisite: Computer Lab

This course introduces the functions of a database. It includes skills such as file creation, searches, sorts, simple editing and indexing, report writing, command languages, programming, problem solving and interfacing with other packages. *This course is the equivalent of CIS 140, CIS 141 and CIS 142 taken separately.*

## **CIS 150 Introduction To Electronic Spreadsheets**

2 Credits

Prerequisite: CIS 138 or a working knowledge of Windows

Corequisite: Computer Lab

This course gives you a working knowledge of an electronic spreadsheet. It covers fundamental spreadsheet concepts and design, formatting and calculations. *If you have taken CIS 118, you should not take this course.*

## **CIS 151 Intermediate Electronic Spreadsheets**

1 Credit

Prerequisite: CIS 150

Corequisite: Computer Lab

This course continues to build on spreadsheet skills learned in CIS 150. You practice through hands-on exercises such as design and report writing.

## **CIS 152 Advanced Electronic Spreadsheets**

1 Credit

Prerequisite: CIS 151

Corequisite: Computer Lab

This course presents the development and execution of macros to automate the spreadsheet, menu driven macros, "what if" tables, advanced functions/commands for using a statistical database and formatting output are covered.

## **CIS 155 Electronic Spreadsheets**

3 Credits

Prerequisite: CIS 138 or a working knowledge of Windows

Corequisite: Computer Lab

This course gives you a working knowledge of an electronic spreadsheet. It covers spreadsheet concepts, design, formatting, calculations, report writing, the development and execution of macros to automate the spreadsheet, menu driven macros, "what if" tables, advanced functions and commands for using a statistical database and formatting output are covered. *This course is the equivalent of CIS 150, CIS 151 and CIS 152 taken separately.*

## **CIS 160 BASIC Language Programming**

3 Credits

Prerequisite: CIS 116

Corequisite: Computer Lab

This is an introductory course using the BASIC programming language. Topics include program design, input/output, loop control, string manipulation and array and matrix processing.

## **CIS 161 Advanced BASIC Language Programming**

3 Credits

Prerequisite: CIS 160

Corequisite: Computer Lab

This course studies advanced programming concepts and techniques using the BASIC programming language. Topics include user defined functions, subroutines, data editing and error handling, sequential and random access files and batch and interactive processing. Some sound and graphic functions may be covered.

## **CIS 165 RPG Programming**

3 Credits

Prerequisite: CIS 116

Corequisite: Computer Lab

This course enables you to become proficient in pro-gramming with the Report Program Generator language. Topics such as form specifications, arithmetic calculations, comparisons, single and multiple control breaks, headings, fetch overflow, arrays and tables, matching records and file updating are covered.

## **CIS 175 UNIX**

3 Credits

Prerequisites: CIS 115 and one programming language

Corequisite: Computer lab

This course covers the structure and fundamentals of the UNIX operating system. Topics include the files system and file processing, various utility programs and shell, multi-user operation, memory management, text processing and communications.

## **CIS 176 Advanced UNIX**

3 Credits

Prerequisite: CIS 175

Corequisite: Computer Lab

This course continues building upon the skills and commands covered in CIS 175. This course emphasizes advanced shell scripting topics including utilizing pipelines, filters, grep, awk and file processing.

## **CIS 177 UNIX Systems Administration**

3 Credits

Prerequisites: CIS 175

Corequisite: Computer Lab

This course covers the fundamental and essential tasks of administering and managing a UNIX system. Topics include startup/shutdown procedures, managing devices, managing users, checking and managing the file system and managing local and remote terminals.

## **CIS 180 Introduction to Multimedia**

3 Credits

This course introduces you to the concepts and design in multimedia and computer-based training.

## **CIS 181 Multimedia Software Modeling Development**

3 Credits

Prerequisite: CIS 180

Corequisites: Computer lab, CIS 182 and CIS 183 suggested

This course introduces the basic tools and techniques of multimedia modeling and animation. The course contains topics on using tool palettes, interacting with a model, views/perspectives, text objects and freeform/surface editing.

# Computer Information Systems

## **CIS 182 Multimedia Software Authorship**

3 Credits

Prerequisite: CIS 180

Corequisites: Computer lab, CIS 181 and CIS 183 suggested

This course introduces the basic tools and techniques of multimedia authorship. The course includes such topics as using functions with movable objects, paging with interactive decision and data collection

## **CIS 183 Multimedia Software Design/Development**

3 Credits

Prerequisite: CIS 180

Corequisites: Computer lab, CIS 181 and CIS 182 suggested

This course introduces the development of a project through the use of a lingo language. Topics include parent scripts and child objects; development of a production; special effects; color cycling and color theory; interactive objects; and perpetual interactions and movable objects.

## **CIS 184 Image Editing (Adobe Photoshop)**

4 Credits

Corequisite: Computer Lab

This course provides an introduction to digital graphics prepress. The course emphasizes image processing and special effects. Chemical free darkroom and illustration techniques are studied along with graphics/ text integration.

## **CIS 187 Introduction to the Internet**

1 Credit

Corequisite: Computer Lab

This course introduces the Internet, the global network of computer networks. The Internet's resources and tools are explored. Topics include history, topology, e-mail, LIST-SERV, TELNET, FTP, GOPHERS and WWW.

## **CIS 188 HTML Scripting**

1-4 Credits

Corequisite: CIS 187 is recommended

This course is an introduction to HTML, URLs, CGI interface, to the design and preparation of resources for delivery via the World Wide Web (WWW). You write simple HTML documents and view them with a WWW browser such as Mosaic, Netscape, or lynx.

## **CIS 189 VRML (Virtual Reality Modeling Language)**

2 Credits

Prerequisite: CIS 187 and CIS 188 are recommended

Corequisite: Computer Lab

This course is intended for the those who may not have advanced skills in Web development. Topics include the VRML document, linkages or anchors to other Web documents, objects and distribution.

## **CIS 205 Information Systems Security Management**

3 Credits

This course introduces the world of information systems security. Topics include the laws and history of computer security, overview of systems and communications, how to value information the cost/benefit of security design, loss prevention and how to develop a Disaster Recovery Plan.

## **CIS 206 Communicating Technical Concepts**

3 Credits

This course introduces a variety of concepts and techniques that are useful in communicating technical concepts to both technical and non-technical personnel in an organization. Organizational dynamics and techniques for individual and group communications are covered. It is recommended that this course be taken later in the program so that the student has the necessary technical skills and background from prior course work.

## **CIS 208 Automated Project Management**

3 Credits

Prerequisite: CIS 138 or prior experience with Windows applications

This course provides an in-depth exploration of project management techniques. The course emphasizes management strategies, goal setting, communication, tracking and reporting. Critical thinking, discussion and real-world projects are used as tools to explore the creation of task lists; resource management and leveling; use of milestones; Critical Path Methodology; PERT; and communications with team members, vendors, management and users. Real-world projects are also used to explore software to automate project management processes.

## **CIS 240 4GL Programming**

3 Credits

Prerequisite: CIS 115

Corequisites: Computer Lab, CIS 116 is recommended

This course is an introduction to programming in a Fourth Generation Language. It covers design tools and concepts associated with a specific Fourth Generation Language. Topics include specifics of the language, its use and practical application in a programming environment. You write several programs in the language that is currently available.

## **CIS 241 Advanced 4GL Programming**

3 Credits

Prerequisite: CIS 240

Corequisite: Computer Lab

This course builds on the skills developed in CIS 240. You write more complex programs in the language that is currently available.

## **CIS 245 Database Management Systems**

3 Credits

Prerequisite: CIS 115 and (CIS 118 or CIS 140 or CIS 145)

Corequisite: Computer Lab

This course introduces the principles of database concepts. It includes relational, hierarchial and network database structure, query commands and command level programs. You examine current issues including model selection, usage, implementations and maintenance. (*Offered spring semester only.*)

## **CIS 250 Local Area Networks (LAN)**

2 Credits

Corequisite: CIS 115

This course discusses how local area networks are used and when they are appropriate. Topics include hardware and software, alternatives, compatibility issues, network configurations, security issues, transmission media and methods and linking to mainframe.

## **CIS 251 Local Area Network Administration**

3 Credits

Prerequisites: CIS 110 and CIS 250

Corequisite: Computer Lab

This course introduces the concepts and techniques of administering a Local Area Network. Topics include setting up users/groups, directory structures, writing login scripts/ menus and network printer control.

## **CIS 252 Multi-Vendor Networking**

3 Credits

Prerequisites: CIS 110 and CIS 250

This course provides the practical information and guidance you need to plan and implement effective multi-vendor networks. This course allows one to evaluate inter-networking solutions for a wide range of PC, mini-computer, workstation and mainframe environments.

## **CIS 253 LAN Service and Support**

3 Credits

Prerequisites: CIS 110 and CIS 250

Corequisite: CIS 251 and Computer Lab

This course introduces the concepts and techniques of servicing a Local Area Network. Topics include installing network interface cards, memory and storage devices; when to use bridges and routers, trouble shooting and diagnostics software.

## **CIS 254 Advanced LAN Administration**

3 Credits

Prerequisites: CIS 251 and CIS 110 and a firm working knowledge of DOS

Corequisite: Computer Lab

This course is a continuation of CIS 251. Topics include advanced printing features, workstation shell generation and custom features, performance management techniques, file server commands, advanced utilities for setting up users, advanced supervisor utilities and network tracking to control user access. In addition, third-party utilities currently available to enhance network administration is reviewed.

## **CIS 260 COBOL Programming**

3 Credits

Prerequisites: CIS 115 and CIS 116

Corequisite: Computer Lab

This is a computer programming course in which the major elements of the COBOL language are taught. You design, code, debug and document solutions to a variety of business-oriented problems.

## **CIS 261 Advanced COBOL Programming**

3 Credits

Prerequisite: CIS 260

Corequisite: Computer Lab

This course is a continuation of CIS 260. Emphasis is placed on teaching you the more sophisticated capabilities of COBOL, including the SORT verb and advanced table and file concepts.

## **CIS 263 CICS/COBOL Programming**

3 Credits

Prerequisite: Any programming language other than BASIC or permission of instructor.

Corequisite: Computer Lab

This course introduces the basics of CICS Command Level Programming. Topics include an overview of what a CICS online system actually does, what the CICS language provides, terminal device concepts, programming techniques for mapping the terminal screen and programming techniques.

## **CIS 264 Advanced CICS/COBOL**

3 Credits

Prerequisite: CIS 263

Corequisite: Computer Lab

This course introduces advanced concepts of CICS Command Level Programming. Topics include a review of CICS concepts, indexed files, VSAM, advanced mapping support, accessing DL/I segments from a CICS program, intersystem communication and multiregion operation.

## **CIS 265 IBM Assembly Language Programming**

3 Credits

Prerequisites: Any programming language other than BASIC or permission of the instructor and MAT 121

Corequisite: Computer Lab

This course teaches the IBM System 370 Assembly Language (BAL) in a mainframe environment. Topics include system organization, data representation, control structures and program analysis and debugging techniques.

## **CIS 266 Advanced IBM Assembly Language Programming**

3 Credits

Prerequisite: CIS 265 or permission of the instructor

Corequisite: Computer Lab

This course is a continuation of CIS 265. Topics include multi-level control break processing, register manipulation, masking, two-dimensional tables, creating and writing sorts, written documentation (external) and sequential file processing.

## **CIS 275 Telecommunications**

3 Credits

Prerequisite: CIS 115

This course introduces discusses hardware devices, transmission characteristics, network configurations, codes/modes of transmission, software/protocols involved in telecommunications.

## **CIS 276 Systems Analysis and Design**

5 Credits

Prerequisites: CIS 115 and one programming language

This course discusses the materials, techniques, procedures and human interrelations involved in developing a computerized business system. Topics include the systems approach, fact gathering techniques, forms design, input/output, file design, file organization, various charting techniques, system audits and controls, project management and implementation and evaluation. (*Offered spring semester only.*)

## **CIS 277 Operating Systems and JCL**

3 Credits

Prerequisites: CIS 115 and one programming language other than BASIC

Corequisite: Computer Lab

This course covers the IBM OS/VS operating system and Job Control Language. It includes components of the operating system, JOB and EXEC in stream and DD statements for sequential, partitioned and indexed data sets, in stream and cataloged data sets, utility routines and the function of virtual storage. (*Offered in spring only.*)

## **CIS 278 Computer-Aided Software Engineering (CASE)**

3 Credits

Prerequisite: CIS 115 or equivalent experience

Corequisite: Computer Lab

This course explores the philosophy, concepts and methods of Software Engineering in accordance with the Yourdon/ DeMarco ideology. The approach to software development presented is currently known as a reasonable way to resolve information systems that are tending toward very large dimensions (50,000 lines of code and greater). Structured analysis and design method and tools are examined. The Excelerator software design package, by Intersolv, is used for analysis and design of course projects.

## Computer Information Systems

### **CIS 279 Management of Computer Information Systems**

3 Credits

Prerequisites: CIS 115 and one programming language

This course introduces the techniques of managing computer-based information systems and information resources. Topics include hardware, software, personnel, control techniques and placement and integration of information system resources in the organization.

### **CIS 285 Maintenance Programming**

3 Credits

Prerequisites: Proficiency in at least two programming languages and permission of the instructor

Corequisite: Computer Lab

This course enables you to maintain several existing programs. You are responsible for modifications and conversions from one language to another.

### **CIS 288 Computer Information Center Usage**

1/2-5 Credits

This course is for those desiring to use the Computer Information Center of the college for independent pursuit of educational goals. The amount of credit hours applied are determined by the instructor after the student's educational goals have been assessed. In no case is the course to be less than 1/2 credit. If you are interested in CIS 288, you must meet with the course instructor before registering. The course does not apply toward any degree.

### **CIS 289 Internet Usage**

1 Credit

Prerequisites: CIS 187 or CSC 160 or permission of instructor

Corequisites: Enrollment in at least 1.0 credit hours other than CIS 289

This course is for students desiring to use the Computer Information Center of the college to access the Internet for independent pursuit of educational goals. If you are interested in CIS 289, you must meet with the course instructor before registering. The course does not apply toward any degree or certificate.

## **COMPUTER SCIENCE**

*Many of these courses will require concurrent enrollment in computer lab sections.*

### **CSC Computer Lab**

1/3 -1 Credit per course

Many computer courses have a lab accompanying them. You must register for the accompanying lab section to their computer course(s). Computer courses having an accompanying lab are designated with a corequisite of lab.

### **CSC 235 Visual C++ for Windows Programming**

3 Credits

Prerequisite: CSC 161 or CSC 233

Corequisite: Computer Lab

This course introduces the use of the Microsoft Foundation Class Library for programming Microsoft Windows. The Visual C++ AppWizard is used to create complete Windows applications employing the document/view architecture is utilized. Visual C++ resource editor is also explored in creating menus, toolbars, controls and dialogs and use Class Wizard to handle Windows messages.

### **CSC 148 FORTRAN Programming**

3 Credits

Corequisites: MAT 121 and Computer Lab

This course enables you to acquire programming skills using the FORTRAN programming language. Topics include program design, data types, looping structures, formatted and unformatted input/output, array and matrix processing, character manipulations, functions and subroutines and sequential and direct file applications.

### **CSC 160 Computer Science I**

4 Credits

Corequisites: MAT 121 and Computer Lab

This course explores the discipline of computer science. Topics include algorithm development, data representation, arithmetic and logical expressions, sub-programs and input/output operations using a structured programming language. Intensive computer laboratory activities are required.

### **CSC 161 Computer Science II**

4 Credits

Prerequisite: CSC 160

Corequisite: Computer Lab

This course continues the structured algorithm development and problem solving techniques begun in Computer Science I. Data structures are emphasized. Intensive computer laboratory activities are required.

### **CSC 165 Discrete Structures**

3 Credits

Prerequisites: CSC 160 and MAT 121

This course prepares students for a fundamental understanding of computing and computer science. Topics include set theory, Boolean algebra, relations, functions, graph theory and techniques for formal reasoning.

### **CSC 173 Visual BASIC for Windows Programming**

3 Credits

Prerequisites: CIS 115 or permission of instructor C Language Programming (CSC 230) or another high-level language is recommended.

Corequisite: Computer lab

This course introduces programming and applications development for the Microsoft Windows environment using Visual BASIC for Windows. You learn the use of objects, controls, properties, events and methods to develop applications that provide a graphical user interface for the user. You also learn to develop functions and subroutines using structured Visual BASIC and build complete Windows executable applications.

### **CSC 174 Advanced Visual Basic for Windows Programming**

3 Credits

Prerequisite: CSC 173 or permission of instructor

Corequisite: Computer Lab

This course is a continuation of CSC 173. You develop more involved applications, work with more controls, and deal with advanced topics such as data structures, Dynamic Data Exchange and Object Linking and Embedding. To provide a more suitable interface to the Windows user, error trapping and error handling are implemented as well as providing customized help topics.

### **CSC 225 Computer Organization**

4 Credits

Prerequisite: CSC 160

Corequisite: Computer Lab

This course covers the organization of a computer at the logic level. Topics include numbering systems, digital logic, digital systems, machine level representation of data, assembly level machine organization and memory system organization.

### **CSC 230 C Language Programming**

3 Credits

Prerequisite: CIS 115 or permission of the instructor

Corequisite: Computer Lab

This course introduces the C programming language, which is a "mid-level" language whose economy of expression and data manipulation features allow a programmer to deal with the computer at a "low level."

### **CSC 231 Advanced C Language Programming**

3 Credits

Prerequisite: CSC 230

Corequisite: Computer Lab

This course continues the study of C begun in CSC 230. Topics include pointers, arrays, linked lists, stacks and queues, trees and advanced user interfaces such as menus, windows and cursor control.

### **CSC 233 Object-Oriented Programming in C++**

3 Credits

Prerequisite: CSC 230

Corequisite: Computer Lab

This course enables you to learn object-oriented programming (OOP) techniques using the C++ language. The OOP paradigm is becoming the method of choice for software design. C++ is becoming the language of choice. OOP and C++ are an excellent combination for coping with the complexity of today's information systems needs. Encapsulation, inheritance, polymorphism information hiding, reusable components and OOP principles are thoroughly explored.

### **CSC 236 C Programming With Assembly Language**

3 Credits

Prerequisites: CSC 230, 231, 265 or permission of instructor

Corequisite: Computer Lab

This course introduces you to programming in C with Assembly Language. Emphasis is on file handling, graphics, databases, advanced pointers, debugging and interfacing C with assembly language.

### **CSC 238 Java Programming**

3 Credits

Prerequisites: C++ or equivalent knowledge or experience

Corequisite: Computer Lab

This course is an introduction to Java Programming, basic graphics, threads, events/procedures, user interfaces, advanced graphics and multimedia. You will write and execute a variety of Java programs. Java applets are incorporated into HTML pages, allowing for the use of real-time sound, graphics, animation and user interaction.

### **CSC 240 ADA\* Programming**

3 Credits

Corequisite: Computer Lab

This course teaches you to program in the DOD developed language ADA. Topics include overloading procedures/ functions, the package concept, data types, scope and visibility, binding modes, variant records, discriminants and tasking.

### **CSC 241 Advanced ADA\* Programming**

3 Credits

Prerequisite: CSC 240

Corequisite: Computer Lab

This course continues the study of ADA begun in CSC 240. Topics include implementing data structures, tasking for concurrent programming, the use of pragmas, generic packages and low-level programming. \*Registered trademark of U.S. Government (AIPO)

### **CSC 255 Programming Languages**

4 Credits

Prerequisite: CSC 161, 225

Corequisite: Computer Lab

This course is an overview of contemporary programming paradigms and their related languages. Topics include procedural, functional, logic, object-oriented and parallel processing.

### **CSC 265 PC Assembly Language Programming**

3 Credits

Prerequisites: One programming course other than BASIC, MAT 121 and permission of instructor

Corequisite: Computer Lab

This course teaches the assembly language on the IBM PC. Topics include COM files, screen processing, string instructions, arithmetics (binary/ASCII/BCD), table processing and macros.

### **CSC 270 Introduction to Graphics Programming**

3 Credits

Prerequisites: CIS 115 or CIS 160 or CSC 160 or CSC 230

Corequisite: Computer Lab

This course explores the concepts and techniques of programming computer graphic images. Topics include generating lines and curves, shading, writing patterns, colors, two point perspective, movement and 3-dimensional representation. You prepare programs to generate graphic images in C or C++.

## **CONSTRUCTION TECHNOLOGY**

*(Please also see Air Conditioning, Heating Refrigeration and Ventilation; Bricklaying, Carpentry; Electricity, Fine Woodworking, and Plumbing)*

### **CON 100 Computers for Construction**

2-12 Credits

This course introduces the use of computers in the construction trades. The emphasis is using computers for estimating construction projects and drawing and designing buildings with CAD programs.

### **CON 105 Blueprint Reading**

3 Credits

This course introduces students to reading and interpreting blueprints for residential, commercial and industrial construction.

### **CON 151 Construction Process**

4 Credits

This course covers the entire construction process including liens, contracts, bids, specifications, building permits and licensing, inspections and the Uniform Building Code. Intratrade coordination, remodeling and additions, practices, construction management and supervision, scheduling, solar building techniques, insulation concerns and multi-unit construction are introduced.

### **CONSTRUCTION TECHNOLOGY: APPRENTICE-RELATED**

*All apprentice-related courses are taught in cooperation with the Colorado Industry Training Council. You must have the approval of the Chair of Construction Technology.*

#### **ARC 111 & 112 Carpenter I**

4 Credits

This course explores safety-crane and rigging traffic, carpentry math, nails, fasteners and adhesives, wood building materials, hand tools and stationary and portable power tools. In addition, this course studies site layout, reading plans and elevations, concrete and reinforced concrete, concrete handling and placement and forming foundations and flatwork.

#### **ARC 121 & 122 Carpenter II**

4 Credits

This course explores sketching and visualization, field engineering principles and supervision. In addition, reinforcing concrete, patented forms/heavy formwork, wall systems, tilt up, structural steel, shoring and formwork are discussed.

#### **ARC 131 & 132 Carpenter III**

4 Credits

This course presents floor, wall and roof systems, as well as stair construction, interior finish, exterior finish and roofing application.

#### **ARC 141 & 142 Carpenter IV**

4 Credits

This course presents advanced supervision, laser instruments and introduces the Uniform Building Code. In addition, this course covers water and damp proofing, finish stairs, supplement to ceiling systems, metal studs and drywall, interior finish, wall and floor specialties and cabinetry.

#### **ARD 111 & 112 Drywall Applicator (Year One)**

4 Credits

This course introduces to the trade, tools and materials of the trade, drywall systems and blueprints. Topics include safety, human relations, trade math, material handling and storage, framing materials and fasteners, basic non-load bearing wall framing, ceiling framing, furring, hanging materials and fasteners and wallboard hanging on wood.

#### **ARD 121 & 122 Drywall Applicator (Year Two)**

4 Credits

This course presents thermal insulation and sound control, trim installation, safety, advanced trade math and layout. It also includes load-bearing framing, installing hollow metal, demountable partitions, special framing conditions, and prefinished gypsum board, wallboard hanging on metal walls and ceilings, laminated applications, angles and curves, laser instruments, interior finish (ceiling systems), supplement to ceiling systems and finishing procedures.

#### **ARE 111 & 112 Electrical I**

4 Credits

This course presents general safety, tools of the electrical trade, contractor owned tools, trade history and introduces electrical theory, conduit outlet boxes and the National Electrical Code. This course also explores the sources of electricity, trade math, laws of electricity, series circuits, parallel circuits and series parallel circuits. Other topics include organization of the National Electrical Code, magnetism laws, wire devices, service boxes, connectors, conduit bending, conductors and insulators, insulation and pulling large and small wires.

#### **ARE 121 & 122 Electrical II**

4 Credits

This course covers blueprint symbols, blueprint reading, schedules and specifications, instruments and meters, characteristics of induction and AC capacitance. Other topics include series circuits (AC), parallel circuits (AC), overcurrent protection, fuses, circuit breakers, ducting, installing cable tray, wireways and surface metal raceways, main service equipment subpanels, grounding conductors, metallic sheathed cable and special wires and cords. In addition, this course introduces alternating current, Ohm's Law for Alternating Current, the theory of grounding and the general requirements of wiring.

#### **ARE 131 & 132 Electrical III**

4 Credits

This course presents hazardous locations, electrical safety, reading diagrams, lighting fundamentals, fluorescent lighting, high intensity discharge lighting, fundamentals of DC motors, DC motors and generators, fixed generators and portable generators. This course also explores residential calculations, fixed electric space heating, fundamentals of AC motors, control of motor starting, single phase motors and polyphase motors. In addition, this course covers the general requirements for commercial wiring and busways, as well as motor circuit: code, types of motors, wire sizing, overload protection, motor connections and overcurrent protection.

#### **ARE 141 & 142 Electrical IV**

4 Credits

This course explores tool and material take-offs, electrical safety, reading diagrams, journey person responsibilities, low voltage lighting control, emergency lighting, special systems, transformer connections, solid state fundamentals and advanced meter applications. This course also covers high voltage fundamentals, special occupancies and equipment, resistive heating cables and special terminations.

#### **ARM 111 & 112 Masonry I**

4 Credits

This course introduces you to the masonry trade. Topics include history of the trade, safety, tools and equipment, masonry math, mortar joints and application, brick materials and layout.

#### **ARP 111, 112, 121, 122, 131, 132, 141, 142, 151 & 152 Plumber and Pipefitter**

4 Credits

These courses present both the plumbing and pipefitting trades. For plumbing, they cover safety measures, plumbing materials and tools; low pressure boilers; blueprint reading; mathematics and metric information. These courses also cover connecting, fitting, jointing, installing and supporting pipe; fixtures and appliances; sanitary/non-sanitary drainage vents and storm drainage; traps, cleanouts and backwater valves; water supply sizing and distributions; general regulations for steam/hotwater heating; testing, inspecting and the Uniform Plumbing Code.

For the pipefitting trade, these courses present piping systems, including metal/nonmetallic piping, tubing, hoses, fittings, common/specialized valves, strainers, filters and traps and accessories. These courses also cover simple and rolling offsets, including the invisible box method; use of standard pipefitting tables; calculation of cut lengths through screwed, flanged and welded fittings; use of steel square to calculate the set, run, roll and travel measurements.

Other topics include basic oxyacetylene welding where the processes, equipment, symbols, types of welds on light and heavy plates, brazing, silver soldering, flame cutting, piercing and hold cutting are discussed. This course explores basic arc welding including: Processes, fundamentals, symbols, beads, types of joints, reverse polarity, bare rod, coated rod, build-up and low-hydrogen electrodes, medical gas cross-connections and backflow prevention.

**ARS 111 & 112 Sheet Metal I**

4 Credits

This course introduces safety, shop/trade mathematics, the principles of layout, the elements of blueprint reading and fabrication. This course also covers the various tools, fasteners, metals and sheet metal processes.

**ARS 121 & 122 Sheet Metal II**

4 Credits

This course introduces parallel line development, triangulation, radial line development and expands the your knowledge of trade mathematics. This course also presents soldering and brazing, hangers and supports, insulation, gutters and downspouts, flashing and hoods and ventilators.

**ARS 131 & 132 Sheet Metal III**

4 Credits

This course introduces welding, brazing and cutting. The principles of air flow, equipment, fiber glass and PVC ducts, blueprint specifications and field measuring and fitting are also explored in this course.

**ARS 141 & 142 Sheet Metal IV**

4 Credits

This course explores shop production and organization, air balance, duct design fundamentals and duct standards. This course also covers carbon arc welding; bend allowances; louvers, dampers and access doors; rigging and hoisting; fume and exhaust systems design and the principles of refrigeration.

**CONTINUING EDUCATION FOR HEALTH CAREERS**

**CEN 104 The Healing Mind**

1/2 Credit

This course enables you to explore scientific research as well as ancient practices demonstrating the interconnectedness of healing and the mind. Different cultural viewpoints for accessing this often subtle, sometimes seemingly miraculous, influence are presented.

**CEN 106 Case Management**

1/2 Credit

This course is a basic information course that explains case management in hospitals, insurance, home care and private companies. This course includes negotiating contracts, developing care plans, reports and dealing with conflicts. This is another alternative in nursing.

**CEN 107 Camp Health Care**

1/2 Credit

This course is open to RNs, LPNs, EMTs and Advanced Red Cross First Aid carriers. It presents health issues and health responsibilities for camp. Social service regulations, medications, protocols, first aid equipment, immunizations, communicable diseases, care of chronic health conditions and the role of the health person with camp staff are discussed.

**CEN 110 Neurolinguistic Programming I**

1/2 Credit

This course presents a practical set of skills that enhance and expand a person's ability to build verbal and nonverbal rapport rapidly with others. Neurolinguistic programming can increase the effectiveness of healing interventions by developing a clear, individualized communication pattern allowing for a desired change to occur. This course also includes a learning process called "anchoring," which is a gentle and respectful method of change.

**CEN 201 Ethics in Health Care**

1/2 Credit

This course presents the ethical dilemmas that have become everyday issues in health care. Also presented is the effect that technology has had on such discussions as the "right to die" and "duty to die." Although there are no "answers" to ethical dilemmas, many insights are studied by examining the issues.

**CEN 203 Women's Holistic Health Care**

1/2 Credit

For most women being well-informed is essential for good health. With health needs dramatically changing as we age, body image, depression, sexuality, exercise and nutrition are all common health concerns. These issues and basic standard clinical practices are discussed in detail with views from several perspectives. A holistic approach is emphasized.

**CEN 208 Basic EKG Interpretation**

1 Credit

This course presents the anatomy and physiology of the heart, conduction system, normal and abnormal stimuli of cardiac muscle, cardiac drugs and recognition of arrhythmias.

**CEN 209 Spanish for Health Care-Level I**

1 Credit

This course covers basic anatomy and medical terminology. It enables you to speak with patients and encourage needed information. This course is adapted to your needs.

**CEN 210 Physical Assessment of the Adult**

2-3 Credits

You learn how to obtain a complete health history which is integrated with a physical exam. The assessment skills of inspection, palpation, percussion and auscultation are practiced in the course. Proper use of equipment such as the otoscope, tuning fork, ophthalmoscope and reflex hammer are also covered.

**CEN 212 Neurolinguistic Programming II**

1/2 Credit

Prerequisite: CEN 110 or permission of instructor

This course teaches hands-on NLP tools to produce positive changes for yourself and others. You learn to read people's unconscious cues, resolve ambivalences and create feelings of self-confidence when and where they want them.

**CEN 213 Spiritual Role in Health Care**

1/2 Credit

This course is open to all caregivers. Spirituality in a holistic framework is explored with focus on its development in individuals through the lifespan along with virtues of spirituality. This course also examines the healing qualities of various religions including the theory of esoteric energy rituals in Christianity. Self growth in one's own spirituality is included.



## Continuing Ed for Health Careers

### **CEN 216 Humor Therapy**

1/2 Credit

This course explores the healing of humor on the body. Topics may include how humor can serve as a powerful therapeutic tool, minimize the trauma of hospitalization and provide for healthy stress release and balance for the caregiver. Effective use of humor in the workplace is also covered. Humor not only provides a relaxed environment but it can also facilitate healing and the building of "lighter" relationships with co-workers, patients and patients' families.

### **CEN 217 Phlebotomy Refresher**

1 Credit

This course covers OSHA regulations; collection procedures and requirements for various laboratory tests; phlebotomy technique; problem solving; legal implications and phlebotomist/patient rights.

### **CEN 218 Better Charting and Legal Documentation**

1/2 -1 Credit

This two-part course is designed to review the principles and legal aspects of documentation. This course discusses better charting deals with documentation from a nursing care perspective and examines what should be charted and how. Various charting systems (S.O.A.P., Block, Narrative, etc.) are considered, and you are encouraged to bring chart forms and charting samples for discussion. This course also explores the legal aspects of documentation and includes being a witness, consents, living wills and DNR orders.

### **CEN 220 Law Every Nurse Should Know**

1/2 -2 Credits

In this seminar you learn the anatomy of a malpractice claim and the elements required for a lawsuit. Participants become acquainted with basic doctrines and principles of law, which apply to nurses, and how to avoid legal problems.

### **CEN 221 High Level Wellness**

1 Credit

This course explores the positive and health-promoting dimensions of the wellness lifestyle. You have an opportunity to assess your present lifestyle and design a new one incorporating the wellness principles. The course covers nutrition, exercises, stress management and personal assessment.

### **CEN 224 Massage Therapy**

1 Credit

Prerequisite: CEN 242

This course explores massage therapy and its importance in treating injuries, chronic pain and stress related conditions. Swedish massage techniques and basic foot reflexology, are performed and experienced by you. Guidelines for creating a nurturing, healing environment and the use of lotions, oils and aroma therapy are also covered.

### **CEN 225 Introduction to Home Health Nursing**

1/2 -1 Credit

This course introduces home health nursing from the standpoint of services provided by for-profit and non-profit agencies, funding for home health care and community support services. The role of the nurse, the family, reimbursements and the future of home health care are emphasized. *This course should be followed with CEN 264 and CEN 243.*

### **CEN 226 Intravenous Therapy**

1 Credit

This course covers basic venipuncture techniques, central lines, factors involved in vein selection, psychological implications, complications and nursing measures. *This course does not provide IV certification.*

### **CEN 227 Communication Skills**

1/2 -1 Credit

Reacting and responding to the demands of the environment, feeling stress, frustration and apathy at times, takes a toll on self-worth and one's interaction with others. This course enables you to acquire essential skills in communication, conflict resolution, negotiation, team building, decision-making and assertiveness to manage stress, gain self-worth and expand one's human potential to get needs met.

### **CEN 228 Solution Focused Counseling**

1/2 Credit

This course explores how a problem or solution increase with attention. You learn how to use the newest, brief counseling and interviewing techniques which research demonstrates focus a person toward resourceful resolution.

### **CEN 229 Wellness Counseling**

1 Credit

This course presents tools to facilitate yourself and others in the movement toward a higher level of wellness including vitality and a joy of living. You learn assessment tools, basic counseling skills, how to establish contacts and set goals for change, methods for evaluation and ongoing growth.

### **CEN 230 Trauma Assessment and Intervention**

1 Credit

This course presents the steps for a systematic assessment and intervention in traumatic emergencies. Each step is covered in detail with handouts, slides, classroom discussion and hands on experience. *This course is not for BTLS Certification.*

### **CEN 232 Caring for the Caregiver**

1/2 Credit

This course explores the daily stresses of caregivers and provides methods to relieve stress and care for ourselves. It also examines a variety of methods to assist in self-healing.

### **CEN 235 Nutritional Therapy and Health**

1/2 Credit

This course examines the nutritional alternatives to traditional medical therapies. The discussions focus on a more optimum level of health, using various nutritional techniques. Topics include food allergies and asthma, premenstrual syndrome, gastrointestinal disorders, blood sugar abnormalities, vitamins and minerals and the effect of drugs on nutritional status.

### **CEN 236 Dance Therapy and Healing**

1/2 Credit

This workshop introduces the theories of Marian Chace/Group Development, Blanche Evan/Creative Movement and Mary Whitehouse/Authentic Movement. Dance therapy principles can be applied to all caregivers interactions in which professionals want to increase empathy and communication. You should come dressed in loose, comfortable clothing.

### **CEN 239 Intravenous Certification**

4 1/2 Credits

This course covers venipuncture techniques, blood tubes, procedure for setting up and maintaining intravenous therapy, intravenous catheters, solutions, pumps, antibiotic therapy, and legal/ethical ramifications.

**CEN 241 Healing Imagery:  
Body, Mind, Spirit**

1/2 Credit

This course explores the ancient practices of Shaman healers as well as the clinical research on healing imagery. You develop your own creative imagination for personal and professional growth. You also learn effective techniques which accelerate healing and develop insight.

**CEN 242 Therapeutic Touch**

1 Credit

This course provides a historical overview of healing-through-touch. The art of healing touch is related to a variety of belief systems including the scientific method, holistic health, parapsychology and other healing modalities. You learn to develop and use touch as a means of assessing a client's/ patient's state of wellness and enhance wellness. You are given specific instructions in developing touch sensitivity and practice the assessment and healing methods.

**CEN 243 Teaching in  
Community/Home Health Nursing**

1/2 Credit

Prerequisite: CEN 225 and 264 are recommended

This course presents teaching theories, assessment of client/family's learning needs; teaching modalities and practicum to exercise new skills. This course covers the new JACHO and case management requirements, discharge teaching and community resources.

**CEN 244 Holistic Nursing Level I**

1 Credit

The conscious application of self-responsibility, caring, human development, stress, lifestyle, communication, problem solving, teaching/learning, leadership and change are topics covered in this course. This is approached through nurturing, preventive and generative activities to help the clients help themselves move toward high-level wellness.

**CEN 249 Journaling**

1 Credit

The journal or diary is an effective tool for looking at your own personal growth process, as well as helping patients/clients in their healing process. Journaling helps people to develop memory, imagination, feeling, intuition and many other creative aspects of themselves. Using the journal in health practices can accelerate the healing process for the patients/clients. This class teaches basic journaling skills, as well as 15 special techniques to use in the journal.

**CEN 250 Home Health Nursing Skills  
Part I**

1/2 Credit

This course is for nurses entering the home health field. It presents the skills/functions that are necessary for quality care in home health nursing, including medications, laboratory work, emergencies and common health problems seen in the home.

**CEN 251 Music as a Therapy for  
Wellness**

1 Credit

This course is a highly participatory including music activities and discussions that lead toward the benefits of music therapy for self and clients. A study of the avenues of music experience, as well as awareness of music and sounds in our environment are included.

**CEN 252 Menopause: Traditional and  
Natural Approaches**

1/2-1 Credit

This course addresses the process of physical, emotional, mental and spiritual symptoms. Discussions focus on traditional hormone therapy as well as alternative therapies including nutrition, natural hormones, Chinese medicine, acupuncture, herbology and biofeedback. Health care risk before and after menopause also are addressed.

**CEN 254 Holistic Nursing Level II**

2 Credits

Prerequisite: CEN 244

Using basic theory from CEN 244, this course provides a more comprehensive study of modalities to strengthen the whole person in the process of facilitating healing and maintaining optimal health. The application of holistic concepts and the body/mind responses are used as guides for each modality studied.

**CEN 255 Spanish for Health Care—  
Level II**

1 Credit

Prerequisite: CEN 209

This language course is conversational. Verb tenses are reviewed along with medical terminology. You are given an opportunity to speak with native speakers one-on-one for increased proficiency.

**CEN 256 Holistic Nursing Level III**

2 Credits

Prerequisites: CEN 244, 254

This course incorporates the course work for the Holistic Nursing Certificate Program into the practical implementation of holistic nursing philosophy and skills in a clinical or community setting. It is recommended that students have completed at least half of the requirements for the certificate program before taking this course. You identify your own project, write a project proposal and present a final report to the class. This course assists you in developing leadership and teaching skills in the health care community.

**CEN 257 ACLS  
(Advanced Cardiac Life Support)**

2 Credits

Prerequisite: BCLS certification is required as well as proficiency in EKG recognition

This course presents the required material for ACLS completion. It covers arrhythmias, medications, therapeutic modalities for life threatening arrhythmias, airway management and other treatment modalities used in cardiac and respiratory arrest. Each class includes case scenarios to give practical and hands on use of emergency equipment. *This course is taught according to NEW ACLS standards.*

**CEN 258 Journaling the Spiritual  
Journey**

1 Credit

Prerequisite: CEN 249

This course focuses on connecting with the spiritual part of people and providing tools for personal growth, as well as techniques to assist others, on the journey to spiritual wholeness. This course also explores how spiritual writing expands the consciousness and how journaling can help people who need direction in their lives.

**CEN 260 Bereavement Counseling**

1/2 Credit

This course presents current principles of bereavement counseling, including identification of the normal grieving process and appropriate interventions. It covers the use of your feelings and experiences in assisting patients and/or families who are bereaved.

## Continuing Ed for Health Careers

### **CEN 262 Advanced Therapeutic Touch**

1 Credit

This course is designed to assist those of you who have an introductory knowledge of therapeutic touch to increase and enhance your skills in assessment including visualization, grounding, focusing, color, self-healing, meditation and biofeedback.

### **CEN 263 Self-Esteem and the Child**

1 Credit

This course explores self-esteem as a learned process. Steps (tools) that one can use starting in childhood and continuing through adulthood are discussed in this course. Articles and books are explored to assist educators, nurses, parents and grandparents.

### **CEN 264 Documentation Skills in Home Health Nursing**

1/2 -1 Credit

Prerequisite: CEN 225 is recommended

This course is designed to assist nurses to develop problem lists, nursing care plans, document history and physical exams, write plan of treatment, work with diagnostic codes, develop visit parameters and follow Medicare and JACHO guidelines for determining eligibility and skilled services.

### **CEN 265 Personal Power: Gift of Self-Esteem**

1 Credit

This course explores self-talk, self-appreciation, self-responsibility, belief and expectations and provides tools for increasing personal power. This course also covers the correlation between self-esteem and health—mentally and physically.

### **CEN 266 Physical Assessment in Home Health**

1 Credit

This course teaches you how to obtain a complete health history which is integrated with a physical exam specific to the home setting. The assessment skills of inspection, palpation, percussion and auscultation are practiced in the course. Proper use of equipment such as the otoscope, tuning fork, ophthalmoscope and reflex hammer is included.

### **CEN 267 Living Without Limits**

1/2 Credit

This course describes steps which can be taken to clarify goals, get support for challenges and act effectively to accomplish your life's dreams. This course also explores the qualities of "optimal performers" and how to let go of distractions by understanding the importance of being true to yourself.

### **CEN 269 Healing Presence**

1 Credit

This course explores the meaning of healing presence through the process of increased self-awareness and self-discovery. It also covers the development of skills for connecting on a higher level with yourself and others. The course focuses on experiencing the healing presence with oneself and the essence of the healing presence with others.

### **CEN 271 AIDS Update**

1/2 Credit

This course covers the etiology, epidemiology and treatment modalities of Acquired Immune Deficiency Syndrome. The psychosocial issues affecting the individual with HIV/AIDS and issues concerning the caregiver are also covered.

### **CEN 274 Quality Assurance and Utilization Review in Home Health Care**

1/2 Credit

This course covers the roles and responsibilities as well as the definitions and methods used in monitoring and evaluating for quality assurance and utilization review. Medicare coverage and reimbursement procedures are reviewed as well as common methods of data collection and understanding the medical record.

### **CEN 276 Creating Healthy Relationships**

1 Credit

This course offers you an informational framework and the tools for building personal and professional relationships, which are vibrant and growthful. Relationship to self, others and the environment are addressed.

### **CEN 278 Hospice Nursing**

1/2 Credit

This course introduces the philosophy and principles of hospice support for the terminally ill, their family and friends. It explores hospice intervention, which offers opportunities for comfort through symptom control, support to the patient's family and friends in decision making and coping with anticipatory grieving and death. This course also includes coverage of hospice in the home, as well as in-patient settings.

### **CEN 281 Home Health Nursing Skills Part II**

1/2 Credit

This course includes an in-depth study of common illnesses, early discharge surgeries, open-wound care, I.V. therapy, case management and the supervision of home health aides in the home or assisted-living settings.

### **CEN 282 Legal Issues in Home Health Care**

1/2 Credit

This course explores some of the special legal risks for home health care providers and risk management techniques. You study the differences in home health care today as well as look at legal issues.

### **CEN 283 Psychoneuroimmunology**

1/2 Credit

This course presents the role of neurotransmitters in the body-mind relationship in illness or wellness. The systems of belief patterns, behavioral addictions, conditioned responses, and health expenses are also explored and related to personal health.

### **CEN 285 Stress Management**

1/2 -1 Credit

This course explores working with energy, confidence and enthusiasm by learning specific skills regarding the management of stressful situations or people. This experiential class is designed for all who are interested in a higher quality of life and want to reach their full potential. You learn how to relax quickly, improve self-image, improve concentration and to control worry.

### **CEN 287 Nurse Entrepreneur**

1/2 Credit

This course teaches the skills necessary to start an independent practice. It includes self-assessment of professional skills, the business plan for marketing and finance and the actual design of the practice.

### **CEN 289 Career Alternatives Within Nursing**

1/2 Credit

This one-day workshop explores numerous areas in which nurses work and how to pursue jobs in these areas.

## **CONTINUING EDUCATION REFRESHER NURSING**

### **CER 200 Registered Nurse Refresher Course**

8-12 Credits

Corequisite: CEN 210

This refresher course is designed for all RNs, regardless of time absent from nursing practice, to explore avenues of employment. A portion of clinical experience is held in the hospital to refresh and update basic nursing skills. There are also opportunities for experience in home health, occupational health, long-term care, rehabilitation, hospice and other settings (choice of two).

## **COOPERATIVE EDUCATION**

### **COE 296 (or COM 115) The Job Search Process**

Cooperative Education Corequisite

1 Credit

Either of these courses provides the on-campus corequisite for students enrolled in Cooperative Education/Internship 297 courses. These courses are designed to maximize student learning through the Cooperative Education/Internship work experience. The corequisite requirement is designed to assist you in developing job-oriented learning objectives and to prepare you with skills essential for job acquisition, retention and promotional growth.

### **XXX 297 Cooperative Education/Internship**

3 Credits

Prerequisite: Permission of Cooperative Education Coordinator

Corequisite: COE 296 (or COM 115)

This course is a credited program which provides work experience opportunities for you to gain practical work experience related to their educational program. All Co-op/Intern courses carry a course/program prefix to match the area of study and are numbered 297.

## **CRIMINAL JUSTICE**

### **CRJ 110 Introduction to Criminal Justice** 3 Credits

This course includes a study of the agencies and processes involved in the criminal justice system; the legislature, the police, the prosecutor, the public defender, the courts and corrections. It also includes an analysis of the roles and problems of the criminal justice system in a democratic society, with an emphasis upon inter-component relations and checks and balances.

### **CRJ 111 Substantive Criminal Law** 3 Credits

Prerequisite: CRJ 110

This course teaches legal definitions of crime; purposes and functions of the law; historical foundations and the limits of the criminal law.

### **CRJ 112 Procedural Criminal Law** 3 Credits

Prerequisite: CRJ 110

This course covers constitutional and procedural considerations affecting arrest, search and seizure and includes analysis of criminal cases from arrest through final appeal.

### **CRJ 116 Civil Liability** 3 Credits

Prerequisite: CRJ 110

This course covers the origin and jurisdiction of civil action, procedure and responsibility addressing the liability of criminal justice practitioners.

### **CRJ 118 Report Writing** 3 Credits

Prerequisite: CRJ 110

This course is designed to teach the fundamentals for preparing criminal justice reports, who uses them, what information must be included, how to organize it and how to write reports in a clear, concise language that will communicate the maximum amount of factual information. Special emphasis is placed on spelling, punctuation and paragraphs.

### **CRJ 125 Law Enforcement Operations** 3 Credits

Prerequisite: CRJ 110 or permission of instructor

This course is an in-depth examination of the complexity and multi-dimensional aspects of the law enforcement role and career, law enforcement discretion and law enforcement values and culture in modern America. The role and functions of law enforcement in the occupational, social, political and organizational context are explored.

### **CRJ 126 Patrol Procedures** 3 Credits

Prerequisite: CRJ 110

This course studies of the basic knowledge and skills required of a peace officer to safely and effectively accomplish the patrol function.

### **CRJ 135 Judicial Function** 3 Credits

Prerequisite: CRJ 110

This course examines the criminal process i.e., prosecutors, defense attorneys, judges and the discretionary aspects of adjudication.

### **CRJ 145 Correctional Process** 3 Credits

Prerequisite: CRJ 110

This course covers the post-conviction corrections process; the development of a correctional philosophy, theory and practice; a description of institutional operation, programming and management; community-based corrections, probation and parole.

### **CRJ 146 Community-Based Corrections** 3 Credits

Prerequisite: CRJ 110, 135, 145

This course is an analysis of community based correctional programs and procedures. Emphasis on environment and the relationship to public safety, rehabilitation and punishment.

### **CRJ 147 Institutional-Based Corrections** 3 Credits

Prerequisite: CRJ 110

This course studies the correctional institution, including the role of correctional personnel relative to institutional programs.

## **Criminal Justice**

### **CRJ 148 Juvenile Institutions**

3 Credits

Prerequisite: CRJ 110

This course focuses on juvenile institutions, their purpose and function; differentiating between detention and institutional treatment.

### **CRJ 150 Introduction to Victims of Crime and Trauma**

3 Credits

Prerequisite: CRJ 110

This course introduces students to the role the crime victim plays in the criminal justice system. The traditional response that a crime victim receives from the system is studied and the psychological, emotional and financial impact that these responses have on victimization are analyzed.

### **CRJ 151 Domestic Violence**

3 Credits

Prerequisite: CRJ 110, 150 or permission of instructor

This course examines the role of women and the abuse of women in history, different theories about spouse abuse and research on the subject. The course also examines the treatment for both the victim and the perpetrator of domestic violence as well as children of violent homes. Colorado law pertaining to domestic violence, changes in society's attitude and actions toward domestic violence is covered as well.

### **CRJ 152 Sexual Assault**

3 Credits

Prerequisite: CRJ 110, 150 or permission of instructor

This course examines sexual assault beginning with definitions and describing the degrees of sexual assault, i.e. penalties and realities of punishment. Myths, statistics, services, treatment and prevention are discussed. Both the rapist and the adolescent offender are profiled. The pro-active approach is taken with regard to prevention.

### **CRJ 153 Violence Against Children**

3 Credits

Prerequisite: CRJ 110, 150 or permission of instructor

This course includes an in-depth study of physical, sexual and emotional abuse and neglect of children. The course focuses on identification and treatment of abusive families and victims of abuse and on the response of the legal system, the community and human service agencies.

### **CRJ 190 Financial Investigations**

3 Credits

This course introduces the current perspectives dominant in the field of financial investigations. Concepts of law and evidence; sources of information including financial institutions; business financial record keeping; and tracing funds, using a variety of methods and interviewing as they apply to detecting and resolving financial crimes, are discussed. Emphasis is placed on theoretical principles and applications of financial investigative techniques.

### **CRJ 210 Constitutional Law**

3 Credits

Prerequisite: CRJ 110

This course studies the powers of government as they are allocated and defined by the United States Constitution; intensive analysis of United States Supreme Court decisions.

### **CRJ 211 Criminal Behavior**

3 Credits

Prerequisite: CRJ 110, PSY 102 or permission of instructor

This course identifies prominent theories of societal reactions to crime and their application to specific crime problems. Examination of the question of crime causation from legal, social, political, psychological and theoretical perspectives, history and development of criminology are explored.

### **CRJ 214 Colorado Revised Statutes**

3 Credits

Prerequisite: CRJ 110

This course is designed to provide you with an understanding of the principles and concepts of the Colorado Criminal Code.

### **CRJ 216 Juvenile Law and Procedure**

3 Credits

Prerequisite: CRJ 110

This course analyzes the socio-legal operation of the Juvenile Court, focusing on the substantive and due process rights of minors. Legal reasoning underlying the juvenile law as it operates at all levels of government is also discussed.

### **CRJ 218 Drug Investigative Strategies**

3 Credits

Prerequisites: CRJ 110

This course examines both the procedural and administrative functions of a drug enforcement unit to include case initiation, management of investigative resources, surveillance, undercover operations, management philosophies and personnel field training agents.

### **CRJ 220 Human Relations and Social Conflict**

3 Credits

Prerequisite: CRJ 110

This course highlights the environmental organizational and socio-psychological dimensions of social control. The study of individual attitudes, beliefs and behavior involved in role conflicts, community relations and conflict management in the social structure are covered.

### **CRJ 225 Crisis Intervention**

3 Credits

Prerequisite: CRJ 110, 150 or permission of instructor

This course provides an understanding of crisis theories and examines the role of the interventionist.

### **CRJ 235 Delinquent Behavior**

3 Credits

Prerequisite: CRJ 110

This course focuses on the adolescent who violates social and legal norms and the consequences for the individual and society. You study the social and psychological factors influencing individual delinquent patterns.

### **CRJ 239 Managing Emergency Worker Stress**

3 Credits

Prerequisite: CRJ 110 or permission of instructor

This course provides you with an understanding of trauma reaction and stress management for the first line responders, i.e. police officers, victim advocates, paramedics and firefighters. Practical application of coping skills and stress management for first line responders is discussed.

**CRJ 240 Criminal Investigation**

3 Credits

Prerequisite: CRJ 110

Criminal investigative methods and procedures are introduced and include preliminary through the follow up stages.

**CRJ 245 Interview and Interrogation**

3 Credits

Prerequisite: CRJ 110

This course studies the technical and legal approaches used in gathering desired information from victims, witnesses and suspects. The fundamental characteristics of questioning and the use of psychological influences are examined.

**CRJ 246 Traffic Investigation and Management**

3 Credits

Prerequisite: CRJ 110

This course is an overview of the skills and concepts necessary to complete an accurate investigation of a traffic collision. Traffic management concepts, selective traffic enforcement and safety issues are discussed.

**CRJ 255 Organization and Management of Institutions**

3 Credits

Prerequisite: CRJ 110

This course consists of the history of penal and correctional management organization of correctional institutions, management processes, leadership, control principles and implications for the future.

**CRJ 256 Classification and Treatment of Offenders**

3 Credits

Prerequisite: CRJ 110

This course covers the process through which the custodial, educational, vocational and treatment needs of the offender are determined.

**CRJ 287 Adult Survivors of Childhood Molestation**

3 Credits

Prerequisite: CRJ 110 or permission of instructor

This course provides the potential victim advocate with the latest treatment modalities for victims who are adult survivors of childhood molestation. It also focuses on the possible long term destruction mannerisms (Post Traumatic Stress Disorder) as well as the immediate trauma. How this type of crime can impact its victims' physical, mental and emotional attitudes, thereby affecting their personal and professional lives is explored.

**CRJ 288 Grantwriting for Non-Profit Organizations**

2 Credits

This course focuses on the specifics of grantwriting for non-profit organizations. It provides step by step details for an acceptable grant proposal. Additionally, the difference between government grants and private sector grants is explored. This course is designed for beginners, but those wishing to refresh their knowledge in this area are encouraged to participate.

**CRJ 290 Special Topics: Criminal Justice**

1/2 - 5 Variable Credits

Prerequisite: Some topics may be restricted to criminal justice practitioners

This course is designed for flexible utilization and covers specific topics and current issues in the criminal justice system. This course is offered as needed for credit appropriate to the topic and each offering includes a description of the topic(s).

**DEVELOPMENTAL: EDUCATION**

**EDU 090 Seminar in Peer Tutoring**

1-3 Credits

This seminar prepares you to be effective tutors of their peers through course lecture, practical experience and small group sessions. The variable-credit, open-entry format allows you flexibility in scheduling and an opportunity to investigate certain features of teaching techniques.

**EDU 092 Portfolio Development Workshop**

1 Credit

This course is for those of you who are interested in using the portfolio process to apply for Credit for Prior Learning. You learn to identify, assess, analyze and document college-level prior-learning gained through work and life experience and to prepare a portfolio for use in applying for credit for prior learning.

**EARLY CHILDHOOD EDUCATION**

**ECE 101 Introduction to the Early Childhood Profession**

3 Credits

This course introduces the early childhood profession. Topics include the history of early childhood care and education, professionalism, curriculum, program management, health and safety, an overview of child development, early childhood care and education models and current issues. This overview covers prenatal through age eight.

**ECE 102 Early Childhood Profession Lab Experience**

3 Credits

Prerequisite: Pass FBI background check; health screening including TB tine and H1B tests

Corequisite: ECE 101

This course develops skills for observing and recording children's development and behavior. Moreover, you examine and practice appropriate methods for interacting with, guiding, caring for and teaching young children. If working in a licensed center, students must meet state licensing requirements.

**ECE 103 Guidance of Children**

3 Credits

You explore the theories and techniques for understanding and guiding children's behavior. The components of a guidance system are examined including the child, the family, other caregivers and the physical environment.

**ECE 111 Infant and Toddler Theory and Practices**

3 Credits

You explore theories, applications and issues such as staff/family interaction, pertinent to infants and toddlers in the areas of social, emotional, language, cognitive and physical development. These concepts are related to the individual's developmental progression, including prenatal. You also examine the needs of children in group and family settings, including health, safety and nutrition issues and state requirements for licensed infant/toddler homes and centers.

## **Early Childhood Ed**

### **ECE 112 Care and Nurturing of Infants/Toddlers Lab**

3 Credits

Prerequisite: Pass FBI background check; health screening, including TB tine/HIB tests

Corequisite: ECE 111

This course is a supervised lab experience working with infants and toddlers in either a college lab school or an approved licensed setting. Priority is focused on the development of essential observation skills; initial implementation and evaluation of developmentally appropriate practice with infants and toddlers; and the acquisition of skills necessary to guide and facilitate the development of children of varying social, cultural and economic backgrounds. You are required to participate in seminars. If working in a licensed center, you must meet state licensing requirements.

### **ECE 115 Creativity and the Young Child**

3 Credits

This course emphasizes strategies to develop, implement and evaluate activities to support a curriculum in an environment that encourages and supports creative self expression and problem-solving in children. Developmentally appropriate practices as they relates to music, movement, art, drama, literature, play and other avenues are integrated.

### **ECE 116 Supporting Children's Language and Cognitive Development**

3 Credits

Prerequisites: ECE 238 or PSY 238 preferred; ECE 227

This course examines theories of cognitive and language development as a framework for conceptualizing the way young children acquire thinking skills. You observe, plan, facilitate and evaluate developmentally appropriate group and individual activities in the areas of language, science and math, as well as problem-solving and logical thinking. The value of play is also emphasized.

### **ECE 117 First Start: Children with Disabilities**

3 Credits

You explore child care services for infants, toddlers and young children with disabilities and chronic conditions. This course focuses on strategies, activities and adaptations that assist you with the inclusion of children with disabilities and chronic conditions in child care programs. Health and legal experts, parents and children with disabilities and chronic conditions are consulted in order to present accurate and useful information.

### **ECE 118 Supporting Children's Emotional and Social Development**

3 Credits

Prerequisites: ECE 238 or PSY 238 preferred; ECE 227

You examine theories of social and emotional development as a framework for conceptualizing the way young children acquire social/emotional skills. You observe, plan, facilitate and evaluate developmentally appropriate group and individual activities in the areas of interpersonal skills and self concept. The effects of play and families or origin on a child's emotional/social well being are emphasized.

### **ECE 205 Nutrition and the Young Child**

3 Credits

This course provides parents and teachers with information about nutrition and the effects of sound nutrition on the optimal growth and development of young children. In addition, you plan meals and snacks appropriate to the needs of the young child. Developmentally appropriate activities for the exploration of nutrition education and cooking are included.

### **ECE 216 Administration: Human Relations for the Early Childhood Profession**

3 Credits

This course focuses on the human relations component of an early childhood professional's responsibilities. The course covers director/staff relationships, staff development, leadership strategies, parent/professional partnerships and community interaction.

### **ECE 226 Administration of Early Childhood Care and Education Programs**

3 Credits

This course examines and interprets Colorado's minimal licensing requirements, as well as optimal standards, pertaining to the operation of programs for young children. The course focuses on establishing a new center, administrative functions and advocacy. *It is suggested that you take this class at the end of your ECE course of study.*

### **ECE 227 Methods/Techniques: Curriculum Development**

3 Credits

Prerequisite: ECE 238 or PSY 238 is preferred

This course includes the foundation of curriculum development. It addresses the overall and specific processes of planning appropriate learning environments, materials and experiences that meet the developmental needs of individuals or groups of children from birth through age eight.

### **ECE 238 Child Development**

4 Credits

Prerequisite: ENG 121, ASSET written score of at least 43 and reading score of at least 41, or permission of instructor

This course explores the growth and development of the child from conception through the elementary school years. Physical, cognitive, emotional, psychosocial and environmental factors are emphasized. The concept of the whole child and how adults can provide a supportive environment for children is also discussed. You construct a case study of a child through guided independent observation exercises.

### **ECE 287 The Exceptional Child in the Integrated Setting**

3 Credits

Prerequisite: ECE 238

This course explores developmental progression, activities, techniques and learning strategies to be used within the integrated environment. You study accommodations and adaptations for the unique and varied needs of children from birth through elementary school. You also examine a wide range of exceptionalities.

### **ECE 291 Special Topics: Early Childhood Education**

1/2 -3 Credits

This course is designed for flexible utilization, covers specific topics and current issues in early childhood education. This course is offered as needed for credit appropriate to the topic and each offering includes a description of the topic(s).

### **ECE 295 Childhood Education Professional Issues**

3 Credits

Prerequisite: ECE 238 in addition to 20 credit hours in ECE coursework; ASSET written score of at least 43 and reading score of at least 41, or permission of instructor

This course provides a discussion of the commitment and responsibility involved in being an early childhood professional. The course discusses current practices, early childhood issues/advocacy and the roles/responsibilities of the early childhood professional.

**ECONOMICS****ECO 118 Labor Relations**

3 Credits

This course is an in-depth analysis of labor economics, collective bargaining, labor laws and the role of government in labor relations.

**ECO 119 Applied Economics**

1-4 Credits

This course emphasizes basic economics that relate to the role of the small business person and the wage earner.

**ECO 175 Government and the U.S. Economy**

3 Credits

This course deals with development of government's role in the national economy.

**ECO 201 Principles of Macroeconomics**

3 Credits

This course studies the American economy, stressing the interrelationship among the household, business and government sectors. You explore saving and investment decisions, unemployment, inflation, national income accounting, taxing and spending policies, the limits of the market and government, public choice theory, the Federal Reserve System, money and banking and international trade.

**ECO 202 Principles of Microeconomics**

3 Credits

This course studies the firm in depth, the nature of cost and how these relate to the economy as a whole. It analyzes economic models of the consumer perfect competition, monopoly, oligopoly and monopolistic competition. You also explore economic issues including market power, population growth, positive and negative externalities, income distribution, poverty and welfare, discrimination and international economic interdependence.

**ELECTRICITY—  
INDUSTRIAL/  
COMMERCIAL****EIC 100 Electrical Construction and Planning**

4 Credits

Prerequisite: CON 105 or permission of instructor

This course teaches the planning of electrical system installations from blueprints through the completed job. Preparation of material lists, job sheets and time schedules for various phases of construction are included. It also emphasizes the National Electrical Code.

**EIC 105 Basics of AC and DC Electricity**

4 Credits

This course covers resistance, current, voltage and power in AC and DC circuits; measurements; computation of series and parallel circuits; circuit analysis and troubleshooting with basic test equipment.

**EIC 110 Electrical Installations I**

4 Credits

This course covers residential building wiring in conformance with the current National Electrical Code and local codes using nonmetallic cable. This course emphasizes proper use of tools and safety.

**EIC 120 Electrical Installations II**

Prerequisite: EIC 110 or permission of instructor

This course explores commercial and industrial building wiring in conformance with the current National and electrical Code and local codes using electric metallic tubing and other raceways. The emphasis is on proper use of tools and safety.

**EIC 130 National Electrical Code I**

4 Credits

This course teaches Chapters 1 through 4 of the National Electric Code and local code requirements for electrical installation.

**EIC 135 National Electric Code II**

4 Credits

Prerequisite: EIC 130 or permission of instructor

This course is a continuation of EIC 130. It covers chapters 5 through 9 of the National Electrical Code, including hazardous locations; special occupancies, conditions, equipment; and tables.

**EIC 150 DC Circuit Fundamentals**

4 Credits

Prerequisite: EIC 105, MAT 105 or equivalent

This course covers the principles of DC electricity and magnetism with emphasis on Ohm's, Kirchoff's and Watt's laws to analyze circuits' voltage current and power. Common measuring instruments and safety is also discussed.

**EIC 155 AC Circuit Fundamentals**

4 Credits

Prerequisite: EIC 105, 150 or permission of instructor

This course covers the principles of AC electricity, magnetism, inductive and capacitive circuits; use of phasors to represent AC quantities; the concept of reactive volt-amperes and power factor; and use of instruments, including VOM's and oscilloscopes. It explores the principles of polyphase alternating current systems; Wye and Delta circuit configurations and stresses safety procedures.

**EIC 160 Electrical Instruments and Measurements**

4 Credits

Prerequisite: EIC 105 or permission of instructor

This course covers the proper techniques for using electrical instruments, including volt/ohm, amp, phase rotation, oscilloscopes and recording meters. Instrument transformers for journeymen and in-plant electricians are also discussed.

**EIC 170 Solid State Devices and Circuits**

4 Credits

Prerequisites: EIC 105, 150, 155 or permission of instructor

This course explores the basic properties of diodes, transistors, triacs, SCRs and other solid state devices. Applications of solid state devices in control and power conversion and the circuits in equipment likely to be encountered in power installations are covered.

**EIC 190 Electrical Code Calculations**

4 Credits

This course discusses calculations used in the application of the National Electrical Code. Sizing of branch circuit and feeder conductors and calculating ratings of protective devices are emphasized.



## **Electricity**

### **EIC 205 Advanced Electrical Planning**

4 Credits

This course explores the planning and layout of large commercial and industrial electrical installations.

### **EIC 210 Advanced National Electrical Code**

4 Credits

Prerequisite: Permission of instructor

This course is an Advanced National Electrical Code course for the in-plant technician. It emphasizes interpreting NEC rules that apply to industrial/ commercial installations. Maintenance electricians and residential wiremen desiring to upgrade their knowledge of these rules can benefit from this class.

### **EIC 215 Advanced Code Calculations**

4 Credits

Prerequisite: Permission of instructor

This course is an extension of EIC 190. It emphasizes calculations for sizing conductors, conduits, fittings, protective devices, relays related to branch circuits, and feeders for motor loads. Other loads as they apply to industrial/commercial situations are also explored. Sizing of transformers and power factor correction calculations are discussed as well.

### **EIC 217 Electrical Estimating/Costing**

4 Credits

The fundamentals of electrical estimating, material takeoffs from prints, required labor hours, material loss allowances and scheduling to insure orderly work progress are all discussed in this course.

### **EIC 220 Industrial Electrical Controls I**

4 Credits

Prerequisites: EIC 105 or permission of instructor

This course studies the application of electrical and electromechanical sensing/ control devices; heating, ventilating and air conditioning applications, motor control, conveyor drives and other industrial applications. You design control systems to meet assigned conditions, use principles of relay logic to prepare correct ladder diagrams, and wire up, test and trouble-shoot their systems in the laboratory. The course stresses accuracy, safety and National electric Code requirements.

### **EIC 225 Programmable Controllers**

4 Credits

Prerequisite: EIC 105 and 220 or permission of instructor

This course studies the use of solid-state control equipment, primarily the programmable controller and associated solid-state sensors to control equipment, machinery or complete processes. Topics include concepts of solid-state logic, characteristics of solid-state sensors; conversions of relay logic control systems to programmable control systems; and microprocessor-based systems and remote control of processes. You design, implement and test control systems in the laboratory to meet specifically-assigned control problems. This course emphasizes accuracy, safety and National Electrical Code requirements.

### **EIC 230 AC/DC Machines: Theory and Applications**

4 Credits

Prerequisite: EIC 155 or permission of instructor

This course is a comprehensive study of the characteristics of DC, polyphase and single phase motors and generators and their industrial applications. Laboratory work includes parallel operation of generators, speed/ torque relationship in shunt, compound and series motors and operation of variable speed drives. This course stresses National Electrical Code requirements, maintenance and safety.

### **EIC 235 Transformers and Power Distribution**

4 Credits

Prerequisite: EIC 155 or permission of instructor

This course studies the theory of operating power and instrument transformers; modern methods of delivering electrical energy from point of generation to point of utilization. Single and polyphase, circuit connections, voltage regulation and short circuit calculations are verified in the laboratory. This course stresses safety, National Electrical Code requirements; installation and maintenance considerations.

### **EIC 240 Fire Alarm Fundamentals**

4 Credits

This course covers terminology, symbols, diagrams, devices, circuits and wiring. Basic layouts and principles involved in fire alarm system design and construction.

## **ELECTRONIC DIGITAL/COMPUTER TECHNOLOGY**

### **EDT 110 Direct Current Circuits**

7 Credits

This course is designed to give you a solid foundation in the theory and measurement of direct current (DC) circuits.

### **EDT 120 Alternating Current Circuits**

7 Credits

Prerequisite: EDT 110 or permission of instructor

This course is designed to give you a solid foundation in the theory and measurement of alternating (AC) circuits.

### **EDT 130 Digital Logic Devices of Electronics**

7 Credits

Prerequisite: EDT 120 or permission of instructor

This course introduces digital circuits applicable to computers and instrumentation. Code, logic gates, memory devices, counters, shift registers and Boolean algebra are also covered. Basic troubleshooting techniques are included. Emphasis is on electronic applications.

### **EDT 140 Linear Circuits**

7 Credits

Prerequisite: EDT 130 or permission of instructor

This course deals with operational amplifiers and their use as voltage followers, inverting and noninverting amplifiers, summing amplifiers, integrators and differentiators and applications of each. Bridge circuits used in sensing and measuring equipment and electronic instruments are included. Analog to digital conversion techniques and equipment as related to digital control of an analog system are also covered. Basic troubleshooting techniques are included. Emphasis is on electronic applications.

### **EDT 210 Computer Hardware**

7 Credits

Corequisites: EDT 220

This course prepares you for certification tests used by the Computing Technology Industry Association Part 1. *Red Rocks Community College has no control over changes made by this agency to its A+ Certification Program.*

**EDT 216 Microprocessor Programming Part A**

2 Credits

Corequisite: EDT 110

This course introduces the use of computers, and is designed for those students interested in electronics. An overview of programming and operating systems is presented.

**EDT 217 Microprocessor Programming Part B**

2 Credits

Prerequisite: EDT 216 or permission of instructor

Corequisite: EDT 130

This course is a continuation of EDT 216.

**EDT 220 Computer Troubleshooting and Support**

7 Credits

Corequisite: EDT 210

This course prepares you for certification tests used by the Computing Technology Industry Association Part 2. *Red Rocks Community College has no control over changes made by this agency to its A+ Certification Program.*

**EDT 230 Microprocessor In Networks Part 1**

7 Credits

Corequisite: EDT 240

This course provides a thorough understanding of the OSI networking model and its implementation. You use an assembler to write their own multi-layer network. This is part 1 of a 2-part course. A strong computer background is recommended prior to taking this course. *Red Rocks Community College has no control over changes made by this agency to its Certification Program.*

**EDT 240 Microprocessor In Networks Part 2**

7 Credits

Corequisite: EDT 230

This course provides a thorough understanding of the OSI networking model and its implementation. You use an assembler to write their own multi-layer network. This is part 2 of a 2-part course. A strong computer background is recommended to taking this course. *Red Rocks Community College has no control over changes made by this agency to its Certification Program.*

**EDT 260 NOVELL Certified CNE & Master CNE Part 1**

7 Credits

Prerequisite: EDT-220 or permission of department chair

This course prepares you for Certified Network Engineering tests used by NOVELL Inc., Part 1. *Red Rocks Community College has no control over changes made by NOVELL to its CNE Program.*

**EDT 260 Novell Certified CNE and Master CNE Part I**

7 Credits

Prerequisites: EDT 230 and 240

This course prepares you for Novell Certified tests. This course provides training for an individual with experience in computer hardware, DOS and computer software. Instruction includes system software interpreting and writing as well as troubleshooting techniques. The most important factor is the hands-on training in a real shop environment. This is part one of the four parts required in the Novell Master CNE program.

**EDT 261 Microsoft Certified Preparation for MCSE Part I**

7 Credits

Prerequisites: EDT 230 and 240

This course prepares you for Microsoft Certified tests. This course provides training for you if you already have some experience in computer hardware, DOS and computer software. Instruction includes system software interpreting and writing as well as troubleshooting techniques. The most important factor is the hands-on training in a real shop environment. This is part one of three parts required for the Microsoft MCSE program.

**EDT 270 Novell Certified CNE and Master CNE Part II**

7 Credits

Prerequisite: EDT 260

This course prepares you for Novell Certified Network Engineering tests. It includes network selection, design, installation, support and management. This course provides training for an individual with experience in computer hardware, DOS and computer software. Instruction includes system software interpreting and writing and troubleshooting techniques. The most important factor is the hands-on training in a real shop environment. This is part two of four parts required for the Novell Master CNE program.

**EDT 270 NOVELL Certified CNE & Master CNE Part 2**

7 Credits

Prerequisite: permission of department chair

This course prepares students for Certified Network Engineering tests used by NOVELL Inc., Part 2. *Red Rocks Community College has no control over changes made by NOVELL to its CNE Program.*

**EDT 271 Microsoft Certified Preparation for MCSE Part II**

7 Credits

Prerequisite: EDT 261

This course prepares you for Microsoft Certified tests. This course provides training for you if you already have some experience in computer hardware, DOS and computer software. Instruction includes system software interpreting and writing as well as troubleshooting techniques. The most important factor is the hands-on training in a real shop environment. This is part two of three parts required for the Microsoft MCSE program.

**EDT 280 Novell Certified CNE and Master CNE Part III**

7 Credits

Prerequisite: EDT 270

This course prepares you for Novell Certified Network Engineering tests. This course provides training for a CNE or equivalent with experience in computer hardware, DOS and computer software. Instruction includes system software interpreting and writing as well as troubleshooting techniques. This is part three of four parts required for the Novell Master CNE program.

**EDT 281 Microsoft Certified Preparation for MCSE Part III**

7 Credits

Prerequisite: EDT 261

This course prepares you for Microsoft Certified tests. This course provides training for an individual with experience in computer hardware, DOS and computer software. Instruction includes system software interpreting and writing as well as troubleshooting techniques. The most important factor is the hands-on training in a real shop environment. This is part three of three parts required for the Microsoft MCSE program.

## Electronic Digital/Computer Tech

### **EDT 285 Novell Certified CNE and Master CNE Part IV**

7 Credits

Prerequisite: EDT 270

This course prepares you for Novell Certified Network Engineering tests. This course provides training for a CNE or equivalent with experience in computer hardware, DOS and computer software. Instruction includes system software interpreting and writing as well as troubleshooting techniques. This is part four of four parts required for the Novell Master CNE program.

## **EMERGENCY MANAGEMENT AND PLANNING**

### **EMP 101 Introduction to Emergency Management**

3 Credits

This course presents a broad overview of an emergency management system and the importance of an integrated approach to managing emergencies. You formulate the elements of an integrated teamwork system and devise specific actions for improving their own contributions to local emergency management teams. The course is for all disciplines that work together in planning for or responding to emergencies.

### **EMP 105 Emergency Planning**

3 Credits

This course provides the skills and knowledge needed for hazard mitigation planning and implementation. You formulate a rationale for mitigation of natural hazard vulnerability; assess the applicability of proposed mitigation strategies; develop a hazard mitigation plan using the process, format and content. You also have the opportunity to diagnose the problems of a hypothetical hazard team, and propose changes to improve its operation and effectiveness. In addition, you are given a description of a region-unique hazard, in which they assess vulnerability, identify existing hazard mitigation systems, recommend mitigation activities, estimate cost, and develop a strategy for implementation of mitigation measures using HMGP funds.

### **EMP 106 Exercise Design**

11/2 Credits

Prerequisites: EMP 101, 105 or permission of instructor

This course provides knowledge and develops skills that enable you to train a staff and to conduct an exercise that tests a community's plan and its operational response capability.

### **EMP 107 Computer Systems Information**

3 Credits

This course provides you with knowledge and skills to operate computer programs designed to enhance planning and information to control and mitigate disasters and gather needed information to safely and effectively make strategic decisions.

### **EMP 108 Mass Casualty**

1 Credit

This course provides you with an understanding of the function, goals and operation of mock exercises and pre-planning. Hazards and the cause of these hazards and methods to correct them are discussed. You study the effects from hazards to life and property.

### **EMP 109 Community Emergency Response and Incident Command**

3 Credits

Prerequisites: EMP 101, 105 or permission of instructor

This course explores the dynamics of managing major emergency incidents. The National Incident Command System utilized in the instruction. Major incidents where large life, property, or economic losses are possible are studied. Actual incidents are discussed and analyzed. This course recognizes that learning from the experience of others in handling major emergencies is required in the preplanning of emergencies in our own communities.

### **EMP 110 Exercise Evaluation**

11/2 Credits

This course develops knowledge and skills that enable you to manage exercise evaluation activities before, during and after an emergency management exercise.

### **EMP 200 Hazard Mitigation Planning**

3 Credits

This course gives you a good working knowledge of the standards, regulations, and processes of planning and working in group activities. This course also helps students develop planning programs for hazard mitigation which includes exercises in the development of plans for mitigation of hazards.

### **EMP 240 Leadership and Influence**

1 Credit

This course enables you to lead and influence others in the demanding setting of emergency management by increasing their range of skills in a variety of interpersonal areas including conflict management, use of power, and group dynamics, as well as leadership and influence.

### **EMP 241 Decision Making and Problem Solving**

1 Credit

This course enables you to clearly identify a problem and its cause in order to determine the appropriate type of decision making style. Using a suggested process of problem solving, participants are able to apply creative solutions to both emergency and non-emergency situations.

### **EMP 242 Effective Communications**

1 Credit

This course is designed to sharpen the presentation and media skills of emergency management officials when giving and receiving information in emergency management contexts. The course addresses not only public speaking, but also other areas of communication, such as one-on-one interactions, small group discussions, written communication, listening skills and dissemination of public information through the media.

### **EMP 244 Developing Volunteer Resources**

1 Credit

This course is designed to improve your ability to deal with a broad range of issues in the management of volunteers. Issues covered include identification of tasks provided by organized groups which require volunteer services, skill definition and specification of qualifications, publicity and recruitment, skill development and maintenance, and motivation strategy that promotes continued involvement and quality performance.

## **ENGINEERING GRAPHICS TECHNOLOGY** *(Formerly Drafting Technology)*

### **EGT 100 Technical Drawing** 9 Credits

This course is for architectural and/or mechanical drafting majors, pre-engineering students and anyone seeking instruction in basic engineering board graphics. Course content includes use and care of equipment; drawing board techniques; orthographic, auxiliary, sectional and isometric projection methods; and sketching. You learn how to render drawings to ANSI, AIA and other applicable drawing standards.

### **EGT 110 Basic CADD Applications** 6 Credits

Prerequisite: EGT 100 or equivalent

This course serves all emphasis areas of engineering graphics. Course content includes fundamentals of layout, construction and dimensioning techniques as applied to two-dimensional drawings; systems and database management; and production of computer-generated drawings to ANSI, AIA and other applicable specifications.

### **EGT 120 Intermediate CADD Applications** 3 Credits

Prerequisite: EDT 110 or equivalent

This course serves all areas of technical graphics. Course content includes producing two-dimensional working drawings using applications of geometric construction, intersection and development methods; and animation techniques. Databases and file management systems are used in the learning experience to improve and increase production time of technical drawings.

### **EGT 130 Three-Dimensional CADD Applications** 3 Credits

Prerequisite: EGT 120 or equivalent

Fundamentals of three-dimensional models, two-dimensional extractions and file/ database manipulation are taught using construction methods of three-dimensional wire, three-dimensional thickness and solid models.

## **EMERGENCY MEDICAL SERVICES**

### **EMS 227 Emergency Medical Technician—Basic** 10 Credits

This course is designed in cooperation with the St. Anthony Hospital EMS department to train students to become certified Emergency Medical Technicians—Basic level. This course teaches you how to take vital signs of patients, perform basic life support (CPR), splinting and bandaging, prehospital care and treatment of trauma, illness, burns and care during transport to a hospital. This course meets all DOT Standards and upon successful completion students may take the Colorado State Department of Health, Emergency Medical Technician—Basic Certification exam.

### **EMS 237 Paramedic Technician\*** 23 Credits

This course is presented by St. Anthony Hospital Institute of Emergency Medical Services and teaches anatomy and physiology, roles and responsibilities, EMS systems, medical/ legal considerations and EMS communications. The course also explores rescue, major incident response, stress management, medical terminology, general patient assessment, airway and ventilation, pathophysiology of shock, general pharmacology, trauma and burns. Management of respiratory problems, acute abdomen, genitourinary, reproductive system, anaphylaxis, toxicology, alcoholism and drug overdose and abuse, infectious diseases, environmental emergencies, geriatrics, pediatrics, OB/Gyn/neonatal problems and behavioral emergencies are also covered in detail.

*\* Completion of course work at Red Rocks Community College does not guarantee acceptance into the St. Anthony Hospital Paramedic Program.*

### **EMP 246 Capstone Seminar** 1/2 Credit

The PDS Capstone Seminar is for emergency management personnel who have completed all field Professional Development Series courses. This seminar builds on the concepts offered in other courses and introduces other topics of interest to the career emergency management professional. Topics include liability issues in emergency management, media considerations, FEMA perspectives, stress management and critical incident stress debriefing, human behavior in disasters, team building, motivation and community awareness.

### **EMP 280 Public Policy** 1 Credit

This course heightens awareness of public policy issues inherent in emergency management. Discussions and exercises cover public policy analysis, executive roles, hazard evaluation, establishing public policy and media relations.

### **EMP 291 Public Information** 3 Credits

This course provides you an opportunity to practice and expand skills. It is a highly interactive course that includes workshops on writing, public speaking, media interviews, and awareness campaign development. This course also discusses media relations and public information planning.

### **EMP 292 Radiological Fundamentals (FCRRT)** 2 Credits

This course provides local radiological response team members and others with information on radiation protection, radiation detection instruments, radiological monitoring techniques, radiological hazards and protective actions, team building, and basic procedures to support planning for emergency/ recovery activities in the event of a radiological incident.

### **EMP 297 Cooperative Education (Internship)** 1-6 credits

This course must be arranged through the office of Cooperative Education and with approval of your Advisor. This Internship allows students to gain experience and knowledge from on-the-job training. Positions are non-paid.

## Engineering Graphics Tech

### **EGT 220 Technical Illustration**

3 Credits

Prerequisite: EDT 120 or equivalent

This course includes preparing illustrations from engineering drawings, production parts, photographs, prototypes and verbal descriptions. Application of isometric and free-hand techniques apply illustration to reference layouts, brochures and technical manuals dealing with assembly, installation, operation, maintenance and repair of machines, tools and equipment. Preparation of drawing is on the board and CADD.

### **EGT 235 Rendering Methods**

3 Credits

Prerequisite: EGA or EGM 231 or equivalent

This course explores some of the graphic techniques used to model two-dimensional and three-dimensional architectural and/or mechanical drawings.

### **EGT 255 Model Building**

3 Credits

Prerequisite: EGA or EGM 231 or equivalent

Methods of constructing architectural models and/or mechanical prototype models are discussed and applied.

### **EGT 260 Portfolio Presentation**

1 Credit

Prerequisite: EGA or EGM 131 or equivalent

You will learn interviewing skills and how to prepare a portfolio. Interviews with industry professionals provide some expertise on what to expect in industry, resume writing, and cover letters. How to interview a company, job shops and what salaries to expect are covered as well.

### **EGT 265 Presentation Graphics**

3 Credits

Prerequisite: EGA or EGM 241 or equivalent

Techniques used to create camera-ready artwork from architectural and/or mechanical drawings are applied in this course. Computer animation is also introduced.

### **EGA 121 Intermediate CADD—Architectural**

3 Credits

Prerequisite: EGT 120 or equivalent

This course is for those of you seeking an architectural applications emphasis.

### **EGA 131 Three-Dimensional CADD—Architectural**

3 Credits

Prerequisites: EGA 121 and EGT 130 or equivalents

Advanced applications of three-dimensional construction techniques are applied to an architectural construction model. The 3-D model is constructed using current building methods, UBC and other local codes.

### **EGA 203 Site Orientation**

1 Credit

Prerequisite: EGA 131 or equivalent

The effects of environmental and physical factors such as topography, climate, orientation, view, solar, wind and sound have on building design are covered.

### **EGA 204 Plot Plan Layout**

1 Credit

Prerequisite: EGA 131 or equivalent

Legal descriptions, plot plan requirements and surveyors notes are used to create plot and plat drawings.

### **EGA 205 Exterior Design**

1 Credit

Prerequisite: EGA 131 or equivalent

Factors influencing design of homes, such as review boards, codes, site considerations, neighborhoods, access and style applied to residential architecture are presented in this course.

### **EGA 206 Foundation Systems**

1 Credit

Prerequisite: EGA 131 or equivalent

Types, components and design considerations of foundations applied to residential construction are examined in this course.

### **EGA 207 Framing Systems**

3 Credits

Prerequisite: EGA 131 or equivalent

Platform, post and beam, timber, balloon and steel framing methods applied to residential architecture are discussed in this course.

### **EGA 208 Floor Systems**

3 Credits

Prerequisite: EGA 131 or equivalent

Wood and concrete floor systems applied to residential architecture are discussed in this course.

### **EGA 209 Roof Design**

2 Credits

Prerequisite: EGA 131 or equivalent

How floor plans and site elevations influence roof designs, and the typical roof designs applied to residential architecture are discussed in this course.

### **EGA 212 Electrical Plans**

1 Credit

Prerequisite: EGA 131 or equivalent

Circuits and symbols of electrical plans as they relate to architectural drawings are studied and applied in this course. Graphic conventions used to represent electrical plans are applied to drawings.

### **EGA 213 Plumbing Plans**

1 Credit

Prerequisite: EGA 131 or equivalent

Residential plumbing is discussed and the influence plumbing has on the design of a building. Graphic conventions used to represent plumbing plans are reviewed and applied to drawings.

### **EGA 214 HVAC Plans**

1 Credit

Prerequisite: EGA 131 or equivalent

Requirements and applications of heating, ventilation and air conditioning are studied and discussed. The application and HVAC plans and design considerations are applied to drawings.

### **EGA 215 Windows and Doors**

1 Credit

Prerequisite: EGA 131 or equivalent

Design factors and product information are studied and discussed in this course. Graphic representation in elevation and cross-section are applied.

### **EGA 216 Millwork and Cabinet Layout**

1 Credit

Prerequisite: EGA 131 or equivalent

This course studies the selection and application of millwork and cabinets and their influence on the design of a building or remodel.

### **EGA 217 Stair Construction and Layout**

1 Credit

Prerequisite: EGA 131 or equivalent

A variety of stair designs are studied and applied to residential drawings. The emphasis of this course is the influence of stair design on building layout, design and applications of UBC code.

### **EGA 218 Fireplace Construction and Layout**

1 Credit

Prerequisite: EGA 131 or equivalent

Fireplace styles and design criteria are studied and discussed in this course. Use of cross-sections and elevations are emphasized.

### **EGA 231 Architectural Design/Drafting I**

6 Credits

Prerequisite: EGA 131 or equivalent

Fundamental understanding of building design, concepts and construction methods are developed by preparing working drawings with necessary details for framing, brick and steel construction. Four basic designs are used as models: the one story or ranch, the one and one-half story, the two story and the split-level. Only one design is chosen and a full set of detail drawings produced.

### **EGA 241 Architectural Design/Drafting II**

6 Credits

Prerequisite: EGA 231 or equivalent

Ideas, sketches and layouts are used to create working drawings of a customized design with an emphasis in remodeling and renovation. Detailed construction drawings are produced using CADD two- and three-dimensional applications per AIA, UBC and local codes.

### **EGM 121 Intermediate CADD—Mechanical**

3 Credits

Prerequisite: EGT 120 or equivalent

This course is for those seeking a mechanical applications emphasis. Two-dimensional drawings of gears, cams, fasteners, linkages and mechanical assemblies are produced to increase an understanding of CADD applications and improve basic mechanical design concepts.

### **EGM 131 Three-Dimensional CADD—Mechanical**

3 Credits

Prerequisites: EGM 121 and EGT 130 or equivalents

Advanced applications of three-dimensional construction techniques are applied to a mechanical assembly.

### **EGM 205 Assembly and Detail/GP & T**

3 Credits

Prerequisite: EGM 131 or equivalent

This course provides information on the interpretation and use of geometric positioning and tolerance symbols and terms as presented in ANSI (ASME) Y14.5M specifications. Use of datums, feature control, basic dimensions, geometric tolerances, material condition, position tolerance and how these symbols and techniques apply to assembly and detail drawings requiring a high level of machine technique as it applies to the aerospace industry.

### **EGM 215 Mechanisms and Drives**

3 Credits

Prerequisite: EGM 131 or equivalent

This course includes linkage mechanisms, gears, cams and drives such as those used in hydraulics and pneumatics. Use of vendor catalogs and specifications are stressed during the design process.

### **EGM 231 Mechanical Design/Drafting I**

6 Credits

Prerequisite: EGM 131 or equivalent

This course introduces the concept of multiple part mechanical assembly and detail drawings. Included may be cast, machined, welded and purchased parts and operating mechanisms. Part call-outs, material lists, drawing organization and appropriate dimension systems such as precision and/or metric applications are included.

### **EGM 241 Mechanical Design/Drafting II**

6 Credits

Prerequisite: EGM 231 or equivalent

All drafting courses for an AAS degree in Mechanical Drafting culminate in one or more final projects in design problems in areas such as robotics, aerospace, jig and fixture, tool and dies and biomedical. Projects require full documentation details and presentation of graphics and documentation.

### **EGM 245 Manufacturing Processes**

3 Credits

Prerequisite: EGM 241 or equivalent

This course provides an introduction to manufacturing processes, product development, materials, material specifications, casting and forging methods, design techniques, machining processes, machine features and drawing representation applying ANSI (ASME) Y14.5M specifications.

### **EGM 248 Hardware and Welding Processes**

3 Credits

Prerequisite: EGM 241 or equivalent

This course covers a variety of fastening devices and welding processes. Content of fasteners curriculum includes screw threads, thread cutting, thread forms, thread representations and notes, washers, dowels, pins, rings key and key seats, rivets, springs and customized fasteners. The welding units provides an introduction to processes, welding drawings and symbols, weld types and symbol usage.

## Energy Technologies

# ENERGY TECHNOLOGIES

### **ENT 101 Introduction to Energy Technologies**

3 Credits

This course introduces the energy technologies in use today and those that are in the research stage as possible alternatives. Among the technologies presented are active solar heating, passive solar heating, wind energy systems, biomass, photovoltaics, co-generation, low and high head hydro, hydrogen, geothermal, power towers and energy storage systems.

### **ENT 125 Basic Solar Design and Layout**

3 Credits

Prerequisite: ENT 101

This course presents you with a practical design approach to solar energy systems and collector piping and ducting layouts as they apply to buildings. This course also explores construction techniques for new and retrofit applications.

### **ENT 126 Solar Collectors**

3 Credits

Prerequisite: ENT 101

This course introduces the principles of design and operation of solar panel arrays, material analysis and construction features of flat plate collectors, mounting techniques and construction of a basic air and liquid collector array. It also covers distribution from collectors to storage and building, mechanical and plumbing codes as they apply to the solar industry.

### **ENT 127 Solar Systems Estimating and Marketing**

4 Credits

Prerequisites: ENT 101, 125, 126

This course covers cost estimating for active solar systems and marketing techniques for sales of solar systems.

### **ENT 132 Basic Solar Controls**

4 Credits

This course familiarizes you with the controls in general use today for solar domestic hot water systems. Numerous controller brands are worked with in order to understand the various operating characteristics. Add-on options, such as freeze protection and over-temperature protection and various methods of their implementation are discussed. Troubleshooting on a systems level and preinstallation checkout of various controllers are covered.

### **ENT 141 Passive Solar Systems I**

3 Credits

Prerequisite: ENT 101

This course presents a state-of-the-art study on the design and installation techniques of passive/natural solar energy systems.

### **ENT 145 Passive Solar Retrofit**

3 Credits

Prerequisites: ENT 101, 141

This course explores the principles and primary features behind a wide range of passive solar options for existing homes. The course also provides instruction concerning the site survey and energy conservation measures prior to installing retrofit design and construction details on various passive retrofit projects. Analysis of performance of each type of retrofit are also taught.

### **ENT 153 Renewable Energy Construction**

4 Credits

This course introduces solar construction techniques, terminology and construction materials in detail. Moisture and air quality in tight construction are also covered, as well as an overview of the building shell and interior walls.

### **ENT 225 Solar Domestic Hot Water Systems**

3 Credits

Prerequisites: ENT 101; PLU 107

This course provides a working knowledge of sizing, installation, maintenance of solar domestic hot water systems, residential applications, components, parts and cost efficiency analysis.

### **ENT 226 Solar Panel Installation**

4 Credits

Prerequisites: ENT 101, 126; PLU 100

This course presents the installation of all types of panels on all types of roofs. Vertical wall mounting techniques are also covered.

### **ENT 242 Passive Solar Systems II**

4 Credits

Prerequisites: ENT 101, 141

This course presents an advanced study of passive design in buildings, advanced calculations and material and cost efficiency analysis.

### **ENT 295 Passive Solar Design Project**

5 Credits

Prerequisite: Permission of instructor

This course is a technical project including a written and approved proposal, scheduled progress reports and a finalized set of drawings.

### **ENT 298 Solar Lab**

3-12 Credits

Prerequisites: Limited to second-year students, permission of instructor

This course enables you to improve your basic solar construction skills, such as soldering, brazing, use of power tools, panel design and construction.

## ENGLISH

*Writing and reading assessment is required for you if you are a new student before or during registration. The results are used to advise students into courses in which they are prepared to succeed.*

### **ENG 031 Learning Unlimited English Review**

1 Credit

This course is intended for those who want to improve or review grammar and writing skills in order to pass standardized tests, prepare for course work or enhance their ability in everyday grammar, usage and writing. This course is totally individualized and self-paced.

### **ENG 094 Sound and Spelling**

1-3 Credits

This is a refresher course in spelling and pronunciation. It emphasizes understanding dictionary pronunciation keys, spelling rules, vocabulary and spelling problems common to college level writing. It provides for oral and written approaches to improve spelling ability.

### **ENG 100 Composition Fundamentals**

3 Credits

Prerequisite: An ASSET written score of 40+ and a reading score of 38+

This course prepares you to enter freshman composition and introductory technical writing courses. This course emphasizes basic sentence structure, grammar and punctuation, and paragraph development.

**ENG 121 English Composition I**

3 Credits

Prerequisite: A grade of "C" or higher in ENG 100 and an ASSET written score of 43+ and a reading score of 41+

This course emphasizes the planning, writing, and revising of compositions and the development of critical/logical thinking and reading skills. You will write a minimum of five essays that stress analytical, evaluative, and persuasive/argumentative writing.

**ENG 122 English Composition II**

3 Credits

Prerequisite: ENG 121

This course enables you to produce writing that effectively uses research. You learn to analyze, summarize, synthesize, evaluate, and interpret a variety of information from primary and secondary sources. This course also covers mechanical issues necessary for composing research papers, including outlining, paraphrasing, incorporating direct quotations, documenting information (internal and works cited pages), writing styles, and library skills.

**ENG 131 Technical Writing**

3 Credits

This course develops skills you can apply to a variety of technical documents and job needs. You learn principles for organizing, writing, and revising clear, readable documents for industry, business, and government.

**ENG 215 Play Writing**

3 Credits

This course enables you to learn and practice play writing techniques. Elements of dramatic structure, dialogue, styles, and theatrical practices are emphasized. This course is co-scheduled with THE 215 and may be taken as ENG 215 or THE 215 but not both.

**ENG 221 Creative Writing I**

3 Credits

Prerequisite: A grade of "C" or higher in ENG 121 or 131, an ASSET written score of 43+, a reading score of 41+, or permission of the instructor

This course introduces the imaginative uses of language and composing techniques and terminology necessary for the creation and appreciation of short fiction and poetry. Instruction consists of discussions, readings and in-class critiques of your work.

**ENG 222 Creative Writing II**

3 Credits

Prerequisite: ENG 221 or permission of instructor

This course continues the development of written expression in such forms as poetry, fiction, and/or nonfiction writing.

**ENG 225 Topics In Advanced Composition**

1-3 Credits

This course deals with specific themes and structures relating to uses of the English language. Lessons range from exercises in mechanical structures to explorations of implications for human communication and action.

**ENGLISH AS A SECOND LANGUAGE****ESL 090 ESL Spelling/Vocabulary**

3 Credits

This course is designed for you if you are without an educational background in English. Basic spelling principles and fundamental vocabulary are taught with an emphasis on auditory perception to increase listening and speaking abilities.

**ESL 091 ESL Communications**

3 Credits

This course is for those students with limited English speaking ability. The course emphasizes developing oral communication skills. You practice listening/ speaking for everyday survival as well as preparation for higher-level ESL courses.

**ESL 092 ESL Reading**

3 Credits

This course is usually offered at the basic, intermediate and advanced levels. You progressively increase their vocabulary while learning to recognize thematic ideas and build skills toward comprehension of the sophisticated reading materials in a college classroom.

**ESL 093 ESL Grammar**

3 Credits

This course is usually offered at the basic, intermediate and advanced levels. You progressively master the structures of English grammar while learning to integrate its use in reading, writing and conversation.

**ESL 094 Writing**

3 Credits

Usually offered at the basic, intermediate and advanced levels. You begin with informal writing tasks and progress toward the more formal modes of academic writing. Emphasis begins with coherent sentences and builds through well-structured paragraphs to unified short essays

**ESL 095 ESL Intensive**

8 Credits

This is an intensive English program which prepares ESL students and others to succeed in contemporary everyday interactions in personal, business and college environments. This program develops comprehensive skills in grammar, writing, reading, listening, conversation and pronunciation and consists of three levels including basic through advanced. Placement is determined during orientation prior to the first class.

**ESL 096 ESL Communication for Business**

3 Credits

This course is usually offered at the intermediate and advanced levels for those who are not yet ready for college level courses but would like to improve their English through reading, writing and conversation with specific emphasis on business related material. Placement is determined during orientation prior to the first class.

**ESL 098 TOEFL Preparation**

3 Credits

This seminar course is offered for credit or non-credit (without a grade). You study how to improve your scores on all sections of the TOEFL exam (Listening Comprehension, Structure and Written Expression, and Vocabulary and Reading Comprehension), using sample tests and preparation exercises.



## **ENVIRONMENTAL AND SAFETY TECHNOLOGY**

### **ENV 101 Introduction to Environmental Science**

4 Credits

This course introduces you to the basic concepts of ecology and the relationship between environmental problems and biological systems. This course also includes discussions on biology, chemistry, geology, energy, natural resources, pollution and environmental protection.

### **EST 107 Hazardous Materials Operations**

3 Credits

This course studies the physical and chemical properties of hazardous materials, hazard recognition, risk assessment, incident analysis, information sources, container behavior, personal protective equipment, decontamination and defensive response actions to hazardous material emergencies. The course is designed for personnel responding to hazardous material emergencies and is based on OSHA and NFPA requirements.

### **EST 112 Chemistry of Hazardous Materials**

4 Credits

This course introduces the fundamental concepts of chemistry and their application to hazardous chemicals. Topics include chemical and physical properties of matter, chemical bonding and specific characteristics and chemical basis for hazards of flammable liquids and solids, oxidizing agents, corrosives, toxic compounds, explosives, radioactive materials and cryogenic and compressed gases.

### **EST 132 Environmental Health and Safety**

3 Credits

This course presents the fundamentals of health and safety during the handling of hazardous materials and wastes. The course is based on OSHA requirements and includes topics in hazardous materials identification, chemistry, toxicology, general safety procedures and emergency response and hazardous waste clean up operations.

### **EST 151 Introduction to Environmental Laws and Policies**

3 Credits

This course introduces you to the framework of federal and state environmental regulations. It includes an overview of regulatory authority and the requirements of the National Environmental Policy Act (NEPA), the Clean Air Act, Clean Water Act, Resource Conservation and Recovery Act and the Superfund.

### **EST 211 Pollution Prevention**

3 Credits

This course presents information on hazardous waste minimization and reduction. Emphasis is placed on waste minimization and source reduction techniques and program implementation.

### **EST 225 Air Pollution**

3 Credits

This course examines the requirements of the Federal Clean Air Act and the Colorado Air Quality Control Act. Topics include stationary and mobile sources of air pollution, emissions inventories, emissions estimation, air dispersion modeling, air pollution treatment technologies and indoor air pollution.

### **EST 231 Site Remediation**

3 Credits

This course covers the techniques or actions for handling a hazardous substance release into the environment. Topics covered include methods to prevent or minimize the release, treatment technologies, monitoring, disposition of hazardous wastes and contaminated materials and other control activities.

### **EST 241 Environmental Sampling**

4 Credits

All aspects of environmental sampling are presented in this course. Presentation of course topics are followed by field work in which you will sample groundwater, surface water, drums, tanks, soil and air. Course presentations include sampling techniques and methodology, sample preservation, packaging and shipment as well as sample control.

### **EST 254 Emergency Response Hazardous Materials Technician**

6 Credits

This course provides first responders with advanced knowledge of hazardous materials handling and incident mitigation. The course covers competencies required by OSHA and NFPA for Hazardous Materials Technicians. Subjects covered include chemical, physical and toxicological concepts, effects of exposure to responders, personal protective equipment, decontamination, site safety plans, Incident Management systems, container design, risk and incident assessment, hazard control and monitoring equipment.

### **EST 261 RCRA Compliance**

3 Credits

This course presents the regulations, procedures, policies and directives for hazardous waste compliance and inspections according to the Resource Conservation and Recovery Act (RCRA). The specific generator, transporter, and treatment, storage and disposal (TSDF) requirements are covered in detail. The course includes the relationship between EPA, state officials and businesses for the implementation of RCRA inspections.

### **EST 265 Environmental Auditing**

3 Credits

The purpose of an environmental audit is to determine facility compliance with environmental regulations. This course presents an in-depth study of the audit process and includes liability and ethical issues, regulatory compliance, how to prepare for and complete an audit, report preparation and use of findings and benefits of an audit program.

### **EST 268 Site Assessments**

3 Credits

This course prepares you for a Phase I Site Assessment for property transfers or as required by a property or regulatory investigation. You actually prepare a Phase I Site Assessment during the course.

**EST 270 Risk Assessment**

3 Credits

This course covers the basics of the evaluation of the environmental and/or health risk resulting from exposure to a pollutant. The course reviews the exposure and toxicity assessment process and the estimation of risk.

**EST 280 Environmental Compliance**

3 Credits

This course provides you with opportunities to study special topics of interest or significance or are current environmental concerns. Topics vary but follow important and current regulatory and industry issues.

**EST 290 Transportation of Hazardous Materials**

3 Credits

This course introduces you to the Department of Transportation (DOT) regulations pertaining to the transportation of hazardous materials and wastes. The course includes topics in the selection of proper shipping names, completion of shipping papers and manifests, shipper, carrier and driver responsibilities and the requirements for packaging, marking, labeling, placarding and loading and unloading hazardous material shipments.

**EST 295 Environmental Management**

3 Credits

This course examines international and global perspectives on Environmental Health and Safety (EHS). The course helps you understand the complicated network of national and international organizations developing these standards. Topics covered include standards development, guiding principles for business, environmental management systems such as ISO 14000 and harmonized standards of the European Union.

**FILM/VIDEO TECHNOLOGY****FVT 105 Video Production I**

3 Credits

Corequisite: FVT 160

This course is a hands-on introduction to video production. You work in pairs structuring and shooting original projects to be edited in FVT 160. You are responsible for learning and handling departmental cameras, tripods and lights while working on projects outside of class time. Class time is divided between examining video production in the textbook and production planning.

**FVT 150 Development of Film Expression**

3 Credits

This course examines the nature and structure of film/video expression concentrating on the way directors, editors and cinematographers use visual techniques to serve the narrative. You watch films in their entirety and analyze them for their mise en scene (lighting, composition, camera position and movement, lens, depth of field and the use of screen space) and editing techniques. This course transforms you from a passive to an active viewer of film/video.

**FVT 153 Introduction to 16mm Film Production**

3 Credits

This course is an introduction to the processes and considerations involved in film production. The course covers film stocks, laboratory and processing, crew positions and responsibilities, rudimentary lighting and exposure considerations. This is a course that involves both textbook and hands-on work.

**FVT 155 Script Writing for Film/Video**

3 Credits

This course develops your screenwriting skills. It focuses on the basic format of the craft, scene construction, genre conventions, three act structure, characterization and idea generation. You develop and complete a shootable script for a thirty minute film/video production by the end of this course.

**FVT 160 Video Post Production I**

3 Credits

Corequisite: FVT 105

You edit two production projects in this course while completing other editing assignments and learning the basics of broadcast signal, VTR operations, vectorscope, waveform monitors, timecode, edit decision list creation and editing aesthetics. You are expected to work on the Sony, JVC, and Panasonic cuts only edit systems, both in and outside of class time.

**FVT 200 Video Production II**

3 Credits

Prerequisite: FVT 105, 150, 160

Corequisite: FVT 215

You engage in more advanced productions using more sophisticated techniques and equipment in completing two original video productions. Preproduction planning and budgeting, working with actors and resource management with the aim of maximizing production value are stressed.

**FVT 205 Film/Video Camera Equipment and Techniques**

3 Credits

Prerequisite: FVT 105, 150, 160 or permission of instructor

This course examines how video and 16mm cameras work, and various techniques used in composition and the acquisition of images. Lenses, light, filters, formats, CCD's, cranes, dollies, and jib-arms are discussed and utilized. The narrative importance of different camera angles, movements and focal planes are analyzed. You are required to shoot specific exercises both in and out of class.

**FVT 206 Film/Video Lighting and Grip**

3 Credits

Prerequisite: FVT 105, 150, 160 or permission of instructor

Basic lighting equipment (lights, stands, nets, flags, grids, diffusion, light meters, waveform, etc.) are covered. Lighting aesthetics in both interior, exterior, location and studio settings; lighting for closeups, large areas and product shots and balancing for color temperature are explored.

## **Film/Video Tech**

### **FVT 208 Sound for Film and Video**

3 Credits

Prerequisite: FVT 105, 150, 160

This course covers sound acquisition (equipment and techniques), matching sound to image (perspective and sync), as well as post production methods (ADR, foley, voice over, music) on both analog and digital formats. This is a hands-on course using professional standards and teaches students to maintain creative control over audio.

### **FVT 209 Production Management Techniques**

3 Credits

Prerequisite: FVT 105, 150, 160

This course is one of Colorado's finest, most in depth production management courses. You break down a one hour TV show into its component parts, then plan and schedule the shoot using production boards. You complete a full professional budget for the shoot including pre-production, production and post-production considerations.

### **FVT 215 Video Post Production II**

3 Credits

Prerequisite: FVT 105, 150, 160

Corequisites: FVT 200

You edit your Production II projects utilizing A/B roll techniques with Beta SP output as well as completing other assignments. Editing aesthetics, cutting on action, cutting for narrative, rhythm editing, and cutting for continuity are stressed. You use Video Toaster 4000, Studio 16 digital audio, and United Media edit controller (CMX) and Alladin Pinnacle as well as the Sony PVE 500 A/B roll controller both in and out of class.

### **FVT 220 16mm Production**

3 Credits

Prerequisites: FVT 105, 150, 153, 160

This course explores the 16mm crystal sync camera and the crystal Nagra for sound sync procedure. Other areas covered during production of a class project include crew positions and responsibilities, lighting, story boarding, film stocks and labs and the telecine process. You shoot on film and then edit on video.

### **FVT 254 Introduction to Digital Editing—Adobe Premiere**

3 Credits

Prerequisite: CIS 110, FVT 105, 150, 160

This course is an introduction to digital nonlinear video editing in our high end Mac lab. Digitizing, compression boards, outputting and integrating with other software (After Effects) are covered. Video, audio, stills and graphics are integrated in a final project output to tape or CD.

### **FVT 260 Screenwriting for Feature Films**

3 Credits

Prerequisite: FVT 105, 160, 150, and 155

This course is for students who are interested in writing for feature film markets. You develop a 30-40 page "treatment" for a feature length screenplay including all of the elements (scenes, structure and characters) of the finished script without dialogue and detail.

### **FVT 265 Advanced Screenwriting for Feature Films**

3 Credits

Prerequisite: FVT 105, 150, 155, 160, and 260

This course enables you to develop treatments written in FVT 260 into finished feature length (120 page) screenplays. By the end of the course you should have a marketable, polished script. Experienced writers with a script under development may also join this course.

### **FVT 270 Film/Video Production III**

3 Credits

Prerequisite: 105, 150, 155, 160, 200, 206, 209, 215

Corequisite: FVT 254 or 280

This course is designed for advanced students. Individual projects are initiated using film or video for acquisition, mastered or transferred to Beta SP or digital formats, and cut on Avid or another digital nonlinear online system with multiple audio tracks. This course is for the creation of a show reel leading to employment in the industry. You are expected to perform to industry standards of professionalism.

### **FVT 280 Introduction to AVID Media Composer**

Prerequisite: 105, 150, 155, 160, 200, 215, 254

Corequisite: FVT 270

You are introduced to the four AVID Media Composer 8000's in the AVID Training Center. Inputting, outputting, editing on the timeline, database management, titling, effects and sound are covered. You are allotted time outside of class to learn the system and edit FVT 270 projects.

### **FVT 290 Acting/Directing Workshop**

Students direct several scene studies with professional actors while classmates and faculty critique the interpretation and realization.

### **FVT 297 Cooperative Education**

Prerequisite: FVT 105, 150, 160, 200, 215

This is an internship that is arranged by you and approved by the instructor. You are required to work a minimum of 160 hours in the industry. Internships may include KRMA Channel Six, Arvada Community Television, Denver Community Television, Dewey/Obenchain Films, Denver Center Media, Reel Things, Lighting Services Inc. or other places.

### **FVT 299 Independent Study**

Prerequisite: FVT 105, 150, 160, 200, 215, 270 or permission of instructor

This independent study course includes advanced projects for students in film or video, production or post-production.

**FINANCIAL SERVICES**

*FIS courses (required or electives) are not offered at Red Rocks Community College. Contact the American Institute of Banking (AIB) at Independence Plaza, 1050 17th Street, Suite 450, Denver, CO 80265, (303) 294-0556.*

**FIS 205 Bank Investments and Funds Management**  
2 Credits

This course provides you with the knowledge and skills they need to implement their bank's investment and funds management strategies to earn an acceptable return without undue risk.

**FIS 206 Law and Banking**  
3 Credits

This course provides reviews the legal aspects of banking. It equips you with a clear, non-technical understanding of all aspects of the legal system that directly affects banks.

**FIS 210 Consumer Lending**  
3 Credits

This course provides an overview of the consumer credit operation by examining the role of consumer credit in overall banking operations. This course also offers an understanding of the consumer credit function within a bank.

**FIS 212 Commercial Lending**  
3 Credits

This course focuses on the commercial lending environment and how the commercial lending business is organized. You learn how the commercial lending business is organized and how it contributes to the profitability of the institutions and how the commercial lending process functions from the initial loan application through collection.

**FIS 217 Principles of Banking**  
3 Credits

This is an introductory course which examines almost every aspect of banking. It provides a comprehensive look into the diversified services offered by the banking industry. This course includes materials on bank accounting, pricing and profitability and expands the discussion on the personnel and security functions of the bank.

**FIS 218 The Trust Business**  
3 Credits

This course reviews the trust department, including how the trust department fits into the overall banking business, the service it provides and, in general, how those services are delivered. The changing role of the trust department is highlighted.

**FIS 219 Residential Mortgage Lending**  
3 Credits

This course focuses on the residential mortgage lending environment and gives you a better understanding of the fundamentals of mortgage lending. You learn to describe the mortgage lending industry, including the market, customer base, government regulations and alternative mortgage instruments. You also learn to identify the benefits, requirements and classifications of mortgage insurance; process and underwrite a residential mortgage loan; market residential loans; and identify general principles of real estate. You also are able to describe the secondary mortgage market and how mortgage-backed securities have become important to mortgage lenders in the market.

**FINE WOODWORKING**  
*(Also see Carpentry.)*

**FIW 105 Joinery**  
1-4 Credits

This course explores different types of wood connections utilizing both hand and power tool techniques in frame and carcass joinery. You are expected to cut, fit and assemble projects to demonstrate their knowledge.

**FIW 106 Plane Making**  
1-4 Credits

This course explores the tradition of a craftsman making their own tools and offers an explanation of that ideal within the creation of hand planes. You determine what type of construction techniques to use in building their project through research of old methods and examination of current practices with the final outcome demonstrated by using their new tool.

**FIW 108 Toolmaking and Jigs**  
1-8 Credits

This course is intended to broaden the capabilities, speed and accuracy of the woodworker through the utilization of jigs and specialty tools. You are expected to construct several projects of progressing difficulty. Examples might be a box joint jig, a router table, a mock dovetail jig and spring pole lathe. Instructor involvement is required for selection of projects.

**FIW 110 Furniture Repair**  
1-8 Credits

This course recognizes the need to repair and restore furniture and teaches you how to make moulds, repair veneers, replace broken and missing pieces and reassemble a reconditioned piece. You are expected to provide furniture of sufficient complexity to challenge their skill level. Joinery, carving, stripping and refinishing are all appropriate to encounter in this course.

**FIW 115 Advanced Joinery**  
1-4 Credits

This course examines all types of joinery from decorative to the most complex of hand and machine cutting techniques and learn their respective qualities in regards to strength, material and adhesive selection, wood movement and the properties of different joints. A project incorporating many of these joints will be expected.

**FIW 116 Cabroile Leg and Queen Anne Furniture**  
1-8 Credits

This course uses the Queen Anne style to force the furniture maker to depart from rectilinear form and create curves and bends in wood. Patternmaking and building from drawings to create a chair, table, cabinet or similar piece is expected.

**FIW 118 Lathe Turnings**  
1-4 Credits

This course through spindle and face plate turnings the capacity of the lathe are examined. Glued-up, green and off-center turnings may all be tried as well as duplication of multiple parts. Sharpening, various finishing techniques and tool selection are also examined.

## Fine Woodworking

### **FIW 120 Advanced Furniture and Cabinet Construction**

1-8 Credits

After completion of this course you should have produced a finished piece of salable quality with a demonstrated understanding of the materials available, their sources, shop drawings, various construction and finishing methods and reasonable design and technical skills.

### **FIW 122 Wood Carving**

1-4 Credits

This course allows you to experiment with knife and gauge to discover the many possibilities of wood decoration through carving and the qualities of numerous materials. Ultimately you are expected to produce samples of chip and relief carvings to demonstrate what's been learned.

### **FIW 125 Finishing Wood**

1-4 Credits

This course allows you to research the wide variety of finishes available from the oldest formulations to the bewildering array of modern films and stains. You experiment with a representative sampling of colorations and surface finishes on numerous types of woods and finish a piece with a selected process.

### **FIW 128 Doormaking**

1-8 Credits

This course involves the planning, design, selection and purchase of materials, construction, finishing and hanging of a door you have made. Assorted styles of door construction, joinery, glues and fabrication technique are examined.

### **FIW 150 Period Furniture Reproduction**

1-8 Credits

This course involves researching and selecting a period and style of furnituremaking from the biblical era to contemporary times and building a reproduction piece. You examine "then and now" techniques and materials while selecting the construction process for their individual piece. Period reproduction becomes musical instruments, boats or other items as you become involved in their research.

### **FIW 152 Tools: Hand and Power, Portable and Stationary**

4 Credits

This course covers the safe use and care of hand and power tools—both portable and stationary. Through tool utilization, necessary skills are developed to pass competency and safety tests for each tool.

### **FIW 200 Veneering and Marquetry**

1-4 Credits

This course covers the surface decoration of wood, both edge and face treatments through the use of thin, often expensive, exotic or figured woods. Man-made and solid substrates for veneering are examined as well as available patterns, styles, marquetry techniques and creating multiple layer banding for a project.

### **FIW 205 Tablemaking**

1-8 Credits

This course involves the study and construction of flat surface utilizing one of the wide variety of potential styles, sizes, materials and techniques available. Solid and sheet goods are examined as will alternative construction methods and their various qualities. Fastenings, edging and movement concerns are explored.

### **FIW 206 Chairmaking**

1-8 Credits

This course utilizes chair construction to examine some of the alternatives of machine and hand-tool construction as illustrated by seat shaping through router surfacing vs inshave use, for examples. Spindle turnings, spokeshave use and compound angles may be encountered in constructing a chair. Chair style often dictates resolving construction dilemmas such as jointing compound curves and jig making for tapered legs with fluting or reeding.

### **FIW 209 Cabinetmaking**

1-4 Credits

This course covers cabinet types, kitchen and cabinet design, layout, construction, hardware installation, materials, power tool use, accessories and estimation.

### **FIW 210 Bending and Laminations**

1-4 Credits

This course involves the process of curving natural and man-made panels through a variety of methods including spaced kerfs, cold lamination and steambending. Form construction, various qualities of different wood species and adhesive selection are studied.

### **FIW 211 Shop Carpentry**

1-8 Credits

Prerequisite: Permission of instructor

This course is for the non-site, shop carpenter and includes jig and patternmaking; stationary power tool maintenance and adjustment; machining of woods; and techniques unique to shops, cabinetmakers and millworkers.

### **FIW 213 Furniture Making**

1-4 Credits

This course teaches furniture design, construction techniques, material selection, joinery, bending, laminating, veneerwork and casework details.

### **FIW 215 Cabinet Installation, Countertops and Built-Ins**

1-4 Credits

This course covers the selection and installation of factory built cabinets, countertops, built-ins and terminology, types, design, estimation and construction.

### **FIW 217 Advanced Cabinetmaking**

1-8 Credits

This course expands the basic skills taught in FIW 209. It includes a review of the types of joints, gluing and hardware used in cabinets. You become familiar with various types and designs of cabinets used in residential and commercial construction. Construction of shop-built cabinets may include a variety of door styles and include the proper use of power tools for creating various designs. The uses and application of plastic laminates are explored and students learn the proper installation of shop-built cabinets.

## FIRE SCIENCE TECHNOLOGY

### FST 100 Essentials of Firefighting (Firefighter I)

3 Credits

Corequisite: FST 297

This course is a classroom section in which the IFSTA 200 Essentials of Firefighting Manual is taught. Basic firefighting skills in forcible entry, fire suppression, fire prevention, equipment and basic fire ground procedures are covered. This course is required if you are not presently working in the fire service.

### FST 101 Firefighter II Academy

8 Credits

Prerequisites: FST 100, 297

This course comprises of roughly 360 contact hours and involves in-depth training in all aspects of firefighting. Firefighting skill in fire ground operations is covered and all required knowledge and skills are tested for State Certification as Firefighter II. The course is hands on intensive and is held at a fire academy training ground.

### FST 102 Introduction to Fire Science and Suppression

3 Credits

This course presents a broad overview of fire suppression and prevention in the public and private sectors. The rudiments of fire history building construction, fire behavior, fire department organization and management, chemistry of fire, fire and arson investigation, methods of early detection and suppression, hazardous materials management, and initial fire attack and fire/emergency operations are studied.

### FST 103 Firefighter Occupational Health and Safety

3 Credits

Prerequisites: FST 105, 297

This course stresses on-scene and on-the-job causes of firefighter injuries and deaths. Case studies emphasize the importance of determining the cause of injury and how to eliminate those causes. The importance of on-the-job safety, the safety officer, diet, physical fitness, mental well-being and stress management are discussed.

### FST 104 Fire Protection Systems

3 Credits

Prerequisites: FST 100, 102, 105 or permission of instructor

This course provides you with an understanding of the principles and functions involved in the installation and use of sprinkler systems, special suppression systems, and fire detection and alarm systems. You gain a working knowledge of where these systems are needed in relation to life safety hazards and various building occupancies and types of construction. Fire department involvement in systems maintenance and use are discussed.

### FST 105 Building Plans and Construction

3 Credits

This course provides you with as much information as possible about the various methods of building construction, the materials used in building construction and their relationship to methods of fire attack and extinguishment. Using the knowledge acquired in this course, the firefighter can greatly enhance the efficiency and ease of extinguishment and the safety of the firefighting forces on the fire ground.

### FST 106 Fire Inspection Practices

3 Credits

This course provides you with an understanding of the function, goals and operation of a fire prevention inspection bureau and the importance of company inspections and preplanning. Hazards and the cause of these hazards and methods to correct them are discussed in depth. You are introduced to classes of building construction, occupancy hazards, protection systems and devices necessary to protect building and occupancies from hazards to life and property.

### FST 107 Hazardous Materials Awareness/Operations Level

3 Credits

Prerequisites: FST 100, 105; CHE 101 or permission of instructor.

This course studies the physical and chemical properties of different compounds which render fire fighting abnormally dangerous and hazardous. The classes of compounds including flammable and combustible liquids, compressed gases, cryogenics, solids, water reactive compounds, oxidizers, explosives, Class A and B poisons, corrosives, plastics and radioactive materials are covered. These compounds, how they react to each other and endanger the life of the firefighter and society in general are also discussed. (*State Certification*)

### FST 110 Job Placement and Assessment

3 Credits

This course introduces entrance firefighter candidates to a program that they may use to successfully begin a career in the Fire Service. This course discusses the various aspects of the Fire Service entrance exam process and zeros in on the different components of the exam including the written, physical abilities, oral interview and resume preparation. You learn to identify any deficiencies they may have regarding various exam topics and to identify a means to improve in these areas.

### FST 111 Private Fire Protection Systems

3 Credits

This course is designed to give the non-firefighter student an insight into the installation, maintenance and inspection of automatic detection, suppression and alarm systems. Special extinguishing systems are also presented. The criteria that is used to determine what type of protection system to utilize is covered in depth.

### FST 112 Fire Service Planning

3 Credits

This course provides you with the knowledge and skills to set goals for a fire department in budget, operations, training, equipment, prevention and administrative needs. Items such as planning for expansion and new fire houses are included.

### FST 113 Intro to Fire Prevention Awareness

3 Credits

This course enables you to introduce and maintain fire prevention awareness and educational programs for private industry, governmental agencies and to the public.

### FST 114 Fire Company Organization Procedures

3 Credits

This course prepares Company Officers and Shift Officers with skills needed to plan, organize, and implement programs for the management and planning of all functions associated with single company emergency and non-emergency functions.

## **Fire Science**

### **FST 115 Introduction to Industrial Fire Protection**

3 Credits

This course is designed for Fire Engineer students and reviews the rudiments of fire science as it pertains to the private or industrial sector. Fire behavior and the chemistry of fire are covered in depth. Human behavior in life threatening situations, fire detection, suppression and alarm systems, fire extinguishing agents are also covered.

### **FST 116 Industrial Fire Prevention**

2 Credits

This course gives the Fire Engineer student an understanding of the function and goals of a fire safety professional in private industry. Industrial fire hazards, the cause of these hazards and methods of correcting these hazards are discussed and illustrated in depth. OSHA regulations pertaining to the establishment of industrial fire brigades, their training, equipment, functions and duties, and the training of employees other than the fire brigade are also discussed.

### **FST 120 Confined Space Entry and Rescue**

3 Credits

This course provides students with the knowledge and skills to safely and effectively work and rescue personnel in a confined space and follow all OSHA and NFPA standards for confined space entry.

### **FST 121 Rope Rescue Module I**

1 Credit

This course is designed to give you the rudimentary skills necessary to accomplish low angle and moderate high angle rescues utilizing rescue rope and its associated hardware. You become familiar with the setup and modification of various rescue systems in order to accomplish rescue in a changing environment. This includes rope construction, knots, types of hardware equipment, care and maintenance of equipment, belay systems, repel systems, lowering and raising systems and related medical treatment of patients.

### **FST 122 Rope Rescue Module II**

1 Credit

This course is the intermediate Rope Rescue module that builds on the skills learned in Module I. This is a hands on course focusing on high angle rescue. Repel and belay systems are reviewed, demonstration of lowering and raising systems, and single rescuer high angle rescues are performed in a realistic field environment.

### **FST 123 Rope Rescue Module III**

1 Credit

Prerequisites: FST 121, 122

This is the last module in the Rope Rescue series and builds on the skills taught in the previous two modules. High angle victim rescue is the central theme of this class. Victim evacuation using stokes litters both in attended and unattended rescues are accomplished on actual cliff sites. Raising and lowering systems are utilized for victim evacuation with the stokes as well as some repelling. Medical treatment of victims is discussed.

### **FST 127 Technical Heavy Rescue**

3 Credits

Prerequisites: FST 100, 120, 297

This course is for those who have general knowledge of the fire service and are at least Firefighter I certified (certifiable), and have taken the Confined Space entry program. The course is the first in a series that focuses on heavy extrication procedures. The course devotes an equal amount of time to both lecture and practical exercises.

### **FST 131 Technical Rope Rescue**

1 Credit

This course is designed to give you an introduction to Rope Rescue in the Fire Service. Emphasis is on basic equipment construction and limitations as well as basic inspection and maintenance procedures. Incident Command/Incident Management System at rope rescue incidents is discussed including the role of Rig Master and Rescue Operations Officer as well as Safety Officer. The difference between dynamic and static equipment and systems is explored in addition to the dynamics of nylon tubular webbing and prussik cordage. Rescuer packaging, rigging and pre-loading as well as fall and edge protection are discussed and demonstrated. Rescuer rappel, lock-off and self-rescue are also demonstrated. During actual drill tower rappel scenarios, you have the opportunity to put the above skills to use and practice.

### **FST 132 Structural Collapse**

1 Credit

Basic structural principles and site evaluation as well as causes and types of structural collapse and inherent hazards are explored. The formation of voids and the probability of locating victims is studied. Incident Command/Incident Management System with an emphasis on rescuer safety and organization at rescue scenes is discussed. Tool, equipment and materials used in addition to shoring techniques are demonstrated and skills are developed prior to actual collapse scenarios. Realistic scenarios provide actual hands-on experience. Communications systems and rescuer personnel protective equipment significance and selection are also covered. This is a module of the Technical Heavy Rescue program.

### **FST 133 Trench Rescue**

1 Credit

Different soil types and the difference between trenches and excavations are discussed. You become familiar with spoil piles and other collapse hazards as well as the dynamics of a trench collapse. Incident Command/Incident Management System and emergency scene control and organization are included in the classroom portion. Tools, equipment personal protective equipment are discussed and demonstrated. Signs that might indicate victim location and techniques used to rapidly gain useful information from bystanders are included. Rescue vehicle location, the securing of all on-site construction equipment and traffic control considerations are evaluated. Actual shoring and simulated victim rescue at a trench site offer you an opportunity to practice skills. This is a module of the Technical Heavy Rescue program.

### **FST 134 Confined Space Rescue**

1 Credit

Different types of confined space environments and the hazards present are explored in detail. Permit requirements and OSHA considerations are included. Atmospheric monitoring and Self-Contained Breathing Apparatus and Supplied-Air Breathing Apparatus are explored. Various rescue equipment used during actual confined space rescues are available as you learn the use and limitations of this equipment. ICS/IMS at a confined space rescue incident are discussed. You are exposed to the advantages and disadvantages of Radio and Hard-wired communication systems. You become familiar with different patient packaging techniques and the risk analysis differential used during a victim rescue versus recovery. Victim extrication techniques are demonstrated and practiced during a simulated victim rescue at an actual confined space site.

**FST 135 Ice Water Rescue**

1 Credit

This course starts with discussing the relative strengths and hazards associated with different types of ice. You are taught how to quickly recognize and evaluate these types and how to prepare a rescue plan accordingly. Patient evaluation and contact techniques are included. Rescue equipment and techniques as well as shore support, belay line and communications are discussed. The stages of hypothermia are compared and you are taught how to quickly recognize the differences. Actual victim rescue scenarios through the ice using rescue suits, rescue lines and a zodiac boat allow you to become familiar with and practice actual rescue techniques. The need for ICS/IMS at an ice water rescue is included. This is a module of the Technical Heavy Rescue program.

**FST 136 Swift Water Rescue**

1 Credit

This is an awareness level program. Items studied in this course include fast water hazards and risk analysis. The science of hydraulics and the associated dynamics are explored in order to allow you the opportunity to understand how victims are held in fast moving currents. Low head dams and vehicle rescues are major components and are studied in depth. Rescue techniques and equipment including rope systems, throw bags and personal flotation devices are discussed and demonstrated. Shore support and the importance of ICS/IMS at a swift water rescue is included in this program. Time is spent with a Swift Water Rescue Team and you will have an opportunity to watch actual rescue scenarios. This is a module of the Technical Heavy Rescue program.

**FST 137 Vehicle Extrication**

1 Credit

You learn the importance of establishing safety zones and implementing the ICS/IMS system at transportation emergencies involving trapped victims. Utilities above and below ground, traffic, bridge and guardrail stability, fuel systems, electrical systems and air bags are all issues that are addressed and you are taught techniques to assess and mitigate these hazards. Safety zones, vehicle stabilization and resource management are covered. You learn the importance of rapid and accurate victim evaluation, as well as victim access and stabilization. Various hand and power tools are taught in order to address a variety of situations commonly found at these emergencies. Patient packaging techniques are included. This is a module of the Technical Heavy Rescue program.

**FST 150 Public Fire Prevention and Education**

3 Credits

This course provides you with the knowledge and skills to conduct prevention and education needs assessment, targeting audiences, developing and delivering programs, and conducting fire prevention, safety inspections and courses.

**FST 151 Driver Operator**

3 Credits

This course provides you with the knowledge and skills to safely operate emergency vehicles according to NFPA standards and meets all requirements for State Driver Operator Certification. You are able to display a knowledge of fire apparatus, operation of apparatus, pumps, aerial devices, driving, maintenance, and testing and demonstrate apparatus driving skills on a NFPA/State of Colorado driving course.

**FST 152 Wildland Firefighting**

3 Credits

This introductory course is designed to give you a basic understanding of wildland fire and the strategies and tactics involved during suppression operations. Fire line safety is also covered in depth, emphasizing the wildland fire orders and watch out situations. You receive training which qualifies them as Certified Wildland Firefighters under the Incident Command System and is recognized by the National Wildfire Coordinating Group. Fire behavior, fire weather, fuel types, safety equipment and guidelines, incident size up, determining resource needs, aircraft identification and capabilities, direct vs. indirect attack, burn-out, backfiring and map reading are also covered.

**FST 201 Instructional Methodology (Fire Instructor I, II)**

3 Credits

Prerequisites: FST 100, 102 or permission of instructor

This course studies management and operation of a training division and company training. Emphasis is placed on the safety of firefighters on the fire ground, in training and general on-the-job safety. Training techniques that have been developed and are recognized nationally are emphasized. The course also includes record keeping, and state and national reporting requirements.

**FST 202 Fire Fighting Strategy and Tactics**

3 Credits

Prerequisites: FST 102, 104, 107 or permission of instructor.

Basic firefighting tactics and strategy, methods of fire attack, and preplanning are discussed in depth. Rescue procedures such as building collapse, cave-in, landslide and vehicular accident extrication are also studied.

**FST 203 Fire Science Hydraulics**

3 Credits

Prerequisites: FST 105, 209 and FST 297; MAT 100 or permission of instructor

This course provides a working knowledge of the hydraulic calculations that are necessary in water supply and delivery in fire protection and suppression. Hydraulic laws and formulas as applied to the fire service are studied.

**FST 204 Fire Codes and Ordinances**

3 Credits

Prerequisites: FST 102, 104, 105

This course provides an overview of the Uniform Fire Code with reference to other applicable codes including the Uniform Building Code and Life Safety Code. After taking this course, you should be able to apply the requirements of the Uniform Fire Code to practical job and inspection situations and prepare for the ICBO Certification exam.

**FST 205 Fire Cause Determination**

3 Credits

This course provides you with proper methods of conducting basic fire investigation, determining area and point of origin, cause and methods of fire spread, recognition and preservation of evidence, arson law, constitutional law, interviewing court procedures and testimony are discussed.



## **Fire Science**

### **FST 206 Fire Company Supervision and Leadership (Fire Officer I)**

3 Credits

Prerequisites: ENG 121; FST 102, 202 or permission of instructor

This course provides insight into the management of a fire company. Organization theory, management functions, and leadership skills are analyzed and discussed. Through the use of simulation and case studies, students should gain knowledge of management and leadership skills required of fire service manager in both the staff and line capacities.

### **FST 207 Strategy and Tactics II**

3 Credits

This course provides the skills and knowledge for the career firefighter in handling complex fire, EMS, and hazardous materials incidents and working with the incident command system, other resources, and private and public entities.

### **FST 208 Codes and Ordinances (Advanced)**

3 Credits

Prerequisite: FST 204

This course provides you with advanced skills and knowledge in the Uniform Fire Code and Local Codes and Ordinances and in preparation for the ICBO Certification.

### **FST 251 Fire Service and the Law**

3 Credits

This course is designed to provide the professional fire officer with detailed information on federal, state and local laws and ordinances that impact the fire service and studies the OSHA and NFPA standards in depth.

### **FST 252 Arson Investigation**

3 Credits

Prerequisites: FST 102, 205 or permission of instructor

This course provides insight into the basics of fire investigation. How to determine area and point of origin, and cause and method of spread of fire are discussed. Recognition and preservation of evidence of arson, arson law, constitutional law, interviewing witnesses, court procedures and testimony are stressed.

### **FST 253 Incident Command/Command of Major Incidents**

3 Credits

Prerequisite: FST 202

This course explores the dynamics of managing major emergency incidents. The National Incident Command System is utilized in the instruction. Major incidents where large life, property or economic losses are possible are studied. Actual incidents are discussed and analyzed. This course recognizes that learning from the experience of others in handling major emergencies is required in the pre-planning of emergencies in our own communities.

### **FST 254 Hazardous Materials Technician Level**

6 Credits

Prerequisites: FST 102, 107 or Operations level certificate

This course is designed to help first responders achieve an advanced knowledge of hazardous materials handling and mitigation. This class goes beyond merely awareness. It studies the various options available to us in bringing hazardous materials incidents to safe conclusions.

### **FST 255 Fire Service Management**

3 Credits

Prerequisites: FST 105, 202, 206

This course introduces you to current management practices and philosophies. Real world applications from the supervisors viewpoint is stressed by using numerous and varied examples. In addition to organizing, delegating, planning, and controlling, the course covers decision making, communication skills, conflict resolution, creativity and innovation. The role of the manager in supervising programs and divisions as it pertains to motivation, appraising budget, counseling, and handling discipline and grievances are discussed. The formal and informal work group are also discussed to some extent.

### **FST 256 Fire Administration (Fire Officer III)**

3 Credits

This course is designed to provide the upper management and fire chiefs with the skills and knowledge needed to manage and administer the needs of the fire department and to be an effective leader in today and tomorrow's changing fire service.

### **FST 257 Volunteer Fire Administration**

3 Credits

This course provides volunteer fire chiefs and upper management with the skills and knowledge needed to lead the fire service into the future and discuss problems and solutions inherent in the fire service and in volunteer departments.

### **FST 258 Wildland Fire Incident Management and Organization**

3 Credits

Prerequisite: FST 152; 1 year of wildland fire experience is preferred

This course introduces and develops supervisory and decision making skills for fire line management. The subjects covered match the curriculum required by the National Wildfire Coordinating Group under the Incident Command System. The course is taught in mini-modules at the intermediate level that may cover any or all of the following: I-200 Intermediate ICS, I-300 Multiple Resource ICS, S-230 Intermediate Firefighter, S-290 Intermediate Fire Behavior, S-260 Fire Business Management, S-270 Air Operations, and S-205 Fire Operations in the Urban/Wildland Interface. These courses are preparatory for the Federal Interagency Qualification trainee assignments for overhead personnel.

### **FST 259 Wildland Fire Strategies and Tactics**

3 Credits

This course is identified training in the National Interagency Incident Management System. This training is required for those personnel serving in the operations function at the Strike Team/Task Force level or higher. This course is designed primarily to instruct single resource bosses and initial attack incident commanders. It is also valuable for operations supervisors qualified at higher management levels who have not received training in wildland suppression tactics. Planning, making tactical decisions, managing resources, determining incident resource needs, evaluating incident objectives, and deploying manpower and equipment are all covered in the following eight units.

**FST 260 Fire Related Collapse of Buildings**

3 Credits

Prerequisites: FST 102, 202

This course gives you an insight into the dangers of structural failure of buildings caused by fire. The course examines, in great detail, the subject of burning building collapse. The course shows exactly how brick walls fall down, explains exactly how floors cave-in, and describes exactly how stairs collapse, fire escapes crumble, and truss roofs fail. The main thrust of the course is to teach you how to survive burning building collapse.

**FST 261 Fire Operations in the Urban Interface**

2 Credits

Prerequisite: FST 152

This course was developed under the Interagency Curriculum established and coordinated by the National Wildfire Coordinating Group. The course is designed to give fire line personnel skills to anticipate and predict wildland fire behavior, weather and rates of spread. The course covers fire environment, fuels classification, topography and fire behavior, temperature-moisture relationship, fuel moisture, local and general winds, atmospheric stability and instability, keeping current with the weather, extreme fire behavior, fire behavior affecting fire line tactics and fire behavior predictions.

**FST 265 Risk Management and Liability**

3 Credits

This course alerts and informs fire departments, fire boards and firefighters of civil and criminal liabilities under the law. Colorado laws and statutes are reviewed by the instructor.

**FST 290 Fire Science Advanced Topics**

1-6 Credits

This series of courses is designed to encourage you to take advanced curriculum courses in areas of major concern to both the citizenry and the fire service. The credit earned from 290 courses is applied as elective credit only. *Please See an advisor.*

**FST 297 Fire Academy\*\***

4 Credit

Corequisite: FST 290

This course is a drill ground program where hands-on practice of topics covered in FST 290 are utilized. This course is held at a local fire academy drill ground. This course is required for continuation into all FST 145 or above courses for those who are not presently in the fire service.

**FST 297 Cooperative Education (Internship)**

1-6 Credits

This course must be arranged through the office of Job Placement/Cooperative Education and with approval of your advisor. This Internship allows students to gain experience and knowledge from on-the-job training. Positions are non-paid.

**FST 299 Independent Study**

1-6 Credits

Prerequisite: Permission of instructor only

This course encourages you to study advanced topics in areas of major concern to both the citizenry and the fire service. The credit earned from 299 courses is applied as elective credit only. *Please see an advisor.*

*\*\*These two courses (FST 100 and 297) are required for all who are not working in the fire service. The objective of this program is to give you an opportunity to get educational experience early in your pursuit of a fire service career in order to be able to compete academically with those who may already have experience in the fire service. These courses are also the first step in achieving NFPA Firefighter I Certification. Courses are offered in cooperation with local fire academies and Red Rocks Community College.*

**FRENCH**

*The order of the topics and the methodology vary according to the individual texts and instructors.*

**FRE 101 Conversational French I**

3 Credits

This is the first course in a sequence for beginning students who wish to understand, read and speak French. The material includes basic vocabulary, grammar and expressions that are used in daily situations and in travel.

**FRE 102 Conversational French II**

3 Credits

Prerequisite: FRE 101 or permission of instructor

This is the second course in a sequence for beginning students who wish to understand and speak French. The material continues to cover basic conversational patterns, expressions and grammar. *This course may not transfer to a four-year institution.*

**FRE 111 Foreign Language I**

5 Credits

This course begins a sequence dealing with the development of functional proficiency in listening, speaking, reading and writing the language.

**FRE 112 Foreign Language II**

5 Credits

Prerequisite: FRE 111 or permission of instructor

This course continues the development of functional proficiency in listening, speaking, reading and writing the language.

**FRE 211 Foreign Language III**

3 Credits

Prerequisite: FRE 112 or permission of instructor

This course continues the development of increased functional proficiency in listening, speaking, reading and writing.

**FRE 212 Foreign Language IV**

3 Credits

Prerequisite: FRE 211 or permission of instructor

This course continues the development of increased proficiency in listening, speaking, reading and writing the language.

## General Education

# GENERAL EDUCATION

### **GED 011 GED Preparation**

1-3 Credits

This course is designed for those who need to prepare for the GED tests: Writing Skills, Social Studies, Science, Literature and Mathematics. Diagnostic testing is included to determine skill level. Practice tests in GED materials and simulated GED testing are provided. A free pre-GED test is available.

## GEOGRAPHY

### **GEO 105 World Regional Geography**

3 Credits

This course introduces the spatial relationships between and among the geographic regions of the world. Topics include demographic and cultural (political, economic and historic) forces related to the physical environments of selected regions. Methods of study include analysis of and interrelationships between developed and developing regions.

### **GEO 106 Human Geography**

3 Credits

This course is an introduction to geographic perspectives and methods with applications to the study of human activities, such as resource utilization, agricultural practices, settlement patterns, migrations, cultural activities and industrialization. Special emphasis is placed on spatial distribution, map interpretation and human impact on the environment.

## GEOLOGY

### **GEY 111 Physical Geology**

4 Credits

This course studies the materials of the earth, the earth's structure, surface features and the geologic processes involved in its development. This course includes a laboratory experience.

### **GEY 117 Map Reading**

1 Credit

This course deals with the reading and interpretation of topographic and geologic maps.

### **GEY 118 Rock and Mineral Identification**

1 Credit

This course focuses on the basic field methods for identifying igneous, sedimentary and metamorphic rocks as well as the major rock forming minerals.

### **GEY 119 The Great Ice Age**

1 Credit

This course analyzes the effect of the Great Ice Age on the development of North America and also explores theories of climatic change.

### **GEY 121 Historical Geology**

4 Credits

Prerequisite: GEY 111 or permission of instructor

This course studies the physical and biological development of the earth through the vast span of geologic time. It emphasizes the investigation and interpretation of sedimentary rocks, the record of ancient environments, fossil life forms and physical events, all within the framework of shifting crustal plates. This course includes a laboratory experience.

### **GEY 125 Continental Drift**

1 Credit

This course explores the history of continental movement and its relationship to earthquakes and volcanoes and the history of life.

### **GEY 135 Environmental Geology**

3 Credits

This course introduces the relationship of applied geology to man's environment. An overview of geologic concepts and terminology precedes a study of geologic hazards such as floods, landslides, avalanches, earthquakes and volcanoes. Surface and groundwater hydrology are emphasized and man's responsibility to protect these resources from contamination. The geologic aspects of environmental health, land use practices and resource exploitation are reviewed and related to legislation regarding environmental law.

### **GEY 203 Map and Airphoto Interpretation**

3 Credits

Prerequisite: GEY 111

This course is an introduction to the environment using airphotos, maps and remote sensing data. Emphasis is on the development of skills and reasoning ability required for the interpretation of geologic features. Aspects of forestry, agriculture, land use, engineering, urban planning and industrial problems are reviewed. Laboratory work includes practical use of the stereoscope, simple photogrammetric instruments, maps, photo-maps and air photographs.

### **GEY 205 The Geology of Colorado**

2-3 Credits

Prerequisite: Permission of instructor

This course covers the geologic history of Colorado, with emphasis on formation of mountain ranges, igneous, sedimentary and metamorphic rock types ore deposits and land forms. Field experience and/or class room lectures are used to cover the material.

### **GEY 207 Geologic Field Methods**

3 Credits

Prerequisites: GEY 111, 121

This course is an introduction to geologic mapping and methods of field investigation. Emphasis is on field identification of rocks; use of geologic instruments such as the Brunton compass, hand level, Jacob's staff, chain, etc.; preparing geologic maps; sampling techniques; notetaking; measuring and compiling columnar sections and writing reports. Laboratory work is held outdoors.

**GEY 208 Geology Field Trip**

2-3 Credits

Prerequisite: Permission of instructor

This course involves in-depth field studies into the geology of specific regions both within and outside Colorado. Trips lasting from one to several days length to the study area constitute the major activity of the course. The specific area of investigation are indicated in the *Class Planning Schedule* each time the course is offered.

**GEY 215 Introduction to Mineralogy**

4 Credits

Prerequisites: GEY 111 and high school chemistry or equivalent

This course studies the physics, chemistry origin and occurrence of minerals. Topics include techniques of mineral identification, the physical properties of minerals, crystallography, the genesis and occurrence of minerals and some economic geology as related to local mineral deposits. Field trips are taken to local mineral collecting areas.

**GEY 235 Introduction to Geographic Information Systems**

4 Credits

Corequisite: Laboratory

This course introduces the theory and practice of creating and using computer-based geographic information systems. It provides direct experience with the techniques used to access, develop, manipulate and display spatial data using computers.

**GERMAN**

*The order of the topics and the methodology vary according to the individual texts and instructors.*

**GER 101 Conversational German I**

3 Credits

This is the first course in a sequence for beginning students who wish to understand and speak German. The material includes basic vocabulary, grammar and expressions that are used in daily situations and in travel.

**GER 102 Conversational German II**

3 Credits

Prerequisite: GER 101 or permission of instructor

This is the second course in a sequence for beginning students who wish to understand and speak German. The material continues to cover basic conversational patterns, expressions and grammar.

**Note:** This course may not transfer to a four-year institution.

**GER 111 Foreign Language I**

5 Credits

This course begins a sequence dealing with the development of functional proficiency in listening, speaking, reading and writing the language.

**GER 112 Foreign Language II**

5 Credits

Prerequisite: GER 111 or permission of instructor

This course continues the development of functional proficiency in listening, speaking, reading and writing the language.

**GER 211 Foreign Language III**

3 Credits

Prerequisite: GER 112 or permission of instructor

This course continues the development of increased functional proficiency in listening, speaking, reading and writing the language.

**GER 212 Foreign Language IV**

3 Credits

Prerequisite: GER 211 or permission of instructor

This course continues the development of increased proficiency in listening, speaking, reading and writing the language.

**GRAPHICS AND ANIMATION TECHNOLOGY**

**GAT 106 Adobe Illustrator**

3 Credits

Prerequisite: CIS 113

This course acquaints you with the processes of a professionally used draw/ paint program on the Macintosh computer. Stylization, typography and color are used as design elements to produce original, camera-ready art for publication.

**GAT 115 Color Theory**

3 Credits

Prerequisites: GAT 106, CIS 113

This course covers color theory as it relates to the printing industry and multimedia. The psychology of color is taught as well as how to effectively design with color. You learn how to correct color photographs and create color separations ready for printing. Color scanning technology is also covered.

**GAT 120 Adobe Photoshop I**

3 Credits

Prerequisite: CIS 113

This course provides an introduction to digital graphics pre-press. It studies image processing and special effects. Chemical free darkroom and illustration techniques are also covered along with graphics/text integration.

**GAT 125 QuarkXPress**

3 Credits

Prerequisite: CIS 113

This course introduces you to digital desktop publishing. You learn how to assemble, organize, manipulate and manage text and graphics to produce a high quality publication. Class discussions and independent projects supplement hands-on classroom work. Examples and exercises are diverse, including magazine, journal, brochure, poster, advertisement and packaging layouts. Studies include printing basics, allowing you to produce either a stand-alone desktop publication, or to complete prepress work for offset printing and output devices.

## **Graphics and Animation**

### **GAT 127 Electronic Prepress**

3 Credits

Prerequisite: GAT 125

This course explores in detail the electronic prepress process. Preparing a digital file for press, trapping, output considerations and proofing techniques. Creating effective electronic designs and efficient use of today's software programs are also covered.

### **GAT 201 Animation and Rendering**

3 Credits

Prerequisite: CIS 113 and GAT 106

This course is an introduction to the art of animation and rendering with a focus on movement and story development. Traditional and computer techniques are discussed. You produce complete animations and transfer them to video tape or other visual mediums.

### **GAT 220 Adobe Photoshop II**

3 Credits

Prerequisite: GAT 120 or equivalent experience

This course develops and reinforces techniques learned in GAT 120. Fundamentals are continuously reinforced as new techniques are introduced. You are expected to produce two final proofs from outside sources.

### **GAT 290 Special Topics**

3 Credits

Prerequisite: Permission of instructor

This course provides an opportunity to examine new technology and advanced techniques in computer art.

## **HEALTH OCCUPATIONS**

### **HEO 100 Medical Terminology**

3 Credits

This course is a systematic and in-depth study of medical terminology that covers the origin and structure of medical terms. and helps you interpret and pronounce medical terms used in various medical-related areas.

### **HEO 104 Anatomy and Physiology for Health Occupations**

4 Credits

This non-laboratory course enables health care workers to have a basic knowledge of anatomy and physiology. Structural components of each body system as well as the functional components are emphasized.

### **HEO 210 Pathophysiology for Health Occupations**

4 Credits

Prerequisites: HEO 104 or equivalent

This course focuses on the human body and the consequences of a disruption of body processes. Anatomy and physiology of body systems is reviewed along with pathologic conditions within each organ system, while introducing important clinical considerations.

### **HEO 220 Pharmacology for Health Occupations**

3 Credits

Prerequisites: HEO 104 or equivalent

This course covers the classifications, indications, actions, side effects and administration of medications. Dosage calculations and conversions are also presented.

### **HEO 230 Clinical Skills for Medical Office**

4 Credits

Prerequisites: HEO 220 or equivalent

This course prepares you to assist in various ambulatory, outpatient care facilities. Content areas include universal precautions, infection control, vital signs, assessment, patient history, physical examinations, EKG skills, radiology applications, pulmonary function testing and administration of medications.

### **HEO 240 Medical Office Laboratory Skills**

4 Credits

Prerequisite or Corequisite: HEO 230 or permission of instructor

This course prepares you to perform diagnostic laboratory procedures in ambulatory, or outpatient care facilities. Topics include basic laboratory equipment, venipuncture, hematology, clinical chemistries, microbiology, urinalysis and blood typing.

### **HEO 297 Medical Assisting Internship**

6 Credits

Prerequisite: Permission of instructor

This medical internship allows you to gain experience and knowledge from on-the-job training. Positions are non-paid. Prior to the clinical internship, you need to have completed First Aid through the American Red Cross and CPR for health providers through the American Heart Association. You also need to demonstrate freedom from communicable disease by providing proof of immunizations. *(270 hours of internship)*

## HISTORY

### HIS 101 Western Civilization I

3 Credits

This course explores the major political, economic, social, diplomatic, military, cultural and intellectual events and the roles of key personalities that shaped Western civilization from the prehistoric era to 1715.

### HIS 102 Western Civilization II

3 Credits

This course explores the major political, economic, social, diplomatic, military, cultural and intellectual events and the roles of key personalities that shaped Western civilization from 1650 to the present.

### HIS 115 Personalities and Issues

3 Credits

This course identifies and describes noteworthy personalities and issues that have affected the development of critical periods in history.

### HIS 116 The Native American Experience

3 Credits

This course is an introduction to the Native American's historical and socio-cultural development with emphasis upon those processes and relations with non-Native Americans, which have contributed to the current conditions.

### HIS 137 Contemporary World History

3 Credits

This course investigates the major historical and cultural developments of various global regions and nation-states from 1900 to the present.

### HIS 201 U.S. History I

3 Credits

This course examines the major political, economic, social, diplomatic, military, cultural and intellectual events in American history from the first inhabitants through the Civil War and Reconstruction.

### HIS 202 U.S. History II

3 Credits

This course examines the major political, economic, social, diplomatic, military, cultural and intellectual events in American history from Reconstruction to the present.

### HIS 215 Women in U.S. History

3 Credits

This course surveys women's changing roles in American history from the colonial period to the present. Special emphases are placed upon the nature of women's work and the participation of women in the family, church and reform movements.

### HIS 225 Colorado History

3 Credits

This course presents the story of the people, society and cultures of Colorado from the earliest Native Americans, through the Spanish influx, the explorers, the fur traders and mountain men, the gold rush, railroad builders, the cattlemen and farmers, the silver boom, the tourists and the modern twentieth-century state.

### HIS 236 Contemporary United States History

3 Credits

This course surveys the major political, economic, social and cultural developments that have shaped twentieth-century America.

### HIS 255 Democratic Ideas

3 Credits

This course analyzes and evaluates the historical development of individual and social freedom as a political value and ethical concern.

### HIS 276 History of Meso-America

3 Credits

This course traces the history of the indigenous people of Mexico from the first inhabitants through the conquest by the Spanish in 1521 A.D. Special emphasis is placed on such cultures as the Olmec, Maya, Toltec, Totonac, Teotihuacan and Aztec. Topics include the daily life, religion, art, social and political organization and other historical characteristics of these groups of people.

## HUMANITIES

### HUM 118 Religion in American Culture

3 Credits

This course investigates the various ways in which religion and American culture interact. Beginning with the religion of Native Americans, which existed in a pre-modern society where religion went unchallenged as the preeminent organizing principle, to our post-modern era, where religion competes with a multiplicity of other belief systems in a complex societal matrix. This course pays close attention to the sundry ways in which religion and American culture interface.

### HUM 121 Survey of Humanities I

3 Credits

This course introduces you to the history of ideas in Western cultures through a study of the visual arts, literature, drama, music and philosophy of early civilizations, Greek and Roman antiquity and Christian eras. It emphasizes the connections among the arts, values and diverse cultures.

### HUM 122 Survey of Humanities II

3 Credits

This course examines the Medieval Renaissance and Baroque periods through a study of the visual arts, literature, music and philosophy. It compares and contrasts diverse cultural ideas and feminine and masculine viewpoints.

### HUM 123 Survey of Humanities III

3 Credits

This course examines the cultures of the 17th through the 20th centuries by focusing on the interrelatedness of the arts, ideas and history. It considers the influences of industrialism, scientific development and non-European peoples.

### HUM 126 Folklore of Mexico and the Southwest

3 Credits

This course traces the history and cultural heritage of the Mexican and the people who populate the southwest part of the United States. The course studies the ancient cultures before the arrival of the Europeans and see how these people changed their lifestyles with the coming of the Spaniards and other cultures from other parts of the world. Topics include legends, myths, the Aztec calendar, folk medicine, folk art, folk music, ballads, food, riddles, language, games and other related theses.

### HUM 215 Ideas in a Changing Society

1-3 Credits

This course is an interdisciplinary study of the modes of change as manifested in artistic and social movements, in mass culture and in changing life styles.

## Learning Skills

# LEARNING SKILLS ENHANCEMENT

### **LSE 100 Learning Skills Enhancement**

1 Credit

Corequisite: You need to be concurrently enrolled in one of the disciplines described below to receive tutorial assistance

This course is designed for those of you who are in need of instructional assistance in math, chemistry, physics, economics, English, literature, foreign language and writing. You may receive access to computerized tutorial assistance in addition to World Wide Web access.

## LITERATURE

### **LIT 115 Introduction to Literature**

3 Credits

This course provides an overview of literature including poetry and drama. The course emphasizes careful reading, analysis and interpretation as well as understanding of the works and their cultural and historical backgrounds. Critical thinking, discussion and writing about significant works of literature are used to develop discriminating reading skills for lifetime enjoyment.

### **LIT 125 Study of the Short Story**

3 Credits

This course focuses on careful reading and interpretation of the short story as a distinct genre. It examines formal as well as thematic elements of the short story.

### **LIT 126 Study of Poetry**

3 Credits

This course focuses on careful reading and interpretation of various poems representing types and periods of poetry. It examines formal as well as thematic elements of poetry.

### **LIT 127 Study of the Novel**

3 Credits

This course focuses on careful reading and interpretation of selected novels. It examines formal as well as thematic elements of longer fiction.

### **LIT 201 Masterpieces of Literature I**

3 Credits

This course examines significant writings in world literature from the Ancients through the Restoration. It emphasizes careful reading and understanding of the works and their cultural backgrounds.

### **LIT 202 Masterpieces of Literature II**

3 Credits

This course examines significant writings in world literature from the Enlightenment to the present. It emphasizes careful reading and understanding of the works and their cultural backgrounds.

### **LIT 211 Survey of American Literature I**

3 Credits

This course is an overview of American literature from the Puritans through the nineteenth-century Romantics. It explores ideas, historical and social contexts, themes and literary characteristics of works in various genres by major writers.

### **LIT 212 Survey of American Literature II**

3 Credits

This course is an overview of American literature from the mid-nineteenth century to the present. It explores ideas, historical and social contexts, themes and literary characteristics of works in various genres by major writers.

### **LIT 221 Survey of British Literature I**

3 Credits

This course is an overview of British literature from the Anglo-Saxon period through the 17th century. It explores ideas, historical and social contexts, themes and literary characteristics of works in various genres by major writers.

### **LIT 222 Survey of British Literature II**

3 Credits

This course is an overview of British literature from the 18th century to the present. It explores ideas, historical and social contexts, themes and literary characteristics of works in various genres by major writers.

### **LIT 225 Introduction to Shakespeare**

3 Credits

This course covers the history of the Elizabethan Period in England and the life of William Shakespeare. Students will have an opportunity to learn about Shakespeare's poetry and six of his plays.

### **LIT 246 The Literature of Women**

3 Credits

Prerequisite: ASSET written score of 43+ and a reading score of 41+

This course examines culturally and historically the techniques/themes in literature by and about women. Women's issues in various genres are also examined. The course emphasizes careful reading, analysis, interpretation and understanding of the works. Critical thinking, discussion and writing about significant works by and about women enhances perceptive reading skills and heightens awareness of women's issues as part of the human condition.

## MANAGEMENT

### **MAN 116 Principles of Supervision**

3 Credits

This course studies the principles and techniques of managing and motivating personnel. This course is designed for those who are interested in supervising others or for those presently in supervision. Course content focuses on the human interaction in supervision.

### **MAN 117 Time Management**

1 Credit

This course is intended to provide those with the conceptual knowledge and tools to make better use of their time in the management function. *(Fall only)*

### **MAN 120 Office Management**

3 Credits

This course emphasizes the functions of the office. This course includes office organization, work in the office, office layout, equipment and supplies procurement and control, work flow, forms design, record storage and retrieval systems, personnel administration and problems and government control. *(Spring only)*

### **MAN 200 Human Resources Management**

3 Credits

This course presents the methods and techniques of personnel administration. It emphasizes the study of recruiting, interviewing, selecting, placement, training and evaluating. Discussions include the topics of job descriptions orientation, remuneration, promotion and transfers, benefits, grievances and union-management relations. *(Fall only)*

**MAN 203 Contemporary Issues in Management**

2 Credits

This course focuses upon current trends and issues facing persons in managerial roles. Specific issues discussed are determined at the first class meeting, based on the needs of the class members.

**MAN 205 Small Business Management**

3 Credits

This course studies the importance of the small business, its problem status and requirements for success. It focuses on the fundamentals basic to small business operations while recognizing variations in application suited to particular needs. Specific management problems are considered on an individual basis.

**MAN 209 Management Seminar**

1-4 Credits

Prerequisite: Permission of instructor

This course offers: (1) special coverage of areas of current topical interest, (2) experimental coverage of potential new units or courses and (3) program integrating effort via seminar and simulation techniques.

**MAN 210 Cost Effective MRO Buying**

3 Credits

This course enables you to understand what constitutes MRO (Maintenance, Repair and Operating) supplies and proper techniques for buying such. Key practices that determine successful MRO purchasing are explored. *(Fall only)*

**MAN 211 Inventory Management**

3 Credits

This course presents key practices that determine successful inventory management, as well as the principles of inventory management. These principles include purpose and function of inventory, classes of inventory, analysis of inventory, types of control systems, just-in-time stockless buying, order point and order quantity determination, receiving and stores management. *(Fall only)*

**MAN 212 Negotiation and Conflict Resolution**

3 Credits

This course presents proper techniques in negotiation and conflict resolution. Key practices that determine successful negotiation are explored. This course covers principles of conflict resolution including business policies, accepted business practices, contracts, purchases, labor union contracts, pay raises and starting salaries. *(Fall only)*

**MAN 215 Organizational Behavior**

3 Credits

This course provides you with an understanding of the way people behave in business organizations and how that behavior can be influenced. This course shows you how to apply organizational theory to business situations and how new techniques in leadership, supervision, participative management, performance appraisal, quality of work life and management by objectives increase productivity. *(Fall only)*

**MAN 216 Employee Recruiting and Training**

3 Credits

This course studies effective recruiting and employee selection and training techniques. This course emphasizes staff planning, equal employment opportunity and affirmative action, interviewing and testing. It also covers training needs assessment, designing training programs, skills development and orientation programs. You learn train-the-trainer techniques and methods of assuring the transfer of learning. *(Fall only)*

**MAN 217 Compensation and Employee Benefits Management**

3 Credits

This course explores current theory and research related to managing employee compensation and benefits, including new developments as well as established approaches to compensation and benefits decisions. *(Spring only)*

**MAN 225 Managerial Finance**

3 Credits

Prerequisites: ACC 121, 122; ECO 201

This course involves concepts and techniques for utilization of financial accounting information for managerial planning, decision making and control. It also includes concepts and techniques for funds flow management and for short-, intermediate- and long-term financing considerations. *(Fall only)*

**MAN 226 Principles of Management**

3 Credits

This course is a survey of the principles of management. The course emphasizes the primary functions of planning organization, staffing, directing and controlling with a balance between the behavioral and operational approach.

**MAN 239 Business Policies**

3 Credits

This course studies policy formulation and its usage for effective overall management control. It focuses on integrated managerial coordination of marketing, production, finance, accounting, administration, etc. *(Spring only)*

**MAN 240 Management Information Systems**

3 Credits

Prerequisites: ACC 121; BUS 115, 216; CIS 118; ECO 201; MAN 225, 226,

Corequisite: MAN 239

This capstone course utilizes seminar and simulation techniques in management information systems. Management concepts and principles are applied to both situational and comprehensive case problems. *(Spring only)*



## Marketing

### MARKETING

#### **MAR 108 Principles of Salesmanship**

3 Credits

This course enables you to understand and develop proper sales techniques. This course covers the role of selling in the marketing process, consumer behavioral consideration in the buying-selling process, sales techniques and sales management. *(Spring only)*

#### **MAR 109 Advertising and Promotion**

3 Credits

This course enables you to understand and apply techniques in advertising and promotion. The role of advertising and sales promotion in our economy, the kinds and purposes of different media, consumer behavioral implications and student practice and application in campaign programming are included. *(Fall only)*

#### **MAR 115 Visual Merchandising**

3 Credits

This course covers principles and arrangement of merchandise displays, store design and layout, promotional signer, store fixtures and customer service. This course enables you to understand the various areas of visual merchandising and also provides an opportunity for practical application of the principles covered. *(Spring only)*

#### **MAR 207 Marketing Seminar**

1-3 Credits

Prerequisite: MAR 216 or equivalent or permission of instructor

This is an advanced course in marketing, enabling you to apply marketing strategies to the development of both individual and group projects.

#### **MAR 214 Wholesaling and Distribution**

3 Credits

This course enables you to understand and develop strategies in wholesaling and physical distribution. This course deals with the function, purposes and operation of the various wholesale middlemen; warehouse and transportation policies; and procedures and documentation of goods and services. *(Spring only)*

#### **MAR 215 Retail Management**

3 Credits

This course acquaints you with the fundamentals of and develop strategies for retail store management. This course covers retail organization and management, store location, buying and handling merchandise, pricing merchandise and promotional efforts. *(Spring only)*

#### **MAR 216 Principles of Marketing**

3 Credits

This course analyzes theoretical marketing processes and the strategies of product development, pricing promotion and distribution and their applications to businesses and the individual consumer.

#### **MAR 217 Principles of Purchasing**

3 Credits

This course presents the objectives and methodology of industrial, institutional and governmental purchasing agents and buyers. It emphasizes value analysis, product quality control, maintenance of operating efficiency, materials management and analysis of competitive price quotations. *(Fall only)*

#### **MAR 218 Sales Management**

3 Credits

Prerequisite: MAR 108

This course enables you to gain an understanding of and apply techniques currently used in sales management. This course covers the formulation of a strategic sales program, the implementation of the sales program and the evaluation and control of sales force performance. This course also focuses upon environmental variables, role perceptions, aptitude, skill levels and motivation level. *(Fall only)*

#### **MAR 219 Public Relations Management**

3 Credits

This course enables you to gain an understanding of and apply techniques currently used in public relations management. This course covers the nature of public relations, principles of public relations management and managing of communication between an organization and its publics. *(Fall only)*

### MATHEMATICS

#### **MAT 031 Learning Unlimited Math Review**

1-3 Credits

This course offers a computer-managed, competency-based review of basic math skills. Electronically determined test results generate individualized prescriptions focused on areas identified for review. Completion of mastery tests verifies understanding of material.

#### **MAT 056 Introduction to Mathematics: Pre-Algebra**

3 Credits

This course is for those of you who need a comprehensive review of arithmetic. Topics include the whole numbers, fractions and decimals; percentages; proportion; operations with signed numbers; and equations.

#### **MAT 100 Introductory Algebra**

3 Credits

Prerequisite: MAT 056 or equivalent

This is a first course in algebra intended for students with little or no algebra background or for students who need a review. Topics include manipulation of algebraic expressions, solving first-degree equations in one and two variables, factoring, solving fractional equations, graphing and verbal problem solving.

#### **MAT 102 General Mathematics for College Students**

1-5 Credits

Prerequisite: MAT 056 or permission of instructor

This course provides you with the basics of the mathematical areas of arithmetic review, calculators, measurement, algebra, geometry and trigonometry.

#### **MAT 103 Introduction to Geometry**

3 Credits

Prerequisite: MAT 100 or equivalent

This course is a continuation of MAT 100. Topics include logic, names and properties of geometric figures and basic trigonometry. Skills from MAT 100 are applied.

#### **MAT 105 Intermediate Algebra**

4 Credits

Prerequisite: MAT 100 or equivalent

Requirement: A scientific calculator

This course is intended for students who have recently completed one year of high school algebra or MAT 100. Topics include the set of real numbers, extensive treatment of exponents, radicals, first- and second-degree equations in one variable, functions, linear systems, quadratic equations and graphs.

**MAT 115 Technical Mathematics**

3 Credits

Prerequisite: ASSET numerical score of 40+

This course is designed for vocational/ occupational students. The course provides you with practical mathematical applications that they will encounter in their fields. The course emphasizes careful reading, analyzing and problem-solving specific to individual students' goals. Topics include whole numbers, fractions, decimals, ratio and proportions, percents, measurement, formulas and right angle trigonometry. It is a calculator-based modular course.

**MAT 121 College Algebra**

4 Credits

Prerequisite: MAT 105 with a grade of C or better; or equivalent

Requirement: A scientific calculator (a graphing calculator preferred)

This course is an in-depth study of functions and their applications. It includes a brief review of intermediate algebra; analytic geometry; exponential and logarithmic functions; and linear and nonlinear systems of equations. Selected additional topics may include theory of equations; conic sections; sequences and series or combinatorics.

**MAT 122 College Trigonometry**

3 Credits

Prerequisite: MAT 121 or permission of instructor

Requirement: A graphing calculator

This is a traditional prerequisite course to the calculus sequence. Topics include trigonometric functions (with graphs and inverse functions), identities and equations, solutions of triangles, complex numbers and other topics as time permits.

**MAT 123 Pre-Calculus**

5 Credits

Prerequisite: MAT 105 with a minimum grade of "B" or permission of instructor.

Requirement: A graphing calculator

This is a fast-paced review course in college algebra and college trigonometry intended for those planning to take the calculus sequence. Topics include a review of algebraic manipulations; polynomial, exponential, logarithmic, inverse and trigonometric functions and their graphs; trigonometric identities and equations, conic sections and complex numbers. If you require a slower-paced approach, you are encouraged to take MAT 121 and MAT 122.

**MAT 124 Finite Mathematics**

4 Credits

Prerequisite: MAT 105 or permission of instructor

Requirement: A graphing calculator

This course is primarily for business, life science or social science majors. Topics include functions, matrix algebra, linear programming and an introduction to probability and counting techniques. Emphasis is on applications. This course may include other topics such as statistics when time permits.

**MAT 125 Survey of Calculus**

4 Credits

Prerequisite: MAT 121 or MAT 124 or permission of instructor

Requirement: A graphing calculator

This course is for business, life science and/or social science majors. It includes derivatives, integrals and their applications, with attention restricted to algebraic, exponential and logarithmic functions.

**MAT 135 Introduction to Statistics**

3 Credits

Prerequisite: MAT 105 or equivalent

Requirement: A scientific calculator

This course includes data presentation and summarization, introduction to probability concepts and distributions, statistical inference-estimation, hypothesis testing, comparison of populations, correlation and regression.

**MAT 201 Calculus I**

5 Credits

Prerequisite: MAT 121 and MAT 122; or MAT 123 with a grade of C or better; or equivalent

This course introduces two-dimensional calculus and analytic geometry. Topics include limits, continuity, derivatives and applications of derivatives, as well as indefinite and definite integrals and some applications.

**MAT 202 Calculus II**

5 Credits

Prerequisite: MAT 201 with a grade of C or better

Requirement: A graphing calculator

This course is a continuation of MAT 201. Topics include techniques of integration, polar coordinates, analytic geometry, improper integrals, sequences and infinite series.

**MAT 203 Calculus III**

4 Credits

Prerequisite: MAT 202 with a grade of C or better

Requirement: A graphing calculator

This course completes the undergraduate calculus sequence. Topics include multi-dimensional calculus, vectors, vector-valued functions and multi-dimensional calculus (including partial derivatives, multiple integrals, line integrals and applications).

**MAT 250 Topics in Mathematics**

2 Credits

Prerequisite: MAT 122 or MAT 123

This course includes topics selected to improve mathematical skills and motivate interest, which are not in the standard curriculum. Examples of such topics are mental arithmetic, continued fractions, cubic and quartic equations and actuarial applications.

**MAT 255 Linear Algebra**

3 Credits

Prerequisite: MAT 202 or permission of instructor

This course includes an introduction to the theory of vector spaces, linear transformations, matrix representations, eigenvalues and eigenvectors. (*Offered spring semester only.*)

**MAT 265 Differential Equations**

3 Credits

Prerequisite: MAT 203 or permission of instructor

Requirement: A graphing calculator

The primary emphases in this course are on techniques of problem solving and applications. Topics include first, second and higher order differential equations, series methods, approximations, systems of differential equations and Laplace transforms.

## Multimedia

### MULTIMEDIA TECHNOLOGY

*(See also Film/Video Technology, Graphics/Animation Technology, and Production and Design Technology.)*

#### **MTC 100 Multimedia Equipment and Technology**

3 Credits

Prerequisite: CIS 113

This course introduces the types of equipment and technical considerations used in multimedia productions. It focuses on current types of equipment such as scanners, printers, digital cameras and computers. New types of add-on boards to enhance multimedia production and other peripheral devices are also explored. You gain hands-on experience in how the technology is utilized for input and output in production and design projects.

#### **MTC 101 Introduction to Design and Graphics**

3 Credits

Prerequisite: CIS 113

This course explores the use of tools, computer graphics techniques, procedures and presentations to produce professional graphic designs. You use creative thinking to solve communication and design problems.

#### **MTC 201 Multimedia Production and Management**

3 Credits

Prerequisites: PDT 220 or equivalent experience

This course examines development of multimedia from a production standpoint. The process of transforming conceptual designs into actual projects is explored. Students study the management function of those tasks associated with the business end of development. Teamwork is emphasized throughout the course. (Take during last semester of program.)

### MUSIC

#### **MUS 100 Chorus**

1 Credit

This course is open to students at all vocal levels. Concerts are performed every session and are designed to include a wide variety of music.

#### **MUS 105 Introduction to Music on the Computer**

3 Credits

This course explores the history and modern application of electronic music for the Macintosh and IBM personal computers. Recording from basic music software and setting up a home studio are explored. The course is conducted in the Macintosh laboratory, but utilizes products which function exactly the same in the IBM PC environment. No background in music, electronics or computers is necessary.

#### **MUS 111 Fundamentals of Music**

3 Credits

This course is the equivalent to the Rudiments of Music course and lab offered by every university music school. The science and art of music is emphasized by developing the tools used in notating, creating and listening to music. Topics include basic scale forms, keys, basic chord forms and lead sheet symbols, chord progressions and melody harmonization. Ability to read music is not required.

#### **MUS 112 Music Theory I**

3 Credits

Prerequisite: MUS 111 or permission of the instructor

This course and lab is designed to resemble the Music Theory I course offered for university music school majors. A continuation of MUS 111, students learn to integrate theory. Two-, three- and four-part writing is analyzed to better understand music by studying examples and creating it.

#### **MUS 120 Music Appreciation (Core)**

3 Credits

This course covers the basic materials of music, musical forms, media, genres and musical periods. It emphasizes the development of tools for intelligent listening and appreciation.

#### **MUS 121 Introduction to Music History I (Core)**

3 Credits

This course studies various periods of music history with regard to the composers, aesthetics, forms and genres of each period. Music from the Middle Ages through the Classical period is discussed.

#### **MUS 122 Introduction to Music History II (Core)**

3 Credits

This course is a complement to MUS 121. Music from the early Romantic period to the present is discussed.

#### **MUS 164 History of Jazz**

3 Credits

This course reviews the history of jazz in America and provides basic listening skills for the understanding and appreciation of jazz music.

### NURSING

#### **NUR 108 Nurse Aide/Home Health Aide**

5 Credits

This course prepares you to assist the client in a hospital, home or long-term care facility setting. Basic nursing procedures, personal care and assisting the patient and family with general household activities is covered. The responsibilities involved in working with persons of all ages in wellness and illness is also discussed. After successful completion, you are eligible to take the Colorado Board of Nursing examination to become certified.

#### **NUR 200 Basic Nutrition**

3 Credits

This course covers information about the nutrients needed by the body throughout one's life span for vigor and quality of life. This course is a requirement for basic nursing programs.

#### **NUR 220 Ethics in Health Care**

3 Credits

This course explores the development of ethics in Western tradition and principles as applied to present day health care. The key emphasis is the application of ethics as a tool in analytical thought.

# OCCUPATIONAL SAFETY TECHNOLOGY

*(In cooperation with Trinidad State Junior College)*

## **OSH 110 Fire Protection** 2 Credits

This course enables you to recognize possible fire sources and emergency procedures in the event of a fire. This course includes history of fires, types of extinguishing agents and detecting devices. National Fire Protection and Occupational Safety and Health Standards is stressed.

## **OSH 111 Fire Analysis** 2 Credits

Prerequisite: OSH 110

This course offers an in-depth study of fires and the construction techniques of eliminating fires. Topics include construction techniques, extinguishing systems and detecting systems.

## **OSH 130 Construction Standards** 5 Credits

This course provides the knowledge needed to implement an effective safety program for any size/type of construction site.

## **OSH 131 General Industry Standards** 5 Credits

This course provides you with knowledge to implement an effective safety program for the general industry.

## **OSH 196 Safety Program Planning and Administration** 3 Credits

This course explores practical application methods used in developing and administering, a safety and health/accident prevention plan. This plan meets the current Occupational Safety and Health Administrations standards.

## **OSH 200 Hazardous Material Control** 2 Credits

This course provides information on chemical right-to-know awareness, chemical identification, chemical labeling and chemical material safety data sheets.

## **OSH 201 Workers Compensation Cost Containment** 2 Credits

This course of Colorado Insurance Regulation 91-5, and explains how to design and implement a "Certified Risk Management Program". You receive reference material to aid them in designing a certified program.

## **OSH 202 Accident Prevention** 2 Credits

This course explores the hazards and design elimination techniques through knowledge of accident prevention controls.

## **OSH 203 Ergonomics: Managing Task Stress** 3 Credits

This course familiarizes you with the occupational safety major with the concepts and applications of current ergonomic theory. Discussions include work physiology, engineering anthropometry, biomechanics, work station design and controls. You learn to measure successful application of ergonomic design through improved productivity, efficiency, safety and worker acceptance of resultant system design.

## **OSH 204 Environmental Regulatory Framework** 1 Credit

This course reviews regulations which affect the environment. Regulations discussed are E.P.A.; S.A.R.A.; C.E.R.C.L.A.; and R.C.R.A. OSHA's role in the control of potential environmental mishaps is also provided.

## **OSH 207 Industrial Hygiene** 3 Credits

This course introduces the general concepts of industrial hygiene. Topics include routes of exposure, chemical, physical and biological hazards, ventilation, noise and instrumentation. Identification, evaluation and control of industrial health hazards is stressed.

## **OSH 208 Trenching** 1 Credit

This course presents detailed information on the safety aspects of trenching and excavation. OSHA standards are stressed. Various types of sloping and shoring methods are covered.

## **OSH 209 Grain Handling** 1 Credit

This course familiarizes you with the safety aspects of grain handling. A discussion of grain dust explosibility is covered as well as a review of OSHA enforcement procedures.

## **OSH 210 Drum Handling** 1 Credit

This course explores practical applications used in the manual lifting and handling of drums. A description of chemical hazards is also covered.

## **OSH 230 First Aid** 2 Credits

This course covers techniques in handling accidents and illnesses. Basic first aid techniques are taught to train an individual to give emergency treatment for on-the-job injuries.

## **OSH 240 Case Study Evaluation** 5 Credits

This course teaches students OSHA's interpretations of regulations for the general industry and the construction industry. Individual cases are analyzed by you.

## **OSH 250 Safety Training Methods** 2 Credits

This course introduces current safety training methods. Organization, preparations and delivery are stressed.

## **OSH 261 Independent Study** 3 Credits

This course provides an opportunity for you to work on Occupational Safety related research projects. Research projects vary and are assigned by the advisor based on your need.

## **OSH 290 Direct In-Service Internship** 12-18 Credits

This course is designed for employees working in a safety and/or health department who wish to further their education in occupational safety. You may substitute internship credit for appropriate occupational safety courses required for the A.A.S. degree or certificate. Appropriate credit is determined by an advisor.

## **OSH 296 Pre-Service Internship** 5-12 Credits

This course is for those of you who do not have prior industrial experience in safety and wish to expand their understanding and knowledge of industrial processes and problems. You may substitute internship credit for appropriate occupational safety courses required for the A.A.S. degree. Appropriate credit is determined by an advisor.

## Park Ranger

# PARK RANGER TECHNOLOGY

### **PAR 102 Introduction to Park Ranger Technology**

3 Credits

This introductory course covers the development of public lands in the United States, the various agencies controlling those lands, multi-use doctrine, wilderness, public services provided in parks and the various roles of the park ranger in different settings. Discussed are career planning and park ranger responsibilities, such as law enforcement, natural resource management, protection and interpretation, cultural resource interpretation, visitor services, emergency management and training.

### **PAR 127 Wilderness First Responder**

3 Credits

This course is a first-responder emergency medical course for wilderness responders. The course meets national standards for wilderness medicine and State of Colorado Standards for First Responder.

### **PAR 203 Natural Resource Management**

3 Credits

This course introduces various scientific disciplines and complex issues associated with natural resource management. Career planning, Ecosystem Management, Wildlife Management, Plant Ecology, Agricultural Management, Public Land Acquisition, Cultural Resource Protection, Water and Mineral Resources, Visitor Use, Natural Resource Law Enforcement, and Public Safety are covered. This course emphasizes the management of natural resources through the management of people.

### **PAR 205 Resource Interpretation**

3 Credits

This is a basic course in natural and cultural resource interpretation. The philosophy, techniques and skills necessary to produce exciting and relevant resource interpretation projects are discussed and practiced. Interpretive plans are discussed in detail as well as various techniques used in the field of resource interpretation and public education. The history and development of environmental education and natural/cultural resource interpretation are discussed. Multi-use conflict solutions via public education and resource interpretation are emphasized.

### **PAR 230 Natural Resource Law**

4 Credits

Prerequisites: POST Law Enforcement Academy

This course is designed to train the Law Enforcement Academy graduate in the elements of law enforcement pertaining to natural resources. The course covers the Federal and State statutes regarding natural resources, wildlife, fish, sporting and non-game species laws, off-road travel, stock grazing on public lands, recreational uses of natural resources, mining and multi-use conflict.

### **PAR 235 Park Ranger Skills Seminar**

2 Credits

This is a skills seminar that presents necessary information regarding specialized skills related to the park ranger field. Subjects such as horse handling; fence design, building and repair; vehicle driving; park maintenance; budgeting; and park planning functions are covered. Trail design, construction and repair are also taught. This is a hands-on course so that you can apply your developed skills in the field.

### **PAR 255 Advanced Resource Interpretation**

3 Credits

Prerequisite: PAR 205

This is an advanced course in natural and cultural/historic resource interpretation. It provides you with the skills to plan, prepare and present exciting and relevant interpretation programs for special visitors and situations using a variety of personal and non-personal techniques. Examples of the types of skills offered are: writing and design of site produced publications and exhibit labels, producing basic audio-visual programs; prepare and present special activities such as demonstrations, living history, story telling, costumed interpretation and dramatic/creative arts. Techniques for resource interpretation for the physically or mentally challenged, sensory impaired, elderly and international visitors are discussed. The sensitive handling of controversial/sensitive educational issues is also discussed.

### **PAR 297 Park Ranger Internship**

3 Credits (minimum)

This course gives you valuable field experience necessary for a rational view of the career field, as well as vital networks of people within the field. You are expected to perform or be an observer in all the areas of responsibility within the park ranger career field. You need to have a minimum of 135 contact hours for the 3-credit minimum required for the program.

# PHILOSOPHY

### **PHI 111 Introduction to Philosophy**

3 Credits

Prerequisite: College level reading and writing skills

This course introduces significant human questions and emphasizes understanding the meaning and methods of philosophy. It includes the human condition, knowledge, freedom, ethics, religion and the nature of mind.

### **PHI 112 Ethics**

3 Credits

Prerequisite: College level reading and writing skills

This course examines human life, experience and thought in order to discover and develop the principles and values for pursuing a more fulfilled existence. Theories designed to justify ethical judgments are applied to a selection of contemporary personal and social issues.

### **PHI 113 Logic**

3 Credits

Prerequisite: College level reading and writing skills

This course studies effective thinking using language-oriented logic. It provides tools and develops skills for creative and critical thinking. It emphasizes the development of decision-making and problem-solving skills.

### **PHI 114 Philosophy of Religion**

3 Credits

Prerequisites: College-level reading and writing skills

This course is a philosophical introduction to the basic topics in philosophy of religion. The course explores related topics of world religions, including the problem of evil, arguments for and against the existence of God, the nature of faith, problems of religious language and conflicting truth claims in religions.

**PHI 115 Comparative Religions**

3 Credits

Prerequisite: College level reading and writing skills

This course develops the ability to interpret and understand human religious experience by comparing religious traditions. Philosophical similarities and differences will be compared among Hinduism, Buddhism, Taoism, Confucianism, Shinto, Judaism, Christianity and Islam. Pre-literate or contemporary religions may also be included.

**PHI 116 Applied Ethics**

3 Credits

Prerequisites: College-level reading and writing skills

This course introduces you to practical reason. Varieties of ethical principles are applied to specific areas of human decision making in order to elucidate the choices and reasons for action. The specific areas of analysis that the course typically addresses are ethics of life and death, business ethics, ethics of war and peace and sexual ethics.

**PHI 118 Religion in American Culture**

3 Credits

Prerequisites: College-level reading and writing skills

This course investigates the various ways in which religion and American culture interact. Beginning with the religion of Native Americans, which existed in a pre-modern society where religion went unchallenged as the preeminent organizing principle, to our post-modern era, where religion competes with a multiplicity of other belief systems in a complex societal matrix. This course pays close attention to the sundry ways in which religion and American culture interface.

**PHI 125 Critical Thinking**

3 Credits

Prerequisites: College-level reading and writing skills

This course provides tools and develops skills for creative and critical thinking. It covers the uses of language, the art of definitions and explanations, the nature of argumentation and debate, the looking for the presuppositions and the preparations of outlines and speeches.

**PHI 280-285 Special Topics in Philosophy**

3 Credits

Prerequisite: Prior Philosophy course, sophomore standing or Instructor Permission

You explore in-depth specific topics, movements, or persons in the history of philosophy. This study might include e.g. Plato, Greek Philosophy, Hume, periods in the history of philosophy, philosophy literature, environmental ethics, philosophy of mind, etc. Readings are selected by the instructor as appropriate to the topic. Course may be repeated for credit provided topics are not repeated.

**PHYSICAL EDUCATION**

*\* All the PHE courses pertaining to mountain-oriented recreation have one or more field trips. Most field trips are single-day trips scheduled on a weekend. You should check with the PHE Department to see which courses may have weekday field trips or courses which require overnight camping.*

**PHE 100 Aerobic Conditioning/ Fitness Education Center**

1 Credit

This course is designed for individuals interested in improving total fitness via an aerobic-based conditioning program. This course includes an individual fitness evaluation, computerized analysis of results and a prescribed exercise program. Conditioning is done on a circuit training system, utilizing a series of weight machines and aerobic stations.

**PHE 133 Volleyball**

1 Credit

This course is a hands-on course designed to develop and/or enhance basic knowledge and skills for the game of volleyball. Emphasis is on your practical skills and performance. Relevant concepts include proper technique, rules, etiquette and equipment. An additional membership fee of \$100.00 must be paid to The Point Athletic Club.

**PHE 134 Racquetball**

1 Credit

This course is designed for individuals with intermediate to advanced racquetball skills. Emphasis is on your practical skills, individual performance and competition. Topics include rules, techniques and equipment (*equipment not provided*). An additional membership fee of \$100.00 must be paid to The Point Athletic Club.

**PHE 136 Weight Training**

1 Credit

This course provides an overview of basic weight training equipment and techniques for all levels. The course is designed to improve individual fitness and develop knowledge and skills to be used for lifetime fitness in a variety of settings. Topics include principles of weight training, equipment and wellness concepts. An additional membership fee of \$100.00 must be paid to The Point Athletic Club.

**PHE 146 Scuba Diving**

1 Credit

This course covers basic instruction and skills in scuba diving. Aqua charges are required for participants in this course and individuals must furnish their own scuba diving equipment or rent equipment.

**PHE 150 Aerobic Conditioning II/ Fitness Education Center**

1 Credit

Prerequisite: PHE 100

This advanced course in aerobic conditioning is designed for individuals interested in attaining a high level of total fitness. This course includes a continuation of an individualized fitness program. Weight training equipment, bicycle ergometers, a rowing machine, a treadmill and other aerobic equipment are used to elicit improvements in physical fitness.

**PHE 151 Beginning Tennis**

1 Credit

This course includes selection and the buying of equipment to best fit your needs. The fundamental skills of forehand, backhand, serve and net volley are covered. Scoring, rules and court etiquette are introduced in both the singles and doubles game.

**PHE 152 Intermediate Tennis**

1 Credit

This course reviews all basic strokes: forehand, backhand, serve and volley at the net. More emphasis is placed on footwork, playing time and strategy for both singles and doubles. The lob, half-court volley and overhead smash are introduced.

## Physical Education

### **PHE 170 Cross Country Skiing**

2 Credits

This course emphasizes equipment, skills and techniques for cross country skiing. It includes winter condition dangers and places to ski.

### **PHE 176 Bicycle Camping**

2 Credits

This course covers the fundamentals of using the bicycle for camping recreation. It includes equipment, clothing, repair procedures and camping techniques.

### **PHE 177 Guide to Hiking/Climbing**

1 Credit

This course provides wilderness sites and their specific location in Colorado where one can go to hike or camp. It includes selected wilderness sites in other western states. Information is included about how to use guide books and selected maps.

### **PHE 180 Basic Mountaineering I\***

3 Credits

This course emphasizes the fundamentals of mountaineering up to a 4th class skill level. It includes belaying, rappelling, clothing, equipment and safety values.

### **PHE 181 Basic Rock Climbing\***

2 Credits

Presents rock climbing concepts. This is the class that will start you climbing higher and safer. Develop your climbing skills. This class will visit local climbing areas where you can climb easy 5.0 to moderate 5.8 climbs depending on your ability. Enjoy a full semester of climbing.

### **PHE 182 Intermediate Rock Climbing\***

2 Credits

Presents the Sharp End of rock climbing. This class will further your knowledge of basic concepts and get your leading the climb. Learn how to place protection, anchors, and setup top ropes safely. Intermediate rock climbing emphasizes safety and continuation of higher and safer climbing. I.R.C. also lasts the full semester.

### **PHE 183 Basic Ice Climbing\***

2 Credits

This course emphasizes fundamentals of climbing high angle ice. It includes clothing, equipment, ice climbing techniques and safety values.

### **PHE 185 Snow and Glacier Climbing\***

3 Credits

This course emphasizes the use of ice axe, crampons and roped climbing on snow. It includes route finding and crevasse rescue.

### **PHE 186 Orienteering\***

2 Credits

This course emphasizes competitive cross country walking and running using map and compass. It includes techniques, rules and field trips.

### **PHE 187 Map and Compass for the Outdoorsperson\***

3 Credits

This course covers the reading of highway, forest service and topographic maps which include symbols, legends, border information and contour lines. It includes the usage of a magnetic compass in an outdoor environment and functions that plot a course on maps. Supplemental navigational skills are included.

### **PHE 188 Backpacking\***

2 Credits

This course emphasizes the fundamentals of backpacking. It includes clothing, equipment, places to backpack and a field trip.

### **PHE 189 Climbing/Backpacking Expedition\***

3 Credits

This course is a group expedition covering seven to ten days backpacking, hiking and climbing in remote North American regions. It includes the rationale for organizing and conducting wilderness trips.

### **PHE 190 Snowshoeing\***

1 Credit

This course emphasizes basic skills, equipment, clothing and techniques of snowshoeing. It includes the objective dangers involved with winter recreation.

### **PHE 200 Aerobic Conditioning III/ Fitness Education Center**

1 Credit

Prerequisites: PHE 100, 150

This advanced course in aerobic conditioning is designed for individuals interested in maintaining a high level of total body fitness. This course includes further improvement of an individualized fitness program. This is accomplished by continuing to increase the intensity of the work-out and the number of circuits completed. Upper and lower body weight training equipment, bicycle ergometers, a rowing machine, treadmills, Universal Fitstepper and other aerobic equipment are used to elicit further improvements in physical fitness.

### **PHE 218 Outdoor Recreation Leadership**

2 Credits

This course studies the history, development and trends of outdoor recreation, conservation and organized camping. Emphasis is on large group camping, field trips and the development of outdoor leadership skills.

### **PHE 220 Wilderness Equipment and Facilities\***

3 Credits

This course is designed to acquaint and familiarize you with wilderness equipment and program facilities. It includes a field trip.

### **PHE 221 Mountaineering Teaching Concepts\***

3 Credits

This course covers planning and methods required to teach mountaineering skills. You give lectures and conduct field trips.

### **PHE 222 Basic Search and Rescue\***

3 Credits

This course covers the basic fundamentals required for basic search and rescue in a wilderness environment. It includes tracking techniques and field trips.

### **PHE 223 Backpack Cooking\***

1 Credit

This course covers menu planning and nutritional requirements for wilderness camping. It includes cooking a backpack meal.

### **PHE 224 Colorado's Fourteeners\***

2 Credits

This course presents an historical look into the naming and climbing of Colorado's 14,000-foot mountain peaks. It includes information on the current routes to ascend the peaks.

### **PHE 225 Routefinding\***

1 Credit

This course covers the concepts of finding the optimum path when hiking rough terrain or climbing a mountain. It includes a review of standard map and compass techniques.

### **PHE 226 Wilderness Dangers\***

1 Credit

This course provides familiarization of the objective and subjective dangers of the wilderness. This course includes a field trip.

**PHE 227 Basic Mountaineering II\***

3 Credits

This course is a continuation of PHE 180 and/or PHE 185 and it involves climbing a peak of moderate difficulty involving a time span of two to four days.

**PHE 228 Wilderness Ethics**

2 Credits

This course emphasizes the motivation, aesthetics and ethics of mountaineering. It includes wilderness conservation principles.

**PHE 229 Wilderness Survival\***

3 Credits

This course emphasizes the physiological and psychological principles of survival. Survival equipment, wilderness improvising techniques and wilderness dangers are included.

**PHE 230 Mountain Photography\***

3 Credits

This course presents the fundamentals of composition and lighting for mountain photography. It includes a slide photo contest and critique sessions.

**PHE 250 Aerobic Conditioning IV/  
Fitness Education Center**

1 Credit

Prerequisites: PHE 100, 150, 200

This advanced course in aerobic conditioning is designed for individuals interested in maintaining a high level of total body fitness. This course includes continued improvement of an individualized fitness program. This is accomplished by continuing to increase the intensity of the work-out and by varying the equipment used to reach fitness goals. Upper and lower body, as well as specialized weight training equipment, bicycle ergometers, a rowing machine, treadmills, NordicTrack®, Universal Fitstepper, Aerobicycles and other aerobic equipment are used to elicit continued improvements in physical fitness.

**PHE 259 Wilderness Survival II\***

3 Credits

This course is an extension of PHE 229 Wilderness Survival and is an extended wilderness field exercise in wilderness survival concepts and improvising.

**PHYSICS**

**PHY 105 Conceptual Physics**

4 Credits

This course studies mechanics, heat, properties of matter, electricity and magnetism, light and modern physics. The course includes laboratory.

**PHY 111 Physics: Algebra-based I**

5 Credits

Prerequisite: MAT 121

This course studies mechanics and heat. The course includes laboratory.

**PHY 112 Physics: Algebra-based II**

5 Credits

Prerequisite: PHY 111 or permission of instructor

This course enables you to learn about electricity and magnetism, light and modern physics. The course includes laboratory.

**PHY 211 Physics: Calculus-based I**

5 Credits

Prerequisite: MAT 201

This course explores mechanics, heat and wave motion. The course includes laboratory.

**PHY 212 Physics: Calculus-based II**

5 Credits

Prerequisite: PHY 211 or permission of instructor

This course covers wave motion, electricity, magnetism and light. The course includes laboratory.

**PLUMBING**

**PLU 100 Introduction to Plumbing**

3 Credits

Prerequisite: Fundamental math skills

This course introduces plumbing techniques and skill development, plumbing drawings using 30/60 isometric three-dimensional system and material list from drawing.

**PLU 106 Waste and Vent Layout and Code Requirements**

5 Credits

Prerequisite: PLU 100 or permission of instructor

This course introduces students to the installation of residential and commercial plumbing jobs using soil pipe, plastic or copper tubing to meet code requirements, venting systems, making material lists and installation.

**PLU 107 Water Piping Methods and Back Flow Prevention**

3 Credits

Prerequisite: PLU 100 or permission of the instructor

This course is an introduction to drawing water piping systems, sizing, installation and brazing and silver soldering methods. This course also covers back flow prevention.

**PLU 109 Residential Plumbing**

4 Credits

Prerequisite: PLU 100, 106, 107 or permission of the instructor

This course enables you to draw complete soil, waste, vent, water and gas systems which meet codes and safety procedures and develop skills in installations.

**PLU 110 Finish and Installation of Plumbing Fixtures**

3 Credits

Prerequisite: PLU 100, 107 or permission of the instructor

This course introduces installing plumbing fixtures on existing rough-ins to meet all code and safety requirements.

**PLU 116 Plumbing Repair**

3 Credits

This course introduces repairing, servicing or replacing plumbing equipment.



## **Plumbing**

### **PLU 206 Hot Water Heating Systems**

4 Credits

Prerequisite: PLU 107; AHR 102, 105 or permission of the instructor

This course covers the theory of operation behind these systems, as well as installation, maintenance and repair. It also examines: air elimination, circulator pump and pipe sizing. Boiler and heat convertor sizing are discussed.

### **PLU 207 Basic Solar Energy**

3 Credits

Prerequisites: PLU 107 and 206

This course includes drawing and installation of domestic solar water heating systems.

### **PLU 208 Advanced Solar Energy**

3 Credits

This course includes solar panel construction, installing complete solar heating or domestic hot water systems, with the study of the variables and flexibility of the system.

### **PLU 210 Commercial Layout and Code Multi-Story Projects**

3 Credits

Prerequisite: PLU 106

This course introduces you to commercial and multi-story projects. Installations in commercial work and code applications for these structures are reviewed.

### **PLU 216 Uniform Plumbing Code**

2-3 Credits

Prerequisite: PLU 106 or permission of instructor

This course presents the Uniform Plumbing Code and Colorado State Plumbing Code, the proper interpretation of the Code and the need to enforce it. This course is designed to help plumbers pass state plumbing licensing examinations.

### **PLU 225 Technical Project**

6 Credits

This course enables students to participate in individual study on a special project which is related to the plumbing program. This technical project consists of: a written and approved proposal and scheduled progress reports.

## **POLITICAL SCIENCE**

### **POS 105 Introduction to Political Science**

3 Credits

This course is a survey of the discipline of political science, including political philosophy and ideology, democratic and nondemocratic governments and processes and international relations.

### **POS 111 American Government**

3 Credits

This course gives students a background in the U.S. Constitution; the philosophy of American government; general principles of the Constitution; federalism; civil liberties; public opinion and citizen participation; political parties, interest groups and the electoral process; and the structure and functions of the national government.

### **POS 125 American State and Local Government**

3 Credits

This course studies the structure and function of state, county and municipal governments including their relations with each other and with the national government. Colorado government and politics are emphasized.

### **POS 215 Current Political Issues**

1-3 Credits

This course is an in-depth analysis of critical issues in political science. Topics are determined each session.

## **PRODUCTION AND DESIGN TECHNOLOGY**

### **PDT 150 Computer Presentation Graphics**

3 Credits

Prerequisite: GAT 125

Explore different options for multimedia authoring. Learn storyboarding techniques and project planning for successful multimedia projects.

### **PDT 205 Computer Art Studio**

3 Credits

Prerequisite: GAT 120 or GAT 106

This course teaches you how to work with illustration and paint software on the Macintosh computer. Color and relationships, repeat patterns, animation and digitization are among the topics covered in the course as you explore the possibilities of computers in visual art. Assigned projects cover a wide range of visual approaches.

### **PDT 210 Sound Design for Multimedia**

3 Credits

Prerequisite: CIS 113 or PDT 150

This course explores the use of sound in multimedia productions. It focuses on how sound can enhance interactive productions and improve computer presentations. You learn how to use the Macintosh computer as a full audio studio.

### **PDT 220 Multimedia Development**

3 Credits

Prerequisite: PDT 150 or permission of instructor

This course explores the interactive process within all areas of program design, courseware authoring, delivery techniques and instruction strategies. You are introduced to CD-ROM technology and produces an interactive program during the course.

### **PDT 290 Special Topics**

3 Credits

Prerequisite: permission of instructor

This course provides an opportunity to examine new technology and advanced techniques in computer art.

## **PRODUCTION MANAGEMENT**

### **PRM 211 Production Management I** 3 Credits

This course presents the principles and practices of industrial management. It emphasizes the organizational structure of a production enterprise, production facilities, methods and procedures for effective plant layout, plan and equipment maintenance and purchasing.

### **PRM 212 Production Management II** 3 Credits

Prerequisite: PRM 211

This course is a continuation of PRM 211. It emphasizes development of skill and knowledge in control systems, employee development systems and procedures for managing human resources.

## **PSYCHOLOGY**

### **PSY 095 Learning and Skills Development** 1 Credit

This is the core course for the Special Learning Support Program. Topics include attention and concentration organization skills, memory strategies, following directions and instructions, problem solving strategies and time management. If you have learning-related anxiety, you will also benefit from this course.

### **PSY 100 Human Relations In Business** 3 Credits

This course emphasizes psychological principles as related to the work environment. Topics include motivation, interpersonal relationships, self-understanding, employee/ employer relations and group behavior.

### **PSY 101 General Psychology I** 3 Credits

This course includes the scientific study of behavior with emphasis on the historical development of the discipline, research methods, psychobiology, sensation/perception, consciousness, emotion, motivation, stress/coping, learning and memory.

### **PSY 102 General Psychology II** 3 Credits

Prerequisite: PSY 101 is recommended

This course is a continuation of PSY 101, and reviews the classical and current research on Life Span Psychology, Cognition, Intelligence, Language, Personality Theory, Psychotherapy, Psychopathology and Social Psychology.

### **PSY 109 Career Development** 1-3 Credits

This course assists you in recognizing their career potential and provides tools for making realistic decisions concerning educational and occupational objectives.

### **PSY 115 Psychology of Adjustment** 3 Credits

This course emphasizes personal growth and the development of interpersonal skills. Focus is on practical application of psychological principles and theories in achieving self-understanding and personal growth.

### **PSY 116 Stress Management** 1-3 Credits

This course identifies the physiological, emotional and behavioral aspects of stress. Techniques of stress reduction and management are explored and applied.

### **PSY 205 Psychology of Women** 3 Credits

This course covers emotional, cognitive, interpersonal and cultural contributions to female identity and gender role.

### **PSY 211 Introduction to Human Services I** 3 Credits

This course integrates knowledge and theories from a variety of behavioral sciences. It is not intended to develop analysts or therapists, but rather is designed to sensitize you to the issues and development of human services.

### **PSY 212 Introduction to Human Services II** 3 Credits

This course examines in-depth the contemporary phenomenon of complex human behavior. Emphasis is in the area of group dynamics, the communication process, group problem-solving and group growth.

### **PSY 217 Human Sexuality** 3 Credits

This course is a survey of physiological and psychological aspects of human sexuality. Topics include relationships, sexual identity and sexual health.

### **PSY 226 Social Psychology** 3 Credits

Prerequisite: Three credits of general psychology; three hours of introductory sociology or permission of instructor

This course covers behavior of humans in social settings including attitudes, aggression, conformity, cooperation and competition, prejudice and interpersonal attraction.

### **PSY 227 Death and Dying** 3 Credits

Prerequisite: Three credits of general psychology or permission of instructor

This course covers philosophies of life and death, emphasizing dying, death, mourning and the consideration of one's own death.

### **PSY 235 Human Growth and Development** 3 Credits

Prerequisite: Three credits of general psychology or permission of instructor

This course is a survey of human development from conception to death emphasizing physical, cognitive, emotional and psychosocial factors.

### **PSY 237 Assertiveness Training** 1-3 Credits

This course teaches the awareness of individual rights and needs in interpersonal relationships.

### **PSY 238 Child Development** 3 Credits

Prerequisite: Three credits of general psychology or permission of instructor

This course covers growth and development of the child from conception through the elementary school years, emphasizing physical, cognitive, emotional and psychosocial factors. *This course is co-scheduled with ECE 110 and may be taken as ECE 110 or PSY 238 but not both.*

## **Psychology**

### **PSY 239 Adolescent and Adult Development**

3 Credits

Prerequisite: Three credits of general psychology or permission of instructor

This course covers growth and development of the individual from adolescence to death, emphasizing physical, cognitive, emotional and psychosocial factors.

### **PSY 249 Abnormal Psychology**

3 Credits

Prerequisite: Three credits of general psychology or permission of instructor

This course is a study of abnormal behavior and its classification, causes, prevention and treatment.

## **RADIOLOGIC TECHNOLOGY**

### **RAD 105 Radiographic Procedures I**

3 Credits

This course introduces the fundamentals of radiographic positioning including the proper use of radiographic equipment and safety, positioning terminology, related anatomy and pathology. Radiographic positioning focuses on the chest, upper extremities and lower extremities. A laboratory experience is incorporated to allow proper demonstration and positioning skills to be attained, along with the proper use of the radiographic equipment.

### **RAD 106 Clinical Education I**

5 Credits

This clinical experience takes place within a medical care facility. You are required to participate at pre-scheduled time periods to apply your radiographic skills in the clinical setting. The course allows for learning transferability from the classroom to practical applications within a radiology department.

### **RAD 115 Radiographic Procedures II**

3 Credits

This course is a continuation of RAD 105. Equipment operation, positioning terminology, related anatomy and pathology are discussed and correlated with more advanced positioning skills. Radiographic positioning focuses on the lower extremities, spine, abdominal, urinary and fluoroscopic procedures. A laboratory experience is included to allow for proper demonstration and positioning skills to be attained.

### **RAD 116 Clinical Education II**

5 Credits

This course introduces advanced concepts from the clinical experience gained in RAD 115. The focus is on clinical tasks performed by a registered radiographer and allows for learning transferability from the classroom to the clinical setting.

### **RAD 165 Imaging Equipment I**

3 Credits

This course presents the fundamental aspects and physics involved in the production of x-rays. Included are basic imaging equipment, physics fundamentals as they relate to x-ray production, the x-ray machine, image receptor equipment and the control of scattered radiation.

### **RAD 175 Imaging Equipment II**

3 Credits

This course covers material that builds on the image production physics gained in RAD 165. The fundamentals of the various aspects of image production including factors that affect film quality, quality control of radiographs, technical factors, sensitometry, film processing, and how various additional factors such as pathology can affect radiographic imaging are included in this course.

### **RAD 185 Patient Care I**

3 Credits

This course covers the Radiology profession along with basic medical care skills necessary for a medical professional. You are provided with the knowledge to understand the concepts of effective communication, ethical and medicolegal considerations, cultural diversity, the history of the radiography profession, today's concepts in medicine, medical terminology, use of proper body mechanics, universal precautions, basic patient assessment, and proper patient transfers.

### **RAD 195 Patient Care II**

2 Credits

This course expands on concepts presented in RAD 185. The focus is primarily on direct patient care and contact skills including vital signs, medical emergencies, assistance with drug administration, care of patients with special needs, EKG, and death/dying issues.

### **RAD 225 Radiographic Procedures III**

3 Credits

This course presents positioning and radiographic skills of the cranium and facial bones, along with specialized radiology examinations and other medical imaging modalities. You must also demonstrate effective communication techniques and presentation skills that are required of today's health professionals.

### **RAD 226 Clinical Education III**

7 Credits

A continuation of RAD 116. This clinical experience provides a means by which you can increase their clinical skills through learning transferability from the classroom to the clinical setting.

### **RAD 236 Clinical Education IV**

8 Credits

A continuation of RAD 226. This clinical experience provides a means by which you can continue to increase your clinical skills.

### **RAD 246 Clinical Education V**

11 Credits

This course is a continuation of RAD 236. This experience is the final step in obtaining clinical proficiency prior to graduation. You must demonstrate complete clinical mastery prior to graduation.

### **RAD 260 Registry Review**

2 Credits

This review prepares you in your studies to participate in the National Registry Examination for Radiologic Technologists. Emphasized in this review are the five major subject areas covered on the examination, as well as preparing you for job searches with resume and interview techniques.

### **RAD 270 Radiation Biology**

2 Credits

Prerequisites: RAD 115, 116, 175 and 195

Corequisites: RAD 225 and 236

This course provides the basic knowledge and understanding of the effects of ionizing radiation on biological systems and essential radiation protection guidelines to prevent unnecessary radiation exposures while providing patient and radiographer safety.

**READING****REA 060 Intro to Reading/Study Skills**  
3 Credits

This course assists you with vocabulary building, reading comprehension and study skills.

**REA 092 Skills for College Reading**  
1-3 Credits

This course is intended for those of you who want to improve reading skills to enhance success in your college programs. This course covers literal and critical comprehension and effective textbook reading skills for technical and non-technical majors.

**REA 093 Skills in Test-Taking**  
1 Credit

This course improves test-taking skills and/or reduces the nervous tension experienced before or during a test. It involves stress reduction and the development of skills for taking multiple-choice, true-false and essay tests. Also, specialized test review is offered for the PLACE, ACT, SAT and GRE.

**REA 094 Vocabulary Development**  
1-3 Credits

This course uses various approaches to develop vocabulary according to your needs, as well as focuses on the development of specialized vocabulary in your major area of personal or career interest, including business, English as a Second Language or college/professional emphasis.

**REA 096 Speed Reading and Efficiency**  
1-3 Credits

This course is designed for those of you who want to develop your reading power and reading speed. The course is built upon the fundamental aspects of increasing speed and comprehension in an organized manner. The course focuses on different reading rates, the purpose of reading, the myths about reading, the mechanics of reading, components of comprehension, vocabulary development, study methods and general enrichment.

**REA 097 Special Topics**  
1-3 Credits

This course offers you an opportunity to participate in a developmental studies program specific to unique needs.

**STS 060 Learning Success Strategies**  
1-3 Credits

This course introduces you to the various study skills strategies necessary to succeed in a college setting. Emphasis is placed on applying skills to content area courses and/or other learning environments.

**REAL ESTATE****REE 101 Real Estate Practice and Law**  
4 Credits

This course is a general survey of real estate principles and practices designed to provide basic knowledge of real estate. Coverage includes a common body of knowledge of real estate, key terms and concepts in real estate, as well as the related federal laws practiced in the majority of states on a national level. This course satisfies part of the education required for a real estate broker's license.

**REE 102 Colorado Real Estate Contracts and Regulations**  
4 Credits

This course covers the preparation and understanding of the various Colorado Real Estate Commission approved contracts and an understanding of Colorado real estate regulations. This course satisfies part of the education required for a real estate broker's license.

**REE 103 Recordkeeping and Trust Accounts**  
1 Credit

This course prepares you in the proper recordkeeping procedures required by the Real Estate Commission to maintain and account for funds belonging to others. This course satisfies part of the education required for a real estate broker's license.

**REE 104 Current Legal Issues**  
1 Credit

This course focuses on the development and enhancement of knowledge and awareness of current real estate law and real estate related statutes and regulations and important legal issues, developments and practices as specified by the Colorado Real Estate Commission. This course satisfies part of the education required for a real estate broker's license.

**REE 105 Closings**  
3 Credits

This course examines in depth real estate closing documents and practices. It instills the basic skills necessary to properly close a real estate transaction, including responsibilities from the contract through and after the closing, plus accounting for all funds received and disbursed as well as a comprehensive review of the legal documents prepared by the broker. This course satisfies part of the education required for a real estate broker's license.

**REE 106 Practical Applications**  
3 Credits

This course is for individuals who are to become newly licensed as a real estate broker. The course emphasizes the practical application of laws, rules and standard practices in real estate transactions. This course satisfies part of the education required for a real estate broker's license.

**REE 107 Brokerage Administration**  
3 Credits

This course is for individuals who are to become newly employing real estate brokers. Course content includes the practical application of laws, rules and sound business practices for the establishment and everyday management operation and supervision of a real estate brokerage company. This course satisfies the education required for one to obtain an employing real estate broker's license.

**REE 108 Colorado Broker Transition**  
3 Credits

This course is for individuals who currently hold a valid real estate salesperson license and are to renew as a real estate broker associate. Course content includes real estate brokerage relationships with both sellers and buyers, sales contracts and the closing. This course satisfies the education required for salesperson licensee to renew as a real estate associate broker.

**REE 109 Mandatory Continuing Education**  
1 Credit

This course is for individuals who currently hold a valid real estate broker license and are required to successfully complete the mandatory continuing education course. The course content adheres to that which is prescribed by the Colorado Real Estate Commission. This course satisfies part of the continuing education required for a real estate broker's license.

**REE 201 Topics in Real Estate**  
1-3 Credits

This course covers select areas, concepts and developments that affect the real estate industry. Content of each offering may vary to address the particular area of emphasis specified for such offering. This course satisfies part of the continuing education required for a real estate broker's license.

## Small Business

### **SMALL BUSINESS MANAGEMENT**

#### **SBM 101 Starting a Small Business**

1 Credit

This course reviews all of the components of starting a small business for the person with limited or no business experience who is considering establishing and operating a small business. Topics include financing the business plan, profile of a successful entrepreneur, marketing and pitfalls to avoid.

#### **SBM 102 Managing a Small Business**

1 Credit

This course covers the management process as it applies to the small business in detail. The management functions of planning organizing and controlling are explained. Decision-making skills are also covered.

#### **SBM 105 Financing a Small Business**

1 Credit

This course introduces the basics of financing a small business. It specifically examines the business plan, sources of capital, types of business loans and then briefly looks at how to maintain a cash flow.

#### **SBM 107 Recordkeeping for a Small Business**

1 Credit

This course emphasizes the importance of accurate recordkeeping in a small business operation and the development of the basic skills to recognize simple bookkeeping procedures. You are shown examples of journal entries, balancing records, checkpoints for ensuring accuracy of records, deposit requirements and tax forms.

#### **SBM 109 Analyzing Financial Statements Used in a Small Business**

1 Credit

This course introduces the tools, techniques, financial statements and financial ratios used in the financial management of a small business. Topics covered are balance sheets, profit and loss statements, financial ratios, depreciation and taxation.

#### **SBM 115 Marketing for a Small Business**

1 Credit

This course introduces the concepts, terminology and steps utilized in planning a marketing strategy. It also familiarizes you with the activities included in promoting a business.

#### **SBM 116 Sales Techniques for the Entrepreneur**

1 Credit

This course explores the importance of selling for the small business and provides information on identifying customers, the selling process, characteristics of successful sales representatives and the sales plan.

#### **SBM 118 Starting and Marketing a Professional Service**

1 Credit

This course allows you to learn the business steps essential to successfully start and market a professional service, such as a consulting business, an accounting office or a medical service.

#### **SBM 119 Purchasing, Pricing and Inventory Control**

1 Credit

This course explores the vital functions performed in the operation of a small business including purchasing, pricing and inventory control. Each function is examined individually and relative formulas, definitions, guidelines and management tools are discussed.

#### **SBM 130 Business Writing Skills for the Entrepreneur**

1 Credit

This course reviews the rules and skills to effectively write business correspondence, news releases, policies and procedures, statements, ads for positions and job descriptions.

#### **SBM 206 Legal Aspects of a Small Business**

1 Credit

This course is designed to equip the small business owner with the necessary knowledge about legal issues to effectively negotiate business transactions. This course focuses on business organizations, contracts and agreements and protecting the business.

#### **SBM 215 Managing Human Resources in a Small Business**

1 Credit

This course teaches you about managing a company's most vital asset (the employees). This course covers hiring employees, developing training programs, supervising employees, conducting performance evaluations and developing a compensation package.

#### **SBM 290 Special Topics**

1 Credit

This course covers current topics of interest to small businesses.

### **SOCIOLOGY**

#### **SOC 101 Introduction to Sociology I**

3 Credits

This course examines the basic concepts, theories and principles of sociology, as well as human cultures, social groups and the social issues of age, gender, class and race.

#### **SOC 102 Introduction to Sociology II**

3 Credits

This course examines social institutions and organizations from the macro perspective. It emphasizes the issues of social change, demography, social movements and conflicts and trends within education, religion, family, political and economic structures.

#### **SOC 117 Human Relations in Business and Industry**

3 Credits

This course emphasizes psychological/ sociological principles as related to the working environment. Specific topics include motivation, interpersonal relationships, self-understanding, employee/ employer relations and group behavior.

#### **SOC 201 The Museum in Urban Life**

1 Credit

This course explores the roles a museum plays in the life of a city by studying the Denver Art Museum and the Museum of Natural History. This course notes how history is selectively preserved and the powerful role select segments of the community play in shaping new directions in art.

#### **SOC 205 Marriage and Family**

3 Credits

This course helps students develop an understanding of marriage, family and kinship. It examines the family as an institution and how social, cultural and personal factors influence family relations. The stability and diversity of the family are explored, along with current trends and some alternative life styles.

#### **SOC 215 Contemporary Social Problems**

3 Credits

This course explores current social issues that result in societal problems. It focuses on such issues as civil liberties, gender discrimination, substance abuse, crime, poverty and social change.

**SOC 218 Sociology of Minorities**

3 Credits

This course explores the variety of intergroup relations; race, nationality, ethnic, income and other minority classifications. Patterns of prejudice, discrimination and possible solutions to these issues are examined.

**SOC 226 Social Psychology**

3 Credits

Prerequisite: PSY 101 or PSY 102 or permission of instructor

This course explores social factors which influence the behavior of individuals as they interact with others. Specific topics include aggression, attraction, prejudice, communication, group dynamics, leadership and non-verbal communication. *This course is co-scheduled with PSY 226 and may be taken as PSY 226 or SOC 226 but not both.*

**SOC 227 Sociology of Death and Dying**

3 Credits

This course examines the event of death and the process of dying. It explores the cause of death and the experience of dying in nursing homes, emergency rooms and hospice. A review of the ethical and political issues of death and dying are studied.

**SOC 254 Juvenile Delinquency**

3 Credits

This course examines the causes and consequences of delinquency. Types of young people committing offenses, the acts committed, juvenile courts, detention centers, parole and probation are topics covered.

**SOC 255 Criminology**

3 Credits

This course presents the nature and causes of crime as a social phenomenon. Major criminological theories are considered; the characteristics of criminal behavior and the processes of making laws, breaking laws and the reaction toward the breaking of laws are studied.

**SOC 257 Prevention, Correction, Treatment and Custody**

1-3 Credits

This course includes an overview of correctional approaches. Various types of prisons, from maximum security to community-based corrections and the internal structure and procedures of today's prisons are studied.

**SOC 258 Violence and Morality**

3 Credits

This course looks at the moral, physical, emotional and legal ramifications of the use or the lack of use, of lethal force in human relations. This course focuses upon values introduces the fate of victims of violent crime, both those who survive and the families of those who do not. It also investigates the nature of the criminal mind using readings and texts written by specialists in forensic psychiatry. In addition, you are introduced to the Judeo-Christian, common law tradition that has led to the evolution of our constitutional right to self-preservation.

**SPANISH**

*The order of the topics and the methodology vary according to the individual texts and instructors.*

**SPA 101 Conversational Spanish I**

3 Credits

This is the first course in a sequence for beginning students who wish to understand and speak Spanish. The material includes basic vocabulary, grammar and expressions that are used in daily situations and in travel.

**SPA 102 Conversational Spanish II**

3 Credits

Prerequisite: SPA 101 or permission of instructor

This is the second course in a sequence for beginning students who wish to understand and speak Spanish. The material continues to cover basic conversational patterns, expressions and grammar. *This course may not transfer to a four-year institution.*

**SPA 111 Foreign Language I**

5 Credits

This course begins a sequence dealing with the development of functional proficiency in listening, speaking, reading and writing the language.

**SPA 112 Foreign Language II**

5 Credits

Prerequisite: SPA 111 or permission of instructor

This course continues the development of functional proficiency in listening, speaking, reading and writing the language.

**SPA 211 Foreign Language III**

3 Credits

Prerequisite: SPA 112 or permission of instructor

This course continues the development of increased functional proficiency in listening, speaking, reading and writing the language.

**SPA 212 Foreign Language IV**

3 Credits

Prerequisite: SPA 211 or permission of instructor

This course continues the development of increased proficiency in listening, speaking, reading and writing the language.

**SPA 225 Spanish for the Professional**

1-3 Credits

Prerequisite: Permission of instructor

This course, designed for professionals, covers specific job related vocabulary, expressions and grammar.

**SPA 231 Current Spanish—Spoken and Written I**

3 Credits

Prerequisite: SPA 112 or permission of instructor

This is a second-year course leading to more fluent and current usage of Spanish. Current Spanish publications are used.

**SPA 232 Current Spanish—Spoken and Written II**

3 Credits

Prerequisite: SPA 231 or permission of instructor

This course is a continuation of SPA 231 with more emphasis on fluency in speaking and current usage.

## Speech

# SPEECH

### **SPE 115 Principles of Speech Communication**

3 Credits

This course combines theory of speech communication with public speaking performance skills. It emphasizes speech delivery, preparation, organization, support and audience analysis.

### **SPE 125 Interpersonal Communication**

3 Credits

This course is designed to develop and/or enhance your communication skills and help you to use those skills to interact effectively in your family, social and professional relationships. Relevant concepts include an introduction to communication theory, self-concept, perception, language, nonverbal communication, self-disclosure and conflict management.

### **SPE 216 Advanced Public Speaking**

3 Credits

Prerequisite: SPE 115

This course is a continuation of SPE 115 with special emphasis on informative and persuasive public speaking skills and techniques using longer, in-depth speeches. Work in other speech formats may include extemporaneous, impromptu, manuscript, special occasion speeches and group decision-making.

### **SPE 217 Group Communication**

3 Credits

This course enables you to improve your ability to analyze, evaluate and impact group discussions, group processes, leadership responsibilities, group dynamics, group decision making and other elements of group communication.

### **SPE 220 Intercultural Communication**

3 Credits

This course explores the link between culture and communication and develops and/or enhances communication skills and abilities appropriate to a multicultural society. Emphasis is on understanding diversity within and across cultures. Relevant concepts include perception, worldview, context, ethics, language and nonverbal communication.

### **SPE 230 Argumentation and Debate**

3 Credits

Prerequisite: SPE 115 or permission of instructor

This course acquaints you with the theory of argumentation, including reasoning, evidence, refutation and critical thinking. It includes practice in preparation and oral analysis of selected arguments and styles of debating.

### **SPE 275 Intercollegiate Forensics**

1-3 Credits

Prerequisite: SPE 115 or permission of instructor

This course involves practice/experience in intercollegiate speech activities including participation in individual events, debates and designated weekend college speech tournaments. This course may be repeated up to six credit hours.

## THEATRE

### **THE 105 Introduction to the Theatre Arts (Core)**

3 Credits

This course includes discussions, workshops and lectures designed to discover, analyze and evaluate all aspects of the theatre experience including scripts, acting, directing, staging, history, criticism and theory.

### **THE 111 Acting I**

3 Credits

This course covers basic acting techniques and approaches including scene study, improvisation and script analysis. It includes practical application through classroom performance.

### **THE 112 Acting II**

3 Credits

Prerequisite: THE 111 or permission of instructor

This course continues to explore basic acting techniques and approaches, including scene study, improvisation and script analysis. It includes practical application through classroom performance.

### **THE 116 Technical Theatre**

3 Credits

This course introduces you to the technical aspects of theatre production through the study of set design and construction, costuming, makeup, stage lighting and sound.

### **THE 131 Theatre Production I**

3 Credits

Prerequisites: THE 111 and/or 112 or permission of instructor

This course allows students to put into practice theories of theatre production. Participation in set construction, costuming, lighting, sound, acting, stage managing and administration is available.

### **THE 132 Theatre Production II**

3 Credits

Prerequisites: THE 111 and/or 112 or permission of instructor

This course further explores the theories of theatre production. Participation in set construction, costuming, lighting, sound, acting, stage managing and administration is available.

### **THE 140 Stage Dialects**

1 Credit

This course develops your skills in nine dialects and accents.

### **THE 141 Improvisational Acting Workshop I**

1 Credit

This course explores the art of creating a scene without dependence on script or preconceptions (improvisation). Not to be confused with "ad-lib," this course utilizes the "Second City" style of improvisation.

### **THE 142 Improvisational Acting Workshop II**

1 Credit

Prerequisite: THE 141

This course is continuation of THE 141 with more difficult and complicated theatrical challenges.

### **THE 143 Basic Acting Techniques**

1 Credit

This course covers scene work and acting exercises for people with little or no training or experience in the theatre. The Stanislavski System of character analysis and development is stressed.

### **THE 144 Scene Study**

1 Credit

Prerequisite: THE 143

This course continues scene work in the Stanislavski System with material of a more demanding nature, such as classical and/or avant garde writers.

## **TRANSPORTATION AND LOGISTICS MANAGEMENT**

### **TLM 110 Introduction to Logistics** 3 Credits

Logistics and transportation are a \$1 trillion industry in the U.S. providing many high paying jobs. This course provides you with a broad and general exposure to business logistics, as well as an understanding of the basic concepts and techniques important to analyzing business logistics problems. It also addresses how various activities are important to logistics, how they are related and how they interact with each other.

### **TLM 205 Modes of Transportation** 3 Credits

This course provides you with a broad understanding of the various modes of transportation, their relationships and special uses. The course also examines the regulatory, competitive, technical and legal environment in which transportation operates. This course shows you how each form of transportation operates and gives you the foundation to recommend the type of transportation to businesses.

### **THE 145 Tryouts and Auditions** 1 Credit

Prerequisite: Permission of instructor

This course focuses on the selection and preparation of audition materials with an emphasis on modern and classical, serious and comic pieces. Cold readings and commercial copy techniques are presented; theatrical and media resumes are discussed.

### **THE 170 Dance and Stage Movement** 3 Credits

This course introduces you to the basic elements of modern dance and to the potential of dance and movement as a means of communication.

### **THE 205 Voice Practicum** 1 - 3 Credits

This course provides theatre, communication and international students with techniques to develop a clear, dynamic, articulated career speech suitable for all performance occasions. Topics include the International Phonetic Alphabet, optimum pitch, vocal dynamics and projection, charisma and kineses. Laboratory experiences include your performances in individual and group presentations.

### **THE 210 Singing for Actors** 3 Credits

This course allows you to explore and perform musical theatre songs. You utilize a pedagogical approach to evaluate your vocal and stucture and formulate a systematized series of vocal and whole body exercises to develop and enhance your self-confidence and coal instrument through in-class performances and a variety of show presentations.

### **THE 211 Development of Theatre I (Core)** 3 Credits

This course surveys the history and evolution of the theatre from Ancient Greece to the Renaissance, emphasizing all aspects of the art form from period values to analysis of dramatic literature and performance.

### **THE 212 Development of Theatre II (Core)** 3 Credits

This course surveys the history and evolution of drama from the Renaissance to the present, emphasizing all aspects of the art form from period values to the analysis of dramatic literature and performance.

### **THE 215 Playwriting** 3 Credits

This course gives you an opportunity to learn and practice play writing techniques, thereby improving creative writing skills. Elements of dramatic structure, dialogue, styles and theatrical practices are emphasized. This course is co-scheduled with ENG 215 and may be taken as THE 215 or ENG 215 but not both.

### **THE 231 Advanced Theatre Production Techniques I** 3 Credits

Prerequisites: THE 131, 132 or permission of instructor

This course provides those of you, who have completed THE 131 or 132, further practice in communication and organizational skills gained through the theatre production process.

### **THE 232 Advanced Theatre Production Techniques II** 3 Credits

Prerequisites: THE 131, 132 or permission of instructor

This course provides those of you, who have completed THE 131, 132 or 231, further practice in theatre production skills. Generally, you are given advanced creative projects such as set or costume design, directing, major acting roles or stage management.

### **THE 240 Voice and Diction** 3 Credits

This course provides you with individual tutorials which define, design and apply specific vocal techniques to abate singing and speech difficulties. Master class performances provide the opportunity to conjure the energy, charisma and stage command necessary for presentations.

### **THE 271 Dance for Musical Theatre** 3 Credits

This course introduces you to dance within the context of musical theatre. You gain an understanding of nonverbal communicative potential of stage movement both in theatre production and in life.



## Water Quality Management

# WATER QUALITY MANAGEMENT TECHNOLOGY

*(All courses are approved for CEUs.)*

### **WQM 100 Introduction to Water Quality Management**

3 Credits

This course introduces the water and wastewater treatment field and acquaints the prospective technicians with the various applied science concepts that are used to operate, maintain and monitor water quality. Topics include hydrological cycle, water sources, hydraulics, ecosystems, pollution, water chemistry, water calculations, microbiological aspects of water and water quality control.

### **WQM 104 Cross Connection Control**

2 Credits

This course introduces the principles of hydraulics, design, operation and minimum specifications of backflow prevention devices. In addition, you are taught cross-connection control law, rules and regulations, record keeping, application for specific devices, safety and device repair. This course may be used to prepare for the Colorado Certification Examination for Cross-Connection Control Technicians.

### **WQM 105 Specific Calculations for Water Quality Management**

4 Credits

This course provides you with an in-depth study of the calculations associated with water and wastewater treatment. Topics include dimensional analysis, manipulation of conversion factors, geometric figures, velocities, detention time, surface loading, filtration and backwash rates, porosity, weir over flow rates, efficiencies, weight of dry solids, sludge pumping, settleable solids, volatile solids, mean cell residence times, settleability, disinfection and chemical dosage as relating to trickling filters, ponds, RBC and activated sludge.

### **WQM 106 Mechanical-Physical Treatment**

3 Credits

This course serves as a basic introduction into wastewater treatment. Topics include the technician and their responsibility, effects of waste discharges, natural cycles, solids in wastewater, NPDES permits, collection systems, pretreatment, primary treatment, secondary treatment, advanced treatment, flow-measuring, solids handling and disposal.

### **WQM 107 Biological Treatment**

3 Credits

The course covers the major types of wastewater treatment processes-including trickling filters, rotating biological contactors, lagoons and activated sludge. Topics of each system include: design, operating guidelines, process control, testing procedures, maintenance and safety.

### **WQM 108 Sludge Treatment**

3 Credits

This course includes aerobic and anaerobic digestion; solids thickening using gravity, dissolved air, centrifuge, vacuum filters and drying beds; sludge stabilization by chemical means; sludge conditioning by chemical, thermal, wet oxidation or elutriation; volume reduction by composting or mechanical drying; sludge destruction by incineration; sludge storage; and land disposal with environmental controls. Topics include equipment, operational strategy, performance standards, loading and trouble-shooting.

### **WQM 109 Water Distribution**

3 Credits

This course covers the purpose, selection and location of water storage facilities and the operation and maintenance of related equipment. Topics include storage facilities and capabilities, booster pumps, water mains and appurtenances, joints, pipe protection and installation, valves, fittings and hydrants. Water quality standards, contaminants and degradation inspection and monitoring, system troubleshooting, surveillance, cross connections, pressure, main breaks, corrosion control, disinfection and emergency planning are also covered.

### **WQM 115 Water Sources and Supply**

3 Credits

This course provides an introduction into the water supply systems and sources of water. Topics include sources and selection of water, water quality problems, reservoir management, intake structures, well and introductory plant operations.

### **WQM 116 Water Pre-treatment**

3 Credits

This course covers coagulation, flocculation, sedimentation, filtering, corrosion and taste and odors. Topics for each process include descriptions, operating procedures, associated calculations, start-up and shut down procedures, laboratory tests, trouble-shooting, maintenance, safety and records.

### **WQM 117 Domestic Water Treatment Processes**

3 Credits

This course covers iron and manganese control, fluoridation and softening, trihalomethanes, demineralization and handling of process waste. Topics for each process include process descriptions, operating procedures, start up and shut down procedures, laboratory test, trouble-shooting, maintenance, safety and records.

### **WQM 118 Wastewater Collection Systems**

3 Credits

This course covers the purpose, components and design of collection systems. Topics include safety procedures, inspection and testing, pipeline cleaning and maintenance, underground repair, lift stations and sewer rehabilitation.

### **WQM 119 Basic Water Quality Analysis**

4 Credits

This course relates the results of laboratory control tests to the chemistry of water and wastewater treatment. You gain the skills and technics to operate within a laboratory. Topics include laboratory equipment and instrumentation-identification, set-up and calibration; safety, sample collection and preservation, written reports and laboratory tests. Laboratory testing includes harness, alkalinity, dissolved oxygen, biochemical oxygen demand, chlorine residual, pH, phosphorus, dissolved solids, total solids, suspended solids, turbidity, langier index, fluoride and biomonitoring.

### **WQM 120 Water Quality Equipment Maintenance**

4 Credits

This course provides an in-depth understanding of mechanical and electrical equipment maintenance. Topics include correct use of power and handtools, preventive and repair maintenance of pumps, motors, chlorinators, motor control units and other treatment plant equipment and safety procedures.

### **WQM 121 Environmental Sampling and Volume Measurement**

Variable

Prerequisite: College level reading, college level math

This course is designed to provide you with the knowledge and skills to collect contaminant samples for laboratory analysis, to select and prepare appropriate sample containers; to keep accurate sampling records; access sampling sites and do composite sampling. This course also provides sampling safety skills and sampling quality controls and assurance methods.

### **WQM 122 Basic Electricity for Water Quality Systems**

3 Credits

This course provides an understanding of electrical theory, various types of electrical equipment found in treatment facilities, operation, troubleshooting basic electrical problems and safety procedures.

### **WQM 125 Water-Wastewater Certification Review for Class C and D**

3 Credits

This course helps you prepare for the operators certification test in water/or wastewater at the C or D level. Topics include water and wastewater principles, mathematics, hydraulics, conventional treatment of water, wastewater sedimentation, water filtration, Colorado Primary Drinking Water Regulations, biological treatment of wastewater, effluent standard for wastewater, sludge handling and disposal, disinfection, pumps, safety and housekeeping and laboratory analysis.

### **WQM 126 Safety in the Water Quality Industry**

3 Credits

This course covers the safety aspects in the water and wastewater industry. Topics include development of safety policies and programs, job safety orientation, driving practices, CPR/first aid, confined spaces, safety with energy-electrical, mechanical, thermal and pressure, trenching, streetwork, laboratory, treatment equipment, construction vehicles/equipment and chlorine and other chemicals.

### **WQM 200 Hydraulics for Water Quality Management**

4 Credits

This course introduces the mathematical principles of density, specific gravity, pressures horsepower and energy costs, velocities, weirs, parshall flumes, venturimeters, California pipe method, flows from open-end pipes, surface loading rates, settling velocities and classification of flow.

### **WQM 206 Design Interpretations of Water Quality Systems**

4 Credits

This course provides an in-depth study and interpretation of blueprints, scale drawings, contour maps, profile drawings and symbols application to treatment facilities. It also includes basics in HVAC, lighting, construction techniques, building materials and energy conservation.

### **WQM 207 Operations and Control of Activated Sludge Systems**

4 Credits

The course provides a basic engineering overview of the activated sludge process and develops all process control activities around the biology of the treatment system. Topics include: settleometers, flows concentrations, oxygen uptake, turbidity, microscopic examination of organisms, trend charting, process control strategies. Classroom activities are reinforced by field trips to various treatment facilities.

### **WQM 208 Advanced Wastewater Treatment**

3 Credits

This course prepares you for the advanced stages of solids removal, nitrogen removal, solids removal, effluent disposal and wastewater reclamation. Topics include: design, troubleshooting, maintenance, start-up and shut-down, monitoring and interpretation of test results.

### **WQM 210 Advanced Water Quality Analysis**

4 Credits

Prerequisite: WQM 119

The course is a continuation of WQM 119. Advanced topics and laboratory tests to be covered include: ammonia, total Kjeldahl nitrogen, nitrate nitrogen, oil and grease, coagulation and flocculation, jar tests, sulfate, surfactants, taste and odor, specific conductance, metals, total organic carbon, biomonitoring, federal and state water regulations/standards, discharge monitoring reports and completion of DMRs and NPDES reports.

### **WQM 216 Biological and Bacteriological Water Quality Analysis**

4 Credits

Prerequisites: WQM 119, 210

This course studies microorganisms associated with all phases and concerns of water and wastewater treatment including bacteria, protozoa and algae. Topics include: microorganisms used in treatment, as indicators and the pathogens; regulations, health hazards and laboratory safety. Laboratory work involves media preparation, coliform testing, standard plate count, algae identification, activated sludge examination, volatile acids/alkalinity and biomonitoring.

### **WQM 217 Disinfection Techniques in Water Quality Systems**

4 Credits

This course provides an understanding of disinfection alternatives used in treatment systems such as chlorine, ozone, ultraviolet light and bromine chloride. Topics include chemistry, equipment/maintenance, start-up/shutdown procedures, hazards, safety and troubleshooting.

### **WQM 230 Industrial Monitoring and Treatment**

3 Credits

This course provides an understanding of industrial treatment. Various types of treatment systems are reviewed such as floatation, screening and microscreening, neutralization, coagulation and precipitation, adsorption, filtration, pure oxygen systems, chemical feed systems. Also included are safety, collection and preserving of samples, establishing an industrial monitoring program, operational strategies, interpretation of laboratory results, start-up/shutdown of systems, maintenance, plans and specification, various types of industrial wastes and troubleshooting.

## Welding Fabrication

# WELDING FABRICATION TECHNOLOGY

### **WFT 100 Oxy-Acetylene Safety, Cutting and Welding**

3 Credits

This course enables you to learn and use all shop safety rules and perform work in a safe manner and demonstrate an ability to perform oxy-acetylene welding and fuel gas burning.

### **WFT 107 Blueprint Reading and Estimating**

3 Credits

Prerequisite: MAT 056 is recommended

This course enables you to demonstrate the ability to read welding shop drawings, identify various welding symbols and estimate the cost of materials and labor.

### **WFT 108 S.M.A.W. Safety, Electrode Identification and Surface Padding**

3 Credits

This course applies safety rules applicable to S.M.A.W. power supplies, identify electrodes by A.W.S.—A.S.T.M. numbering system, and practice surface padding in designated positions.

### **WFT 110 S.M.A.W. Joints in Three Positions**

3 Credits

Prerequisite: Permission of instructor

This course demonstrates the ability to properly set up and weld the lap, tee, butt and corner joints in the 2G, 3G and 4G positions using specified electrodes.

### **WFT 115 Plate Code Testing E7018 with Backing Strip**

3 Credits

Prerequisite: Permission of instructor

In this course you demonstrate the ability to weld beveled test plates using a backing strip in the 2G, 3G and 4G positions with E7018, according to applicable welding standards.

### **WFT 116 Plate Code Testing E6010 Without Backing Strip**

3 Credits

Prerequisite: Permission of instructor

In this course you demonstrate the ability to weld beveled test plates without a backing strip in the 2G, 3G and 4G positions with E6010, according to applicable welding standards.

### **WFT 118 Special Applications in Arc Welding**

3 Credits

Prerequisite: WFT 115 or permission of instructor

In this course you demonstrate the operation of air-arc process, welding with stainless steel electrodes, welding cast iron and using various diameter electrodes.

### **WFT 200 Pipe Joint Design, Fabrication and Testing 2G**

3 Credits

Prerequisite: Permission of instructor

In this course you identify, fabricate and set up the standard open-butt designs; they demonstrate an ability to weld open-butt joint designs and weld beveled open-butt pipe joints in the 2G position using E6010/11 electrode in accordance with applicable standards.

### **WFT 202 Pipe Test A.S.M.E. Section IX, E6010 and E7018**

3 Credits

Prerequisite: WFT 200

In this course you prepare and weld pipe joints using E6010 and E7018 in all positions in accordance with A.S.M.E. Section IX.

### **WFT 207 G.T.A.W. Safety and Welding Joints**

3 Credits

Prerequisite: Permission of instructor

In this course you apply the process of fusion welding of low carbon steel joints (lap, tee, open butt), using the appropriate power supply and accessories. You also use silicon bronze filler material to weld low carbon steel joints. You use the G.T.A.W. process to weld the root pass on a beveled pipe joint and fill the remaining groove with E7018 electrode in the S.M.A.W. process in 2G, 5G and 6G position.

### **WFT 209 G.M.A.W.—Pipe and Plate Code Testing**

3 Credits

Prerequisite: Permission of instructor

In this course you identify various types of power supplies and accessories needed for the MIG welding process; employ the short-circuit method of welding on low carbon sheet steel, plate and pipe; demonstrate an ability to weld a test specimen on the 3G vertical down plate and the 5G pipe joint positions; and also demonstrate an ability to weld using the flux-core process.

### **WFT 210 Structural Shapes and Joints Design—Project Development**

3 Credits

Prerequisites: WFT 107, 108, 207

In this course you recognize and measure various structural shapes and joint designs and develop a shop drawing of a project (your choice or selected by the instructor).

### **WFT 235 Pipe Test A.S.M.E. Section IX, E6010 and E7018**

3 Credits

Prerequisites: WFT 200, 202

In this course you prepare and weld pipe in all positions using E6010 for root and E7018 for fill, according to A.S.M.E. Section IX.

### **WFT 236 Pipe Joint Design and Fabrication**

3 Credits

Prerequisites: WFT 200, 202 and 235

In this course you demonstrate an ability to lay out and fabricate pipe joints, including three-piece 90-degree turns, branch to header and reducers using E6010 electrode, according to appropriate standards.

# Directory

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## Adjunct Faculty

Over four hundred part-time faculty, who are recognized as being highly proficient in their profession or trade, teach each semester and make significant contributions to the delivery of instruction by providing special expertise in their fields.

As the instructional programs and course offerings change, the adjunct faculty also changes; it is not feasible to individually list them. The college would like to take this opportunity to recognize the outstanding contributions made by our adjunct faculty who provide timely, quality instruction to Red Rocks Community College students.



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