1998-1999 CATALOG

RED ROCKS COMMUNITY COLLEGE

Where Learning Is For Life

Red Rocks Community College

1998-99 Catalog

Copyright & Disclaimer Information

CollegeSource digital catalogs are derivative works owned and copyrighted by Career Guidance Foundation. Catalog content is owned and copyrighted by the appropriate school.

While the Career Guidance Foundation provides information as a service to the public, copyright is retained on all digital catalogs.

This means you may NOT:

- distribute the digital catalog files to others,
- "mirror" or include this material on an Internet (or Intranet) server, or
- modify or re-use digital files

without the express written consent of the Career Guidance Foundation and the appropriate school.

You may:

- print copies of the information for your own personal use,
- store the files on your own computer for personal use only, or
- reference this material from your own documents.

The Career Guidance Foundation reserves the right to revoke such authorization at any time, and any such use shall be discontinued immediately upon written notice from the Career Guidance Foundation.

Disclaimer

CollegeSource digital catalogs are converted from either the original printed catalog or electronic media supplied by each school. Although every attempt is made to ensure accurate conversion of data, the Career Guidance Foundation and the schools which provide the data do not guarantee that this information is accurate or correct. The information provided should be used only as reference and planning tools. Final decisions should be based and confirmed on data received directly from each school.

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.cccoes.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.cccoes.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
1-800-621-7440

Programs Approved By:

State Board for Community Colleges and Occupational Education &
Colorado Community Colleges and Occupational Education System
1391 North Speer Boulevard, Suite 600
Denver, CO 80204
(303) 620-4000

This catalog is effective beginning
Fall Semester 1998.

Welcome to Red Rocks

Dear Student:

At Red Rocks Community College, helping diverse people grow is our specialty. We serve more than 13,000 different students each year, each with different career goals, each with a different learning style, and each with individual demands that an educational experience must meet.

Some students come to us for the first two years of a four year college education. They know their core credits will transfer to any of the state's fine public institutions. They know they will transfer with a higher-than average GPA and that the quality of what they have learned here will stand them in good stead among their new classmates.

Students who want a first career come to us for experiential training in the fastest-growing industries around. They know that a Red Rocks credential is a respected passport to the world of work. They know that Red Rocks instructors practice what they teach. They know that Red Rocks' professional academies and programs, such as those in Film/Video, Graphic and Animation Technology, Fire Science and Health, have regional, national and international reputations. They know that they will start on average at nearly $30,000 per year when they graduate.

Students who already have undergraduate degrees or are working come to us for skill updates in their chosen fields. Weekend classes, on-line options, child care, and special business services like faxing and laptop hookups are just a few of the ways we help them juggle family demands and career advancement.

All Red Rocks students know that our personalized approach to advising, instruction and student services make the College a special place. So do our state-of-the-art facilities and beautiful natural surroundings. That's why we say that Red Rocks is unlike any place you've ever learned before. We think you'll agree.

Sincerely,

Dorothy A. Horrell, Ph.D.
President

Table of Contents

General Information

Looking for a career change, Jody started back to school at Red Rocks, because she liked the small class size as opposed to jumping into a university setting. She believes that when delving into a tough topic like chemistry, "the small size of the class helps, by giving you the personal attention you need to stay focused."

— Jody Anderson
Pharmacology student

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.

Lakewood Campus

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

Established in 1990, the Arvada Campus is known for its innovative schedule options and friendly atmosphere. Nine general-purpose classrooms, a computer classroom, the Learning Resource Center and a Campus Services office are located on campus. The Arvada Campus also makes use of other sites in the community such as Arvada High School. Services include registration, advising, assessment testing and basic skills, English and math tutoring, self-paced math, English, social science and computer labs and textbook sales.

Health Careers Center

The Health Careers Center was newly established in 1997, and houses the Health Careers programs, which include Medical Office, Medical Assisting, RN Refresher, Continuing Education for Nurses, Radiologic Technology, Physician Assistant, and Certified Nursing Assistant.

Mountain Center

The Mountain Center was established in 1990, to serve the rural mountain communities of Park, Clear Creek, Gilpin and West Jefferson counties. Located in the beautiful new Conifer High School, the Center offers a variety of classes, degrees and student services including registration, advising, assessment testing and financial aid information.

Lakewood Campus

13300 West Sixth Avenue
Lakewood, CO 80228-1255
Phone: (303) 914-6600
FAX: (303) 914-6666

Arvada Campus

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

&

Health Careers Center

4851 Independence, Suite 218
Wheat Ridge, CO 80033
Phone: (303) 940-9690
FAX: (303) 940-9967

Mountain Center

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

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 appropriate 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 Director of Enrollment Services. 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.

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

Career Planning and Workplace Experience

If you are planning for your first career, a mid-course 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 *(COCIS)*. Finally, Career Development specialists can help with referrals through consultation with faculty and community resources as well as other colleges and universities. Information: **(303) 914-6255** or **(303) 914-6258**

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 and submit a special "Underage Student Application" form, available in Admissions, with your assessment test scores.

2. You may also take Workplace Readiness *(BUS 114)* for college credit.

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

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**

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 prior to your last semester. 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 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 will be accepted as meeting degree or certificate requirements in an equivalent program.

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 & Applied Science
- •College of Liberal Arts and Sciences

University of Colorado Health Sciences Ctr.
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.

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

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* 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 from 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 Director of Enrollment Services.

Senior Citizens Tuition

In-state students over the age of 60 may be eligible for a one-half-tuition grant for credit-bearing courses. 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* 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 1998	May 1, 1998
Spring 1999	October 1, 1999
Summer 1999	March 1, 1999

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

Credits	Estimated Tuition*	Registration Fee	Student Fees**	Total
1	$ 56.00	$ 9.00	$ 7.30	$ 72.30
2	112.00	9.00	14.60	135.60
3	168.00	9.00	21.90	198.90
4	224.00	9.00	29.20	262.20
5	280.00	9.00	36.50	325.50
6	336.00	9.00	43.80	388.80
7	392.00	9.00	51.10	452.10
8	448.00	9.00	58.40	515.40
9	504.00	9.00	65.70	578.70
10	560.00	9.00	73.00	642.00
11	616.00	9.00	80.30	705.30
12	672.00	9.00	87.60	768.60

Tuition charge of $56.00 per credit hour over 12 credits.

Charges for partial credits:

0.5	28.00	9.00	3.65	40.65
1.33	74.48	9.00	9.71	93.19
2.67	149.52	9.00	19.49	178.01

Non-Resident

Credits	Estimated Tuition*	Registration Fee	Student Fees**	Total
1	$ 261.00	$ 9.00	$ 7.30	$277.30
2	522.00	9.00	14.60	545.60
3	783.00	9.00	21.90	813.90
4	1,044.00	9.00	29.20	1,082.20
5	1,305.00	9.00	36.50	1,350.50
6	1,566.00	9.00	43.80	1,618.80
7	1,827.00	9.00	51.10	1,887.10
8	2,088.00	9.00	58.40	2,155.40
9	2,349.00	9.00	65.70	2,423.70
10	2,610.00	9.00	73.00	2,692.00
11	2,871.00	9.00	80.30	2,960.30
12	3,132.00	9.00	87.60	3,228.60

Tuition charge of $261.00 per credit hour over 12 credits.

Charges for partial credits:

0.5	130.50	9.00	3.65	143.15
1.33	347.13	9.00	9.71	365.84
2.67	696.87	9.00	19.49	725.36

***Subject to change. At press time, the SBCCOE has not determined what the tuition rates will be for the Fall 1998 semester. The amounts presented here are estimates.*

****Student Fees of $7.30 per credit hour include: Student Activity Fee—$4.00, Student Center Bond—$2.50, Parking Fee—$0.80, Total=$7.30***

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 tutorials; 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 Center

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. 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. Tutoring and vocational assessment are also provided to students who are Applied Science majors.

Writing Center

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

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. Check out the Distance Learning home page on the Red Rocks Community College website *(rrcc.cccoes.edu)* for more information.

CD-ROM Courses

If you have some background in computer applications, consider Microsoft Office Suite self-paced CD-ROM course 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**

Colorado Community College Online

(CCC Online)

Red Rocks Community College and the other institutions in the Colorado Community College and Occupational Education System offer a fully-accredited Associate degree in Business over the Internet. Courses taken through CCC Online are transferred at the college of your choice within the system. You may choose Red Rocks as your "home college."

Courses are taken "anytime, anywhere" at your convenience. CCC Online offers regular communication with faculty and fellow students who may be anywhere in the world. At the same time, learn to use the Internet, chat rooms, forums and threaded discussions to enhance your learning experience.

If you have access to a 486 computer with a 14.4 modem and access to an online Internet Service Provider, you never have to come to a campus. You register, pay, order books, attend class and use library services on line. If you do not have access to a computer, you may come to the Learning and Resource Center *(LARC)* on the Red Rocks main campus for computer services.

This degree is designed for students who want a business degree and do ***not*** plan to transfer to a four-year college or university, although many of the courses in fact transfer. Please see an advisor or business department faculty member for specific details, checkout **www.ccconline.org** *or* call **(303) 914-6700.**

CCConline Required Courses*:

ACC	121	Principles of Accounting I
ACC	122	Principles of Accounting II
BUS	115	Introduction to Business
MAN	216	Small Business Management
BUS	158	Human Resource Management
BUS	216	Legal Environment of Business
BUS	217	Business Communications
BUS	226	Business Statistics
CIS	115	Introduction to Computers
CIS	118	Introduction to Microcomputer Applications
CIS	150	Introduction to Spread Sheets
ECO	201	Principles of Macroeconomics
ECO	202	Principles of Microeconomics
ENG	121	English Composition I
ENG	122	English Composition II
MAN	226	Principles of Management
MAR	111	Principles of Sales
MAR	216	Principles of Marketing
MAT	121	College Algebra
SPE	115	Principles of Speech Communication
	Total Required Credits	**61**

For further details regarding the CCC Online Business degree requirements, please refer to the CCC Online addendum to the College Catalog.

* *Most course descriptions are included in the Red Rocks Catalog under "Course Descriptions".*

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, 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. Courses COE 296 or COM 115 *(Job Search Process)* are required unless waived by the appropriate Instructional Vice President.

Information: **(303) 914-6258**

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.

Interactive Television *(ITV)*

Distance education technology brings two-way, interactive classes from Red Rocks Lakewood Campus to local sites in Bailey, Idaho Springs, Black Hawk and Golden. See, hear and talk with the instructor and students in other locations, using the latest information-age tools.

Information: **(303) 914-6705**

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**

M Authorized Macromedia Training Center

The Institute offers customized computer training taught by business professionals through Computer Training Solutions *2000*™. These are short, intensive classes which include internet programming; and multimedia, Office 95, 97, Windows 95 and authorized Macromedia applications. College credit is available.

Information: **(303) 215-1837**

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**

Rocky Mountain Education Center *(RMEC)*

The Rocky Mountain Education Center is located on the main campus of Red Rocks Community College and is comprised of the OSHA Training Institute, the Colorado Environmental Training Center and the Mine Safety and Health Training Center.

The OSHA Training Institute

The OSHA Training Institute was established in 1992. The Department of Labor selected Red Rocks in cooperation with Trinidad State Junior College as one of their first four satellite training centers. The OSHA Training Institute—RMEC has trained students from all 50 states, as well as Puerto Rico, Canada, Europe, Spain and Saudi Arabia.

Information: **(303) 914-6420**

The Colorado Environmental Training Center

The Colorado Environmental Training Center has been in existence for over ten years and has trained over 6,000 students prior to joining RMEC. The Colorado Environmental Center offers a diverse selection of courses including entry level, certification upgrades and renewals for supervisors and managers.

Information: **(303) 914-6325**

Mine Safety Training Center

The latest addition to the RMEC is the Mine Safety Training Center. RMEC received approval from the Mine Safety and Health Administration *(MSHA)* in January of 1997, to offer both underground and surface mining courses.

Information: **(303) 914-6420**

The Rocky Mountain Education Center continues its dedication to providing high quality, effective and affordable training to our students. We offer skilled trainers, a comfortable state-of-the-art facility and outstanding customer service.

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**

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 Campuses. You work with coordinated print materials including textbooks, supplementary readings, study guides etc. Faculty provide orientation, optional review and discussion sessions and individual attention on the Lakewood Campus or by phone. Exams are taken at any of our three campuses. Courses are open entry; you may register at any time and have 15 weeks to complete the course work. Information: **(303) 914-6700**

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 call **(303) 982-8603** or **(303) 914-6356** for registration information.

Weekend College™

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. *(The Business degree is meant for students who want a business degree and do **not** plan to transfer to a four-year college/ university, although many of these courses will transfer. Please see an advisor or business department faculty member for specific information.)*

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. 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**

International Education

As the world becomes more technologically, economically and politically interdependent, the term "community" has come to have increasing international relevance. Red Rocks Community College is committed to supporting its students' and community's interest in intercultural, global awareness that will enhance their knowledge of and participation in the world community. This goal is realized by sustaining foreign language studies, promoting efforts to internationalize curricula, assisting faculty and students who wish to teach or learn abroad, and encouraging international students to serve as campus resources for cultural understanding.

—Randy Russell
International Program Manager

Application/Admission

"International students" are those students admitted into the U.S. on a non-immigrant visa. Students holding an F-1 student visa must attend full-time; holders of other visas may attend part-time.

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

1. College Application for Admission.
2. A statement of financial resources sufficient for tuition and living expenses while in the U.S. *(Currently $13,950/year—based on tuition of $3,123/full-time for one semester. Subject to change without notice.)*
3. A certified English translation of an official high school, college or equivalent transcript.
4. Evidence of English language ability *(unless arriving to study English as a Second Language)*. Submit ***one*** of the following:
   - TOEFL score of 475;
   - Michigan English Language Test score of 75;
   - Graduation record from the top level of an approved intensive English program;
   - Transcript showing successful completion of the equivalent of ENG 121 from an approved college;
   - U.S. high school diploma with two years of attendance.

Provisional admission may be available for one semester without one of the above documents; students' eligibility for enrollment is determined by the College's assessment tests.

5. If transferring from a previous U.S. school, you must submit a copy of your most recent Form I-20 or IAP 66.
6. Proof of health insurance coverage from home country required. If not covered, you will automatically be billed for health insurance through the College.

After the admissions materials have been reviewed, we will issue the U.S. Immigration Form I-20. Applicants must then present the I-20 and original copies of financial support to the nearest U.S. consulate or embassy to obtain the F-1 visa.

Academic Advising Services

Our professional advising staff will assist you with educational planning, transfer guidance, understanding immigration regulations, housing and personal needs.

Application Deadlines

Though applications are considered at any time prior to the beginning of a term, students should observe the following deadlines to ensure the College enough time to assess and process all necessary documents.

Summer 1998	*April 15, 1998*
Fall 1998	*July 15, 1998*
Spring 1999	*December 1, 1998*

Assessment

Prior to registering for classes, students must take one of the College learning skills assessment tests *(ASSET or COMPASS)* and follow its placement recommendations.

Foreign Credential Transfer

College/university course credits earned at foreign schools are evaluated for transfer to Red Rocks. It is strongly recommended that you first have your foreign credits assessed by a U.S. credential evaluation service. Red Rocks provides a list of such services on request.

Housing/Family Homestay Assistance

American family homestay opportunities are often available to you in addition to a variety of local housing arrangements. You should request housing information when applying for admission.

International Student Orientation

All new international students at Red Rocks must attend the International Student Orientation. This program is scheduled the Friday before regular classes begin and helps you become familiar with our campus, academic assessment, student support services, registration, the U.S. education system and the local community. We will also provide practical information about housing, shopping, transportation, banking, social customs and other topics useful for life in the U.S.

International Intensive English Program

If you wish to study only English or continue with college-level courses after ESL studies, you may enter our Intensive English Program. The program offers full-time English instruction *(20-25 hours per week)* at beginning, intermediate, and advanced levels.

Red Rocks' Award-Winning Programs

Gaid Al-Atiq

Gaid Al-Atiq is one of six fire fighters from the Gubail, Saudi Arabian desalinization plants who studied advanced techniques with the Fire Science and Emergency Services Department at Red Rocks. The plant, one of 23 in the country, is the largest of its kind in the world. Because it supplies the capital city of Ryad with some 230 million gallons of water each day, it is essential that it be operated safely and reliably. Fire is a constant threat. The Saudi Government picked Red Rocks' award-winning program as a training strategy to help meet that threat.

Al-Atiq finished 65 credit hours in only three semesters at Red Rocks, combining daytime, evening and compressed classes to accomplish the feat.

Of his experience here, he says, "Red Rocks' training is excellent. The technical courses are exceptional . . . . Everyone at the college went out of their way to make me feel at home."

—Roberta Bhasin

More Information

For further information or to receive an application, contact the Office of International Education at:

Phone: (303) 914-6538
FAX: (303) 989-6919
E-mail: randy.russell@rrcc.cccoes.edu
Internet: www.rrcc.cccoes.edu
Mail: 13300 W. 6th Avenue
Lakewood,CO 80228-1255 USA

Student Resources

Our market is the internal market—the student standpoint. We are responsive to the needs, services and programs that are requested by our students, and the Fitness Center at Red Rocks, is just one aspect of that.

— Jim Jones
Director of Student Life

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, referral services, vacancy information and nanny care are available from Red Rocks' Family First Child Care Resource and Referral.

Information: **(303) 969-9500**

Fitness Education Center

To participate in a program that includes individual analysis and prescribed training for total fitness, register for PHE 100. The Fitness Center offers circuit training, a variety of aerobic equipment and a Ricochet court. Those participating in this course must go through a mandatory three-hour orientation. Upon completion of the orientation, you arrange your own hours of participation to meet the course requirements. Please also see the *"Physical Education"* course description section of this catalog for further details.

Information: **(303) 914-6375** or Conifer at **(303) 982-5233**

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, on-campus recruiting visits from business and industry are coordinated; job announcements and outlook surveys maintained; and resume preparation, counseling, interviewing workshops and other job search skills are provided. Details regarding the college's work-study program on campus are also available. 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**

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 *during business hours,* please call **(303) 914-6394** or **911** from a campus phone to reach a Campus Police officer**.** For an emergency *after hours* please call **851-1282** or **911** to be connected to a Campus Police cellular phone.

Student Center

The Lakewood Campus Student Center offers various activities including:

- bus passes
- community events and lectures
- computer game and locker rentals
- entertainment
- FAX and copy services
- leadership programs
- publications
- recreation
- resume typesetting services
- student clubs and student ID cards

Students who are taking courses at other Red Rocks locations are always welcome to visit the main campus and take full advantage of the student services and resources available. The Student Center includes a big screen TV room, pool tables, video games, vending machines; a Ricochet Court, the Mountainside Espresso Bar, The Den, The Mart and the Student Project Center.

Information: **(303) 914-6370** or **(303) 914-6248**

Student Leadership Association *(SLA)*

SLA is the representative leadership group of the student body association. These students represent your interest within the college's governance structure and decision-making processes as well as planning various activities. It is an excellent opportunity to develop your leadership, conflict resolution, and critical thinking skills that will assist you in your educational and professional future endeavors. To join, you must pay fees and maintain a 2.5 GPA.

Information: **(303) 914-6372**

Academic Standards

Searching for fulfillment—
19 percent of Red Rocks students already have baccalaureate degrees.

"It took courage to walk away from a $40,000 a year job.
I was on a quest to find something different . . . .
I needed a place to figure that out."
Red Rocks was that place.

— Jack Bayles
Physician's Assistant transfer student

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. Those 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)*.

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 *(Credit may not transfer)*
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 courses' 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.

AW Administrative Withdrawal. Your instructor has the option of giving this grade if you have completed less than two-thirds of the course work with a grade of C or better, or have not attended class.

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.

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 symbol is limited to specific courses designated by certain disciplines.

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 dead-line 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.

GPA Calculation Example:

Prefix	Grade/Points	AHRS	EHRS	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 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
GPA =	*Total QPTS* =	35 = **2.917**			
	Total QHRS	12			

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) O*nce 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.

EHRS *(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.

Academic Progress

If you receive a semester grade point average of less than 2.0 for 12 or more credits you must meet with an academic advisor. For information, call **(303) 914-6255**.

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 Student Records 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 Student Records at **(303) 914-6352.**

Petitioning for Waivers/ Program Substitutions

If due to extenuating circumstances, you wish to petition for a waiver and/or substitution of program requirements, you 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.

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 is used to calculate your cumulative grade point average. Information: **(303) 914-6352**

Honors Program

Recognizing that a grade point average is not the only measure of intellectual ability, the faculty at Red Rocks 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 your professional interests and abilities
- Cultivating personal and professional skills
- Exploring topics meaningful to your 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

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, please contact Dr. Marjorie Berman at **(303) 914-6259** or Dr. Dave Brown at (**303) 914-6378**.

Honors Recognition

President's List

4.0 GPA or higher for 12 or more credits each semester.

Vice Presidents' List

3.5 GPA or higher for 12 or more credits each semester.

Honors List

The Honors List is designed to recognize those of you who have achieved an outstanding level of academic success at Red Rocks. 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; 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.

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**

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.

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 avail-able for review in the Veteran Services office on campus.

Information: **(303) 914-6353**

Graduation Requirements

It was a challenge coming back to school,
but I knew that when I finished,
my life would drastically change for the better.
It's all worth it . . . my life has just begun.

Lisa Benjamin—
Electronic Digital/Computer
Technology graduate

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
Business
Economics
English & Literature
Foreign Languages:
- French
- German
- Spanish

History
Humanities
Philosophy
Political Science
Psychology
Sociology
Speech Communications
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
Biotechnology
Chemistry
Computer Science
Engineering *(preparatory)*
Geology
Mathematics
Nursing *(preparatory)*
Physics

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 Professions * *(formerly ECE)*
Emergency Medical Services * *(Approval pending)*
Multimedia Technology*
- Graphics and Animation Technology *
- Production and Design 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; 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 Warren Tech)*
Automotive Technology *
(*In cooperation with and at Warren Tech)*
Brewing Technology *
Business Programs:
- Accounting * with emphases in:
  - Accounting Paraprofessional
  - Accounting Technician
- Business Administration with emphases in:
  - Management and Supervision *
  - Real Estate *
- Business Technology with emphases in:
  - Administrative Assistant

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 *
  - Advanced Heating *
  - Refrigeration *
  - Residential Air Conditioning *
  - Residential Heating
- Building Maintenance Technician
- Carpentry *
- Construction Technology Technician *

(continued)

Construction Technology with emphases in *(continued)*:
- Electrical
  - Construction Electrician *
  - Maintenance Electrician *
- Fine Woodworking *
- Plumbing
- Solar Construction Technology *
  - Active
  - Passive
- Apprentice-Related Technology with emphases in:
  (In partnership with the CITC))
  - 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 *
Emergency Medical Services *
Engineering Graphics Technology with emphases in:
- Architectural *
- Mechanical *

Environmental & Safety Technology * with emphases in:
- Environmental Technology
- Field Engineering Technology
- Hazardous Materials Technology
- Occupational Safety
- Water Quality Management

Fire Science Technology with emphases in:
- Code/Ordinance *
- Emergency Medical Service/Paramedic *
- Fire Investigations *
- Fire Service Management *
- Hazardous Materials Technician *
- Officer Development *
- Wildland Management *

Medical Assisting *
Medical Office*
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
Radiologic Technology
Water Quality Management Technology
Welding Fabrication Technology *
(At the Rocky Mountain Manufacturing Academy, HEAT Center, Lowry)

**** Certificate is also available.***

Certificates

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

Aviation Technology *(At Jefferson County Airport)*
Basic Law Enforcement Training Academy
Brewing Technology:
- Brewing Quality Control
- Microbrewery Operations

Business:
- Accounting Clerk
- Bookkeeping Clerk
- Clerical Assistant
- Office Assistant
- Small Business Management

Computer Information Systems:
- LAN Administrator

Construction Technology:
- Basic Plumbing and Heating Maintenance
- Building Code
- Comprehensive Residential Heating
- Residential Construction Electrician
- Residential Forced Air Heating
- Residential HVAC
- Residential Hydronic Heating
- Residential Plumber
- Apprentice-Related:
  - Plumber
  - Skilled Laborer
- Post-Degree Specializations:
  - Advanced Construction Electrician
  - Advanced Maintenance Electrician
  - Master Craftsman in Fine Woodworking

Criminal Justice:
- Investigations
- Victim Assistance Administration

Early Childhood Professions:
- Center Director
- Group Leader

Electronic Digital/Computer Technology
- Colorado Network Engineering
- Colorado Windows Engineering

Film/Video Technology
- Film Production
- Video Production
- Video Post-Production
- Writing, Directing & Producing for Film/Video

Health Careers:
- Continuing Education in Health Careers
- Continuing Education Refresher Nursing
- Holistic Health
- Holistic Nursing
- Nurse Aide/Home Health Aide
- Physician Assistant

Park Ranger Technology
- Law Enforcement
- Outdoor Recreation
- Public Safety
- Resource Interpretation Concentration

Not all programs are available each session.

Associate of Arts (AA) Degree
1998-99 Student Evaluation Worksheet

Student_____ Emphasis in_____

Social Security #_____ Advisor_____ Date_____

Core Curriculum Requirements (34 - 40 Semester Credits)

Communication (9 Credit Hours)
Complete all three courses.

ENG	121	English Composition I—(3)	❑
ENG	122	English Composition II—(3)	❑
SPE	115	Principles of Speech Communication—(3)	❑

Arts and Humanities (9-13 Credit Hours)
Select three courses from two or three disciplines.

ART	110	Art Appreciation—(3)	❑
ART	111	Art History I—(3)	❑
ART	112	Art History II—(3)	❑
XXX	111+	Foreign Language I—(5)	❑
XXX	112+	Foreign Language II—(5)	❑
XXX	211+	Foreign Language III—(3)	❑
XXX	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 Theatre Arts I—(3)	❑
THE	211	Development of Theatre I—(3)	❑
THE	212	Development of Theatre II—(3)	❑

+ All foreign languages *(FRE, GER, SPA)* are considered a single discipline.

Mathematics (3-5 Credit Hours)
Select one course.

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)	❑

Social and Behavioral Sciences (9 Credit Hours)
Select three courses from two or three disciplines.

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)	❑

Science (4-5 Credit Hours)
Select one course.

AST	101	Astronomy I—(4)	❑
AST	102	Astronomy II—(4)	❑
BIO	105	Science of Biology—(4)	❑
BIO	111	General Biology I—(5)	❑
BIO	112	General Biology II—(5)	❑
CHE	101	Introduction to Chemistry I—(5)	❑
CHE	102	Introduction to Chemistry II—(5)	❑
CHE	111	General Chemistry I—(5)	❑
CHE	112	General Chemistry II—(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)	❑

Approved Electives (26 Semester Credits—See Next Page)

Course Prefix	&	Course Number	
_____			❑
_____			❑
_____			❑
_____			❑

Course Prefix	&	Course Number	
_____			❑
_____			❑
_____			❑
_____			❑

Total Credits (60 Credits Required)

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 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 of those 5 credits can be applied toward the Core requirement. Fewer electives would be required since the remaining 1 credit can be 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 program of study. *(Advisors can be seen in the Advising/Counseling office 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 of the receiving institution.

6. You must complete a minimum of 15 semester credits in your program area at Red Rocks.

7. You must file an Application for Graduation during the term in which you intend to graduate, according to the deadline published in the ***Class Planning Schedule*** for that term. *(Apply in Admissions or the Records office.)*

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 course allowed to count toward a degree. In individual cases, the limit will be determined by the program area. If you are taking special-topics courses, you should consult with your advisor 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. You are assured that if the curriculum changes, the college will make every effort to determine an equitable solution.

11. If you are applying for an additional degree at Red Rocks, you must complete an additional 15 credits at Red Rocks and the requirements for the 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 public four-year colleges/universities in Colorado. All courses will count toward the AA degree. However, ***transferability depends on the four-year institution***. Additional courses may be transferrable to one or more of the public four-year colleges or universities in Colorado. For specific information, please consult an advisor in the Advising/Counseling office.

Accounting	ACC	121 & 122
Anthropology	ANT	All courses
Art	ART	All courses
Astronomy	AST	All courses
Biology	BIO	All courses
Business	BUS	115, 216, 217 & 226
	(See AA degree, emphasis in Business)	
Chemistry	CHE	All courses
Computer Info. Systems	CIS	115, 116, 118, 160, 161, 165, 240, 241 260, 261, 265, 266 & 277
Computer Science	CSC	148, 160, 161, 230, 231, 240 & 241
Early Childhood Profession	ECP	101, 214, 215 & 227 *(formerly ECE)*
Economics	ECO	All courses except ECO 119
English	ENG	121, 122, 131, 221, 222, 227 & 232
Environmental Science	ENV	101
Foreign Language	FRE, GER, SPA	All courses except 101, 102 & SPA 225
Geography	GEO	All courses
Geology	GEY	All courses
History	HIS	All courses
Humanities	HUM	All courses
Literature	LIT	All courses
Management	MAN	226
Marketing	MAR	216
Mathematics	MAT	121, 122, 123, 124, 125, & 135 201, 202, 203, 255 & 265
Music	MUS	All courses
Nursing	NUR	200
Philosophy	PHI	All courses
Physical Education	PHE	All courses *(Maximum of 3 credits applies toward degree)*
Physics	PHY	All courses
Political Science	POS	All courses
Psychology	PSY	101, 102, 115, 205, 217, 226 227, 235, 238, 239, 249 & 250
Sociology	SOC	101, 102, 205, 215, 218, 226, 237 & 255
Speech	SPE	All courses
Theatre	THE	All courses

Associate of Science (AS) Degree

1998-99 Student Evaluation Worksheet

Student_____ Emphasis in_____

Social Security #_____ Advisor_____ Date_____

Core Curriculum Requirements (33 - 40 Semester Credits)

Communication (9 Credit Hours)

Complete all three courses.

ENG	121	English Composition I—(3)	❑
ENG	122	English Composition II—(3)	❑
SPE	115	Principles of Speech Communication—(3)	❑

Arts and Humanities (6-10 Credit Hours)

Select two courses from one or two disciplines.

ART	110	Art Appreciation—(3)	❑
ART	111	Art History I—(3)	❑
ART	112	Art History II—(3)	❑
XXX	111+	Foreign Language I—(5)	❑
XXX	112+	Foreign Language II—(5)	❑
XXX	211+	Foreign Language III—(3)	❑
XXX	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	211	Development of Theatre I—(3)	❑
THE	212	Development of Theatre II—(3)	❑

+ All foreign languages *(FRE, GER, SPA)* are considered a single discipline.

Mathematics (4-5 Credit Hours)

Select one course.

MAT	121	College Algebra—(4)	❑
MAT	125	Survey of Calculus—(4)	❑
MAT	201	Calculus I—(5)	❑
MAT	202	Calculus II—(5)	❑

Social and Behavioral Sciences (6 Credit Hours)

Select two courses from one or two disciplines.

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)	❑

Science (8-10 Credit Hours)

Select two courses.

AST	101	Astronomy I—(4)	❑
AST	102	Astronomy II—(4)	❑
BIO	111	General Biology I—(5)	❑
BIO	112	General Biology II—(5)	❑
CHE	111	General Chemistry I—(5)	❑
CHE	112	General Chemistry II—(5)	❑
GEY	111	Physical Geology—(4)	❑
GEY	121	Historical Geology—(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)	❑

Approved Electives (18 Semester Credits—See Next Page)

Only asterisk **(*)** electives *(AST, BIO, CHE, CSC, ENV, GEY, MAT and PHY)* apply toward the AS approved electives.

Course Prefix	&	Course Number	
_____		_____	❑
_____		_____	❑
_____		_____	❑

Course Prefix	&	Course Number	
_____		_____	❑
_____		_____	❑
_____		_____	❑

Electives (9 Semester Credits—See Next Page)

Course Prefix	&	Course Number	
_____		_____	❑
_____		_____	❑

Course Prefix	&	Course Number	
_____		_____	❑
_____		_____	❑

Total Credits (60 Credits Required)

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, 18 approved elective credits in the asterisked (*) 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.

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. Fewer electives would be required since the remaining 4 credits can be applied as elective credits.

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 program of study. *(Advisors can be seen in the Advising/Counseling office 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 of the receiving institution *(Advising/Counseling office)* .

6. You must complete a minimum of 15 semester credits in your program area at Red Rocks.

7. You must file an Application for Graduation during the term in which you intend to graduate, according to the deadline published in the ***Class Planning Schedule*** for that term. *(Apply in Admissions or the Records office.)*

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 course allowed to count toward a degree. In individual cases, the limit will be determined by the program area. If you are taking special-topics courses, you should consult with your advisor 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. You are assured that if the curriculum changes, the college will make every effort to determine an equitable solution.

11. If you are applying for an additional degree at Red Rocks, you must complete an additional 15 credits at Red Rocks and the requirements for the 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 public four-year colleges/universities in Colorado. All courses will count toward the AS degree. However, ***transferability depends on the four-year institution***. Additional courses may be transferrable to one or more of the public four-year colleges or universities in Colorado. For specific information, please consult an advisor in the Advising/Counseling office.

Accounting	ACC	121 & 122
Anthropology	ANT	All courses
Art	ART	All courses
Astronomy*	AST	All courses
Biology*	BIO	All courses
Business	BUS	115, 216, 217 & 226
	(See AA degree, emphasis in Business)	
Chemistry*	CHE	All courses
Computer Info. Systems	CIS	115, 116, 118, 160, 161, 165, 240, 241 260, 261, 265, 266 & 277
Computer Science*	CSC	148, 160, 161, 230, 231, 240 & 241
Early Childhood Profession	ECP	101, 214, 215 & 227 *(formerly ECE)*
Economics	ECO	All courses except ECO 119
English	ENG	121, 122, 131, 221, 222, 227 & 232
Environmental Science*	ENV	101
Foreign Language	FRE, GER, SPA—All courses except 101, 102 & SPA 225	
Geography	GEO	All courses
Geology*	GEY	All courses
History	HIS	All courses
Humanities	HUM	All courses
Literature	LIT	All courses
Management	MAN	226
Marketing	MAR	216
Mathematics*	MAT	121, 122, 123, 124, 125, & 135 201, 202, 203, 255 & 265
Music	MUS	All courses
Nursing	NUR	200
Philosophy	PHI	All courses
Physical Education	PHE	All courses *(Maximum of 3 credits applies toward degree)*
Physics*	PHY	All courses
Political Science	POS	All courses
Psychology	PSY	101, 102, 115, 205, 217, 226 227, 235, 238, 239, 249 & 250
Sociology	SOC	101, 102, 205, 215, 218, 226, 237& 255
Speech	SPE	All courses
Theatre	THE	All courses

Associate of General Studies (AGS-Generalist) Degree

1998-99 Student Evaluation Worksheet

Student_____ Emphasis in_____

Social Security #_____ Advisor_____ Date_____

General Education Requirements (28 Semester Credits)

Communication (6 Credit Hours)

ENG	121	English Composition I—(3)	❑
SPE	115	Principles of Speech Communication—(3)	❑
		or	
SPE	125	Interpersonal Communication—(3)	❑

Arts and Humanities (3 Credit Hours)

Select one course.

ART	110	Art Appreciation—(3)	❑
ART	____	Art History—(3)	❑
____	____	Foreign Language—(5)	❑
HUM	____	_____—( )	❑
LIT	____	_____—( )	❑
MTC	____	_____—( )	❑
MUS	____	Music Appreciation or History—(3)	❑
PHI	____	_____—( )	❑
THE	____	_____—( )	❑

Mathematics (3 Credit Hours)

(MAT 121 or above)

MAT	____	_____—( )	❑

Social and Behavioral Sciences (3 Credit Hours)

Select one course.

ANT	____	_____—( )	❑
ECO	____	_____—( )	❑
GEO	____	_____—( )	❑
HIS	____	_____—( )	❑
POS	____	_____—( )	❑
PSY	____	_____—( )	❑
SOC	____	_____—( )	❑

Science (3 Credit Hours)

Select one course.

AST	____	_____—( )	❑
BIO	____	_____—( )	❑
CHE	____	_____—( )	❑
GEY	____	_____—( )	❑
PHY	____	_____—( )	❑

College Level Electives—(10 Semester Credits)

Selected from any of the above categories. See an advisor.

Course Prefix	&	Course Number		Course Prefix	&	Course Number	
_____			❑	_____			❑
_____			❑	_____			❑

Professional Electives—(9 Semester Credits)

Selected from professional area courses generally recognized as transferable. See an advisor.

(e.g., college level BUS, MAN, MAR, or CSC courses and selected technical education, and/or others from General Education Core Requirements.)

Course Prefix	&	Course Number		Course Prefix	&	Course Number	
_____			❑	_____			❑
_____			❑	_____			❑

General Electives—(23 Semester Credits)

Selected from occupationally prefixed courses *(applied arts and sciences)* and/or general electives.
Electives must be courses numbered 121 and above in ENG and MAT, and 100 and above in all other areas.
You are limited to no more than 3 credits in PHE and no more than 3 credits in Cooperative Education/Internship courses numbered 297. See an advisor.

Course Prefix	&	Course Number		Course Prefix	&	Course Number	
_____			❑	_____			❑
_____			❑	_____			❑
_____			❑	_____			❑

Total Credits—(60 Required Credits)

Other (AGS-Generalist) Degree Requirements

The Associate of General Studies—Generalist degree is available for those who want to complete a broad program of both career and transfer courses. Various courses within this degree may be accepted in a four-year baccalaureate program; however, each course is considered on an individual basis. Information concerning transfer to Colorado universities or colleges is available in the Advising/Counseling office.

1. A minimum of 60 semester credits is required for the Associate of General Studies degree. Courses needed to satisfy objectives are to be developed in consultation with your counselor and faculty advisor.

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 program of study. *(Advisors can be seen in the Advising/Counseling office 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 of the receiving institution *(Advising/Counseling office)* .

5. You must complete a minimum of 15 semester credits in your program area at Red Rocks.

6. You must file an Application for Graduation during the term in which you intend to graduate, according to the deadline published in the ***Class Planning Schedule*** for that term. *(Apply in Admissions or the Records office.)*

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 course allowed to count toward a degree. In individual cases, the limit will be determined by the program area. If you are taking special-topics courses, you should consult with your advisor regarding how these credits will apply toward a degree.

9. The college reserves the right to substitute or delete course work based on the current curriculum. You are assured that if the curriculum changes, the college will make every effort to determine an equitable solution.

10. If you are applying for an additional degree at Red Rocks, you must complete an additional 15 credits at Red Rocks and the requirements for the degree.

11. With the approval of a faculty advisor and an Instructional Vice President, up to 3 credits of 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

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
ENH	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	Intro to Math: 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.***

Associate of General Studies (AGS-Specialist) Degree

1998-99 Student Evaluation Worksheet

Student_____ Emphasis in_____

Social Security #_____ Advisor_____ Date_____

Core Curriculum Requirements (34 - 40 Semester Credits)

Communication (9 Credit Hours)

Complete all three courses.

ENG	121	English Composition I—(3)	❑
ENG	122	English Composition II—(3)	❑
SPE	115	Principles of Speech Communication—(3)	❑

Arts and Humanities (9-13 Credit Hours)

Select three courses from two or three disciplines.

ART	110	Art Appreciation—(3)	❑
ART	111	Art History I—(3)	❑
ART	112	Art History II—(3)	❑
XXX	111+	Foreign Language I—(5)	❑
XXX	112+	Foreign Language II—(5)	❑
XXX	211+	Foreign Language III—(3)	❑
XXX	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	211	Development of Theatre I—(3)	❑
THE	212	Development of Theatre II—(3)	❑

+ All foreign languages *(FRE, GER, SPA)* are considered a single discipline.

Mathematics (3-5 Credit Hours)

Select one course.

MAT	121	College Algebra—(4)	❑
MAT	125	Survey of Calculus—(4)	❑
MAT	135	Introduction to Statistics—(3)	❑
MAT	201	Calculus I—(5)	❑

Social and Behavioral Sciences (9 Credit Hours)

Select three courses from two or three disciplines.

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)	❑

Science (4-5 Credit Hours)

Select one course.

AST	101	Astronomy I—(4)	❑
AST	102	Astronomy II—(4)	❑
BIO	105	Science of Biology—(4)	❑
BIO	111	General Biology I—(5)	❑
BIO	112	General Biology II—(5)	❑
CHE	101	Introduction to Chemistry I—(5)	❑
CHE	102	Introduction to Chemistry II—(5)	❑
CHE	111	General Chemistry I—(5)	❑
CHE	112	General Chemistry II—(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)	❑

Electives—Transfer and/or career courses (26 Semester Credits)

See next page for transfer courses. See an advisor for career course information.

Course Prefix		&	Course Number	
MAT	202	Calculus II—(5)		❑
PHY	212	Physics: Calculus-Based II—(5)		❑
_____				❑
_____				❑
_____				❑
_____				❑
_____				❑
_____				❑
_____				❑
_____				❑

Total Credits (60 Credits Required)

The AGS degree is available if you would like to complete a broad program of both transfer and/or career courses without the constraints of specialization. The AGS Core course requirements transfer to and fully meet the lower division general education requirements of all public baccalaureate colleges and universities in Colorado. Career courses within this degree may be accepted in a four-year baccalaureate program; however, each course will be considered on an individual basis.

Other (AGS-Specialist) Degree Requirements

1. A minimum of 60 semester credits is required for the Associate of General Studies degree. These must include 34 credits in Core transfer courses and 26 credits in the areas specified below in approved electives or career courses *(Please 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 of 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 of those 5 credits can be applied toward the Core requirement. Fewer electives would be required since the remaining 1 credit can be 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 program of study. *(Advisors can be seen in the Advising/Counseling office 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 of the receiving institution *(Advising/Counseling office)* .

6. You must complete a minimum of 15 semester credits in your program area at Red Rocks.

7. You must file an Application for Graduation during the term in which you intend to graduate, according to the deadline published in the ***Class Planning Schedule*** for that term. *(Apply in Admissions or the Records office.)*

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 course allowed to count toward a degree. In individual cases, the limit will be determined by the program area. If you are taking special-topics courses, you should consult with your advisor 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. You are assured that if the curriculum changes, the college will make every effort to determine an equitable solution.

11. If you are applying for an additional degree at Red Rocks, you must complete an additional 15 credits at Red Rocks and the requirements for the degree.

12. With the approval of a faculty advisor and an Instructional Vice President, up to 3 credits of 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 Degree

These courses transfer to one or more of the public four-year colleges/universities in Colorado. All courses will count toward the AGS degree. However, ***transferability depends on the four-year institution***. Additional courses may be transferrable to one or more of the public four-year colleges or universities in Colorado. For specific information, please consult an advisor in the Advising/Counseling office.

Accounting	ACC	121 & 122
Anthropology	ANT	All courses
Art	ART	All courses
Astronomy	AST	All courses
Biology	BIO	All courses
Business	BUS	115, 216, 217 & 226
	(See AA degree, emphasis in Business)	
Chemistry	CHE	All courses
Computer Info. Systems	CIS	115, 116, 118, 160, 161, 165, 240, 241 260, 261, 265, 266 & 277
Computer Science	CSC	148, 160, 161, 230, 231, 240 & 241
Early Childhood Profession	ECP	101, 214, 215 & 227 *(formerly ECE)*
Economics	ECO	All courses except ECO 119
English	ENG	121, 122, 131, 221, 222, 227 & 232
Environmental Science	ENV	101
Foreign Language	FRE, GER, SPA—All courses except 101, 102 & SPA 225	
Geography	GEO	All courses
Geology	GEY	All courses
History	HIS	All courses
Humanities	HUM	All courses
Literature	LIT	All courses
Management	MAN	226
Marketing	MAR	216
Mathematics	MAT	121, 122, 123, 124, 125, & 135 201, 202, 203, 255 & 265
Music	MUS	All courses
Nursing	NUR	200
Philosophy	PHI	All courses
Physical Education	PHE	All courses *(Maximum of 3 credits applies toward degree)*
Physics	PHY	All courses
Political Science	POS	All courses
Psychology	PSY	101, 102, 115, 205, 217, 226 227, 235, 238, 239, 249 & 250
Sociology	SOC	101, 102, 205, 215, 218, 226, 237& 255
Speech	SPE	All courses
Theatre	THE	All courses

Associate of Applied Science (AAS) Degree

1998-99 Student Evaluation Worksheet

Student_____ Emphasis in_____

Social Security #_____ Advisor_____ Date_____

The Associate of Applied Science degree prepares you for the following: 1) entry-level employment in a given occupation and/or 2) upgrading your current skills in a given area of emphasis for promotion or career advancement. This degree is not intended for transfer to a baccalaureate degree program; however, some of the courses may be applied toward a bachelor's degree at some institutions. Please contact an advisor in the Advising/Counseling office at Red Rocks for further information.

Degree Requirements

Specific Program Requirements

_____ ❑
_____ ❑
_____ ❑
_____ ❑
_____ ❑
_____ ❑
_____ ❑
_____ ❑
_____ ❑
_____ ❑
_____ ❑
_____ ❑
_____ ❑
_____ ❑
_____ ❑
_____ ❑
_____ ❑
_____ ❑
_____ ❑
_____ ❑
_____ ❑
_____ ❑

Total Specific Program Credits (45 required) _____

General Education Requirements

Communications (ENG,SPE) 3 Credits

_____ ❑
_____ ❑

Mathematics (MAT 100 and above) 3 Credits

_____ ❑
_____ ❑

Credit from any tow of the following three areas: 6 Credits

1) ***Arts and Humanities***
(ART, FRE, GER, HUM, LIT, MUS, PHI, SPE, THE)

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

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

Note: Individual departments may specify particular courses for these general education requirements.

_____ ❑
_____ ❑
_____ ❑
_____ ❑

Electives from any of the above subjects: 3 Credits

_____ ❑
_____ ❑
_____ ❑
_____ ❑

Total General Education Credits (15 required) _____

Total Credits (60 Credits Required)

Note: Most AAS degree programs require more than 60 credits. See catalog and/or an advisor in your specific program. Please mark all courses currently in progress which are required for graduation this semester.

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. *(Please 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 of 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 of 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 program of study. *(Advisors can be seen in the Advising/Counseling office 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 of the receiving institution *(Advising/Counseling office)*.

6. You must complete a minimum of 15 semester credits in your program area at Red Rocks.

7. You must file an Application for Graduation during the term in which you intend to graduate, according to the deadline published in the ***Class Planning Schedule*** for that term. *(Apply in Admissions or the Records office.)*

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 course allowed to count toward a degree. In individual cases, the limit will be determined by the program area. If you are taking special-topics courses, you should consult with your advisor 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. You are assured that if the curriculum changes, the college will make every effort to determine an equitable solution.

11. If you are applying for an additional degree at Red Rocks, you must complete an additional 15 credits at Red Rocks and the requirements for the degree.

12. With the approval of a faculty advisor and an Instructional Vice President, up to 3 credits of Cooperative Education may count toward a degree. *(Some A.A.S. degrees will require Cooperative Education credits.)*

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

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
ENH	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	Intro to Math: 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.**

Certificate

1998-99 Student Evaluation Worksheet

Student_____ Certificate Title_____

Social Security #_____ Advisor_____ Date_____

Proposed Term of Graduation_____ Catalog Used *(Year)*_____

Certificate Requirements

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

Please flag (*) all courses in progress which must be completed for graduation.

Specific Program Requirements		**Credits**
_____	❑	
_____	❑	
_____	❑	
_____	❑	
_____	❑	
_____	❑	
_____	❑	
_____	❑	
_____	❑	
_____	❑	
_____	❑	
_____	❑	
_____	❑	
_____	❑	
_____	❑	
_____	❑	
Total Specific Program Credits		_____

Substituted Courses*		**Credits**
_____	❑	
_____	❑	
_____	❑	
_____	❑	
_____	❑	
_____	❑	
Total Substituted Course Credits		_____

* *Use "Waiver or Substitution of Course for Program Requirements" form.*

Transferred Electives		**Credits**
_____	❑	
_____	❑	
_____	❑	
_____	❑	
_____	❑	
_____	❑	
Total Transferred Elective Credits		_____

Authorized Personnel

Comments:

_____

_____

_____

_____

Date Approved: _____ **Advisor's Signature:** _____

Director's Signature: _____

Instructional Programs

My chemistry professor is outstanding and academically rigorous. She's personable, helpful and doesn't laugh at your ideas.

She teaches so that you're prepared for the *real* world.

— John Allison
Pre-Med student

Accounting

Degree: Associate of Applied Science
Certificates: Accounting Clerk *(32 Credits)*
Bookkeeping Clerk *(16 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.

Area of Emphasis: Accounting Paraprofessional

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 *(Required Lab)*	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 *(Required Lab)*	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 *(Required Lab)*	5
			16 1/3

** Please see 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**

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. Please also see an accounting faculty advisor if you are planning to transfer.*

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

ACC	105*	Expanded Fundamentals of Accounting	5
ACC	136	Computerized Accounting *(Required Lab)*	4
ACC	138	Payroll and Sales Tax	3
ACC	190	Financial Investigations	3
ACC	212	Intermediate Accounting II	5
ACC	216	Governmental Accounting	3
ACC	227	Cost Accounting II	3
ACC	297	Cooperative Education *(maximum of 3 credits)*	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

** This course may be allowed as an elective if taken prior to ACC 121. Consult a faculty advisor.*

Area of Emphasis: Accounting Technician

Upon successful completion of this program you should be able to perform bookkeeping and general office duties in a small office or 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 *(Required Lab)*	4
ACC	137	Electronic Spreadsheets *(Required Lab)*	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 *(Required Lab)*	1 1/3
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 *(Required Lab)*	5
CIS	125	Word Processing *(Required Lab)*	4
			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**
Humanities (ART, FRE, GER, HUM, LIT, MUS, PHI, SPA, THE)	
Science (AST, BIO, CHE, GEY, PHY)	15-17
Total Required Credits *(minimum)*	**62 1/3-66 1/3**

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.

** Please see a faculty advisor.*

Certificate: Accounting Clerk *(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 *(Required Lab)*	4
ACC	137	Electronic Spreadsheets *(Required Lab)*	4
ACC	138	Payroll and Sales Tax	3
			16

Required Business-Related Courses			
BTE	100*	Touch Keyboarding *(Required Lab)*	3-4
		and	
BTE	108*	Ten Key by Touch *(Required Lab)*	
		or	
		Elective with approval of faculty advisor	
BTE	161	Filing and Records Management	2
BUS	115	Introduction to Business	3
CIS	118	Microcomputer Applications *(Required Lab)*	5
			13-14

Other Course Requirements			
SPE	125	Interpersonal Communications	3
			3
		Total Required Credits	**32-33**

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

**Please see a faculty advisor.*

Certificate: Bookkeeping Clerk *(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 *(Required Lab)*	3-4
		and	
BTE	108*	Ten Key by Touch *(Required Lab)*	
		or	
		Elective with approval of faculty advisor	
CIS	118	Microcomputer Applications *(Required Lab)*	5
		Total Required Credits	**16-17**

Art

Degree: Associate of Arts

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.

Recommended Courses			**Credits**
ART	111	Art History I *(Core)*	3
ART	112	Art History II *(Core)*	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)
MAT 121, 125, 135, 201, 202 3

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 Warren Tech)

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

Required Courses			Credits
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	3
			37
AMT	100	Safety	3
AMT	105	Blueprints/Diagrams/Schematics	3
AMT	106	Basic Electricity/Electronics	3
			9
ACT	200	Apprenticeship *(variable credit)*	
ACT	297	Cooperative Education *(variable credit)*	
ACT	299	Independent Study *(variable credit)*	

General Education Requirements

English/Speech (COM, ENG, SPE—*any course level*)	3
Mathematics (100 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, HIS, POS,PSY, SOC)	
Total Required Credits	**61**

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

Certificate: Non-Structural Analysis/ Damage Repair

			Credits
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 *(variable credit)*	
AMT	100	Safety	3
AMT	105	Blueprints/Diagrams/Schematics	3
AMT	106	Basic Electricity/Electronics	3
		Total Required Credits	**21-24**

Certificate: Mechanical/Electrical Components

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

Certificate: Structural Analysis/ Damage Repair

			Credits
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 *(variable credit)*	
AMT	100	Safety	3
AMT	105	Blueprints/Diagrams/Schematics	3
AMT	106	Basic Electricity/Electronics	3
		Total Required Credits	**21**

Certificate: Painting/Refinishing

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

Certificate: Plastics/Adhesives

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

Automotive Technology

(In cooperation with and held at Warren Tech)

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 15

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 *(At least 45 Credits)*

			Credits
AUM	101	Basic Mechanics/Safety	1

(Required course for all students new to the program)

NATEF Specialty Areas:

Brakes

AUM	102	Brakes I	2
AUM	103	Brakes II	3
		Total Required Credits	**5**

Suspension and Steering

AUM	104	Suspension I	2
AUM	105	Suspension II	3
AUM	106	Alignment I	3
AUM	107	Alignment II	1
		Total Required Credits	**9**

Heating and Air Conditioning

AUM	108	Heating and A/C	7
		Total Required Credits	**7**

Manual Drive Train and Axles

AUM	109	Manual Drive Train I	3
AUM	110	Manual Drive Train II	6
		Total Required Credits	**9**

Automatic Transmission/Transaxles

AUM	114	Auto Transmission I	3
AUM	115	Auto Transmission II	4
		Total Required Credits	**7**

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
		Total Required Credits	**14**

Electrical and Electronic Systems

AUM	127	Basic Electrical I	6
AUM	128	Advanced Electrical II	6
		Total Required Credits	**12**

Engine Repair

AUM	131	Basic Engines I	3
AUM	132	Engine Overhaul II	5
		Total Required Credits	**8**

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 is 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 Education Requirement	3
Mathematics General Education Requirement	3
	16
Second Session	
AUM XXX NATEF specialty area courses	12
Science, Humanities, or Social/Behavioral Science General Education Requirement	3
	15
Third Session	
AUM XXX NATEF specialty area courses	12
Science, Humanities, or Social/Behavioral Science General Education Requirement	3
	15
Fourth Session	
AUM XXX NATEF specialty area courses	11
Science, Humanities, or Social/Behavioral Science General Education Requirement	3
	14
Total Required Credits	**60-66**

Certificates: Automotive Technology

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

Degree: Associate of Science

The completion of the following courses is appropriate if you are 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 *(Core)*	5
BIO	112	General College Biology II *(Core)*	5
CHE	111	General College Chemistry I *(Core)*	5
CHE	112	General College Chemistry II *(Core)*	5
MAT	121	College Algebra *(Core)*	4
PHY	111	Physics: Algebra-based I *(Core)*	5
			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	4
			at least 10

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

Total Required Credits **60**

Biotechnology

Degree: Associate of Science

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

Recommended Courses			Credits
BIO	111	General College Biology I *(Core)*	5
BIO	201	Human Anatomy and Physiology I	4
BIO	203	Human Anatomy and Physiology II	4
BIO	205	Microbiology	4
CHE	111	General College Chemistry I *(Core)*	5
CHE	112	General College Chemistry II *(Core)*	5
MAT	121	College Algebra *(Core)*	4
BIO	211	Cellular Biology	4
BIO	212	Molecular Biology	4
			39

Core Curriculum Requirements

English/Speech

ENG	121	English Composition I	3
ENG	122	English Composition II	3
SPE	115	Principles of Speech Communication	3
			9

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 **3**
Electives must be selected from college-level transfer courses. See a faculty advisor for courses appropriate to the area of emphasis. No more than three credits in physical education may be counted.

Total Required Credits **63**

Brewing Technology

Degree: Associate of Applied Science

Certificates: Brewing Quality Control
Brewing Technology
Microbrewery Operations

Brewing Technology is an applied science, building on knowledge and skills achieved in biology, chemistry and physics. Graduates qualify to work for major breweries like Coors and Anheuser Busch, microbreweries and pubs as well as in home-brewing businesses. In Colorado, the industry needs 600 new, trained employees every year.

At Red Rocks, Brewing Technology also provides educational opportunities for home brewing enthusiasts, such as the Brewing Technology Overview *(BST 101)*, which may be taken independently of the degree and certificate programs.

The completion of the following courses is appropriate if you are 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.

Successfully completing the following course sequence will result in an AAS in Brewing Technology which qualifies you for a variety of jobs in the brewing industry. Work experience is also available through an internship of ninety hours, during which time you work on applying and improving your brewing knowledge and skills.

Required Courses			Credits
First Term			
BRS	101*	Brewing Technology Overview	4
MAT	121	College Algebra	4
BIO	111	General College Biology I	5
ENG	121	English Composition I	3
			16
Second Term			
BRS	201*	Brewing and Malting	4
BIO	205	Microbiology	4
CHE	101	Introduction to Chemistry I	5
PHY	105	Conceptual Physics	4
			17
Third Term			
BRS	202*	Brewing Fermentation to Packaging	4
CHE	102	Introduction to Chemistry II	5
Approved Electives			6
			15
Fourth Term			
BRS	240*	Brewing Laboratory Analysis	4
BRS	260*	Micro brewery Technology	4
BRS	297*	Brewery Internship	2
Approved Elective			3
			13
		Total Required Credits	**61**

** You must be 21 years of age or older to enroll in these Brewing Technology courses.*

Certificate: Brewing Technology

This certificate prepares you for entering all general brewing occupations.

Required Courses

BRS	101	Brewing Science Technology Overview	4
BRS	201	Brewing and Malting	4
BRS	202	Brewing, Fermentation to Packaging	4
BIO	111	General College Biology I	5
BIO	205	Microbiology	4
CHE	101	Introduction to Chemistry I	5
CHE	102	Introduction to Chemistry II	5
PHY	105	Conceptual Physics	4
MAT	121	College Algebra	4
		Total Required Credits	**39**

Certificate: Brewing Quality and Control

This certificate prepares you for quality control analysis and trouble-shooting in laboratory and supervisory brewing occupations.

Required Courses

Brewing Technology Certificate *(see requirements above)*			39
BRS	240	Brewing Laboratory Analysis	4
		Total Required Credits	**43**

Certificate: Microbrewery Operations

This certificate prepares you for quality control analysis and trouble-shooting in laboratory and supervisory brewing occupations.

Required Courses

Brewing Technology Certificate *(see requirements above)*			39
BRS	240	Brewing Laboratory Analysis	4
		Total Required Credits	**43**

Business

Degree: Associate of Arts

The study of business examines the strategies and functional activities that private enterprises undertake to achieve the profit motive. You can major in the following fields at the baccalaureate degree level: accounting, finance, information systems, management and marketing. Graduates in these disciplines go on to exciting and challenging professional careers in the business world.

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 Colorado Springs, University of Colorado at Boulder, University of Colorado at Denver, University of Southern Colorado and Western State College. Some four-year colleges/universities may require a comprehensive exam before accepting credits for certain business courses. Please see a faculty advisor or the Advising Office for more specific information.

Required Major Courses

ACC	121	Principles of Accounting I	4
ACC	122	Principles of Accounting II	4
BUS	115	Introduction to Business	3
BUS	216	Legal Environment of Business	4
BUS	217	Business Communications/Report Writing	3
BUS	226	Business Statistics	3
CIS	118	Microcomputer Applications *(Required Lab)*	5
MAN	226*	Principles of Management	3
MAR	216*	Principles of Marketing	3
			32

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 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

Mathematics

MAT	121*	College Algebra	4
		or	
MAT	124	Finite Mathematics	
MAT	125	Survey of Calculus	4

*Science** (any course from the following) 4-5
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

ECO	201	Principles of Macroeconomics	3
ECO	202	Principles of Microeconomics	3

*Any course from the following:** 3
ANT 101, 111; GEO 105; HIS 101, 102, 201, 202; POS 105, 111; PSY 101, 102, SOC 101, 102

Total Required Credits 71-72

** See faculty advisor.*

*** MAN 226 and MAR 216 are accepted at four-year institutions provided that the community college student completes the prerequisites (i.e., tACC 121, ACC 122, BUS 226 and ECO 201 or ECO 202) and has sophomore standing before enrolling in either MAN 226 or MAR 216.*

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. Certificates are also available in these areas and in Small Business Management:

- Management and Supervision
- Real Estate

> This AAS degree is meant for those who want a business degree and do not plan to transfer to a four-year college or university, although many of these courses will transfer.

Please also see ***CCC Online*** under the "Additional Learning Opportunities" section of this catalog for information regarding an AAS in Business Administration delivered entirely over the Internet.

Please contact your Business Administration faculty advisor Dr. Cheryl Johnson at **(303) 914-6444** or Dr. Kent Levine at **(303) 914-6453** 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 the Management and Supervision area 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.

Area of Emphasis: Management and Supervision

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
CIS	118	Microcomputer Applications *(Required Lab)*	5
			18
Spring			
MAN	116	Principles of Supervision	3
ACC	122	Principles of Accounting II	4
ECO	201	Principles of Macroeconomics	3
MAT	100	Introductory Algebra *(or higher)*	3
PHI	112	Ethics	3
			16
Fall			
MAN	117	Time Management *(Fall only)*	1
MAN	200	Human Resources Management *(Fall only)*	3
MAN	225	Managerial Finance	3
MAN	226**	Principles of Management	3
BUS	216	Legal Environment of Business	4
MAR	216**	Principles of Marketing	3
			17
Spring			
SBM	101	Starting a Small Business	1
SBM	102	Managing a Small Business	1
SBM	105	Financing a Small Business	1
BUS	217	Business Communications/Report Writing	3
MAN	212	Negotiation and Conflict Resolution	3
Business Related Elective *(see advisor for approval)*			3
		or	
		MAN 297 Cooperative Education	
General Education *(see advisor for approval)*			3
			15
		Total Required Credits	**66**

*** MAN 226 and MAR 216 are accepted at four-year institutions provided that the community college student completes the prerequisites (i.e., ACC 121, ACC 122, BUS 226 and ECO 201 or ECO 202) and has sophomore standing before enrolling in either MAN 226 or MAR 216.*

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 *(Required Lab)*	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	3
Business Related Electives *(see advisor for approval)*			
		or	
		MAN 297 Cooperative Education	3
			16
		Total Required Credits	**31**

Area of Emphasis: Real Estate

Required Courses

REE	100	Real Estate Broker's Course	11
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 *(Required Lab)*	5
Business Related Elective *(see advisor for approval)*			3
			45

General Education Course Requirements

English/Speech:			
ENG	121	English Composition I	3
Humanities:			
PHI	112	Ethics	3
Mathematics:			
MAT	100	Introductory Algebra *(or higher level)*	3
Social and Behavioral Sciences:			
ECO	201	Principles of Macroeconomics	3
General Education Elective *(See advisor for approval)*			3
			15
		Total Required Credits	**60**

Certificate: Real Estate

Required Course

REE	100	Real Estate Broker's Course	11
		Total Required Credits	**11**

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 *(Spring only)*	1
Business Related Electives *(see below)*			11

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

ACC	105	Expanded Fundamentals of Accounting	5
		or	
		ACC 121 Principles of Accounting I *(4 credits)*	
MAN	297	Cooperative Education	1
SBM	116	Sales Techniques for the Entrepreneur *(Fall only)*	1
SBM	118	Starting/Marketing a Professional Service *(Fall only)*	1
SBM	119	Purchasing/Pricing/Inventory Control *(Fall only)*	1
SBM	130	Busn. Writing Skills for Entrepreneur *(Spring only)*	1
SBM	215	Managing HR in a Small Business *(Fall only)*	1
SBM	290	Special Topics *(Spring only)*	1
		Total Required Credits	**18**

Business Technology

Degree: Associate of Applied Science

Certificates: Variable Credits

These program options 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 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 wam 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. 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

Fall			
BTE	102	Keyboarding Applications	4
BTE	125	Procedures for Workplace 2000	3
CIS	118	Microcomputer Applications	5
ENG	121	English Composition I	3
			15
Spring			
BTE	103	Keyboarding Skillbuilding I	4
BTE	135	Office Correspondence	3
BTE	161	Filing and Records Management	2
BTE	162	Electronic Filing	4
MAT	100	Introductory Algebra *(or higher)*	3
			16
Fall			
BTE	104	Keyboarding Skillbuilding II	4
BTE	126	Intermediate Office Procedures	4
CIS	125	Word Processing	4
CIS	155	Electronic Spreadsheets	4
General Education Course*			3
			19
Spring			
ACC	105	Expanded Fundamentals of Accounting	5
BTE	297	Cooperative Education/Internship	3
CIS	187	Introduction to the Internet	1.33
BTE	225	Advanced Office Procedures	4
General Education Courses*			6
			19.33

***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 **69.33**

Certificate: Clerical Assistant

Fall			
BTE	102	Keyboarding Applications	4
BTE	161	Filing and Records Management	2
CIS	118	Microcomputer Applications	5
ENG	114	Workplace Literacy	2
MAT	114	Workplace Literacy	2
			15
Spring			
BTE	135	Office Correspondence	3
BTE	297	Cooperative Education/Internship	3
BUS	110	Mathematics of Business/Personal Finance	3
Elective	XXX	CIS 125, CIS 155 or BTE 162	4
Elective		BTE 125 or BUS 100	2 or 3
			15 or 16
		Total Required Credits	**30 or 31**

Certificate: Office Assistant

Fall			
BTE	100	Beginning Keyboarding	4
BTE	125	Procedures for Workplace 2000	3
CIS	118	Microcomputer Applications	5
ENG	114	Career Skills: English	2
MAT	114	Career Skills: Math	2
			16
Spring			
BTE	102	Keyboarding Applications	4
BTE	135	Office Correspondence	3
BTE	161	Filing and Records Management	2
CIS	125	Word Processing	4
CIS	155	Electronic Spreadsheets	4
CIS	187	Introduction to the Internet	1.33
			18.33
Fall			
BTE	103	Keyboarding Skillbuilding I	4
BTE	126	Intermediate Office Procedures	4
BTE	162	Electronic Filing	4
BTE	297	Cooperative Education/Internship	3
			15
		Total Required Credits	**49.33**

Carpentry

(See Construction Technology)

Chemistry

Degree: Associate of Science

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) 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) 6
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 six areas of emphasis: Internet/Web Development, Microcomputer Applications Specialist, Microcomputer Programming Specialist, Multimedia Software Developer, Network 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**

Area of Emphasis: Microcomputer Applications Specialist

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

			Credits
CIS	118	Microcomputer Applications *(Required Lab)* See Course Description section for alternative courses.	5
CIS	141	Intermediate Microcomputer Database *(Required Lab)*	1 1/3
CIS	142	Advanced Microcomputer Database (*Required Lab)*	1 1/3
CIS	151	Intermediate Electronic Spreadsheets *(Required Lab)*	1 1/3
CIS	152	Advanced Electronic Spreadsheets *(Required Lab)* **or equivalent** (CIS 145, CIS 155)	1 1/3
CIS	111	Advanced Microcomputer Operating System *(Required Lab)*	1 1/3
CIS	250	Local Area Networks (LAN)	2
CIS/CSC		One Programming Language (preferably C) *(Required Lab)*	4
CIS	137	Desktop Publishing (*Required Lab)*	4
CIS/CSC		Electives with advisor approval	6
		Credits for Microcomputer Applications Specialist Area of Emphasis	**27 2/3**
		Total Required Credits *(minimum)*	**67 2/3**

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 *(Required Lab)* See Course Description section for alternative courses.	5
CIS	141	Intermediate Microcomputer Database *(Required Lab)*	1 1/3
CIS	142	Advanced Microcomputer Database *(Required Lab)* See advisor for equivalent or alternative courses.	1 1/3
CSC	230	C Language Programming *(Required Lab)*	4
CSC	231	Advanced C Language Programming *(Required Lab)*	4
CIS/CSC		Second Programming Language *(Required Lab)*	4
CIS/CSC		Electives with advisor approval	6
		Credits for Microcomputer Programming Specialist Area of Emphasis	**25 2/3**
		Total Required Credits *(minimum)*	**65 2/3**

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 (*Director)*	4
CIS	182	Multimedia Software Authorship *(Authorware)*	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	
Electives			**12**

See an advisor for suggested electives.

Credits for Multimedia Developer Area of Emphasis	**28 1/3**
Total Required Credits *(minimum)*	**69 1/3**

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
		and	
CIS	111	Advanced Microcomputer Operating Systems	1 1/3
		or	
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	2
		and	
CIS	251	Local Area Network Administration	4
		or	
CIS	260	NOVELL Certified Network Engineering—Part I	7
Electives			**4-6**

Suggested electives with CIS/EDT advisor approval:
CIS 252, 253, 254, 176; EDT 260, 270, 280 and 285.

Credits for Network Administrator Area of Emphasis	**30 2/3**
Total Required Credits *(minimum)*	**70 2/3**

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 *(Required Lab)*	4
		or	
CIS	175	UNIX *(Required Lab)*	4
CIS	297	Cooperative Education	3-5
		or	
ACC	122*	Principles of Accounting II	3-5
CIS/CSC		In one programming language sequence *(Required Lab)*	8
CIS/CSC		Electives above CIS 155 with approval of advisor	9
		Labs may be required	3
		Credits for Programming Area of Emphasis	**27-29**
		Total Required Credits *(minimum)*	**67**

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

Certificate: Internet/Web Development

			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**	
		Total Required Credits *(minimum)*	**30-38 1/3**

Certificate: LAN Administrator

This program is designed to prepare tyou 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 (*Required Lab)*	1 1/3
CIS	111	Advanced Microcomputer Operating Systems *(Required Lab)*	1 1/3
CIS	115	Introduction to Computers *(Required Lab)*	5
CIS	125	Word Processing *(Required Lab)*	4
CIS	145	Microcomputer Databases *(Required Lab)*	4
CIS	150	Introduction to Electronic Spreadsheets *(Required Lab)*	2 2/3
CIS	151	Intermediate Electronic Spreadsheets *(Required Lab)*	1 1/3
CIS	250	Local Area Networks	2
CIS	251	Local Area Network Administration *(Required Lab)*	4
CIS	252	Multi-Vender Networking	3
CIS	253	LAN Service and Support *(Required Lab)*	4
CIS	275	Telecommunications	3
		Total Required Credits	**35 2/3**

Certificate: Microcomputer Specialist

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

Certificate: Multimedia Software Specialist

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	5
		or	
CIS	118	Microcomputer Applications	5
CIS	180	Introduction to Multimedia	3
CIS	181	Multimedia Software Interactive Development *(Director)*	4
CIS	182	Multimedia Software Authorship *(Authorware)*	4
Electives *(CIS electives must be above 155)*			**16**
		Total Required Credits *(minimum)*	**32**

Certificate: Programming

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 *(Required Lab)*	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
		Total Required Credits *(minimum)*	**31-33**

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

Computer Science

Degree: Associate of Science

The completion of the following courses is for those 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.

Recommended Courses			**Credits**
CSC	160	Computer Science I (*Required Lab)*	5
CSC	161	Computer Science II *(Required Lab)*	5
CSC	165	Discrete Structures	4
MAT	201	Calculus I (Core)	5
MAT	202	Calculus II (Core)	5
PHY	211	Physics: Calculus-based I* *(Core)*	5
PHY	212	Physics: Calculus-based II* *(Core)*	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 your computer science faculty advisor.	40

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	**3**
Electives must be selected from college-level transfer courses. No more than 3 credits in PHE may be counted.	
Total Required Credits	**64**

Construction Technology

Degree: Associate of Applied Science With Areas of Emphasis and Options in:

Air Conditioning, Heating & Refrigeration *(AHR)*

Degree
- Air Conditioning, Heating & Refrigeration
- Advanced Heating
- Refrigeration
- Residential Air Conditioning
- Residential Heating

Certificate
- Advanced Heating Comprehensive Residential Heating
- Refrigeration Residential Air Conditioning
- Residential Forced Air Heating
- Residential HVAC
- Residential Hydronic Heating

Carpentry *(CAR)*

Degree
- Carpentry

Certificate
- Carpentry

Construction Technology *(CON)*

Degree
- Building Maintenance Technician
- Construction Technology Technician

Certificate
- Construction Technology Technician

Electrical *(EIC)*

Degree
- Construction Electrician
- Maintenance Electrician

Certificate
- Construction
- Maintenance
- Residential Construction
- Post Degree Specializations: Advanced Construction Advanced Maintenance

Facility Maintenance *(FMS)*

Certificate
- Facility Maintenance I

Fine Woodworking *(FIW)*

Degree
- Fine Woodworking

Certificate
- Fine Woodworking
- Post Degree Specialization: Master Craftsman

Plumbing *(PLU)*

Degree
- Plumbing

Certificate
- Residential Plumber

Solar Construction Technology *(ENT)*

Degree
- Active
- Passive

Certificate
- Solar Construction Technology

Apprentice-Related Technology

(In conjunction with the Construction Industry Training Council*)

Degree *(60 Credits)*
- Carpentry
- Drywall Applicator
- Electrical
- Ironworker
- Masonry
- Plumbing
- Sheetmetal

Certificate *(16-40 Credits)*
- Carpentry *(ARC)*
- Drywall Applicator *(ARD)*
- Electrical *(ARE)*
- Ironworker *(ARI)*
- Masonry *(ARM)*
- Plumbing *(ARP)*
- Sheetmetal Worker *(ARS)*
- Skilled Laborer *(ARL)*

**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

English/Speech (COM, ENG, SPE)	3
Mathematics (MAT 115)	3
Credit from **any 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)	
General Education Electives	3
	15

Construction Technology Requirements

CON	100	Computers for Construction	2
CON	105	Blueprint Reading	3
CON	151	Construction Process	4
			9

Required Major Courses **36**

See individual areas of emphasis for specific requirements

Total Required Credits *(Minimum)* **60**

Degrees: Associate of Applied Science *(All Emphases)*
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.

Degree: Associate of Applied Science Building Maintenance Technician

General Education Requirements	15
Construction Technology Requirements	9
	24
Required Major Courses	36

You must complete a total of **36** credits including one course from the areas listed *(at right)*. 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 **60**

Certificate: Building Maintenance Technician

Construction Technology Requirements	9
Required Major Courses	36

You must complete a total of **36** credits including one course from the areas listed *(at right)*. 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 **45**

Degree: Associate of Applied Science Construction Technology Technician

General Education Requirements	15
Construction Technology Requirements	9
	24
Required Major Courses	36

You must complete a total of **36** credits in a variety of areas. Meet with your Construction Technology Advisor to design an educational plan.

Total Required Credits **60**

Certificate: Construction Technology Technician

Construction Technology Requirements	9
Required Major Courses	21

Construction Technology requirements and electives must be approved by your Construction Technology advisor.

Total Required Credits **30**

Air Conditioning, Heating, Refrigeration & 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/Power, Portable /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/Installation of Plumbing Fixtures	3
PLU	116	Plumbing Repair	3
PLU	206	Hot Water Heating Systems	4
PLU	207	Basic Solar Energy	3

Certificate: Building Code

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	(4)
		Total Required Credits	**8**

Certificate: Facility Maintenance I

FMS	100	Basic Power and Hand Tools	3
FMS	102	Facilities Maintenance Job Skills I	1
FMS	105	Building Systems I	4
FMS	108	Building Systems II	4
EIC	180	Electrical Maintenance Techniques	4
CON	105	Blueprint Reading	3
MAN	117	Time Management	1
PLU	116	Plumbing Repair	4
		Total Required Credits	**24**

Certificate: Basic Plumbing/ Heating Maintenance

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	206	Hot Water Heating Systems	4
		Total Required Credits	**21**

Air Conditioning, Heating, and Refrigeration *(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.

Associate of Applied Science: Air Conditioning, Heating/Refrigeration

			Credits
General Education Requirements			15
Construction Technology Requirements			9
			24

Required Major Courses

First Session

AHR	103	Fundamentals of Gas Heating	4
AHR	105	Electricity for HVAC/R	4
AHR	110	Refrigeration Fundamentals	4
MAT	115	Technical Math	3
			15

Second Session

AHR	132	Refrigeration and Air Conditioning Controls	4
AHR	122	Air Conditioning Systems	4
AHR	125	Refrigerant Recovery Certification Training	1
AHR	278	Advanced Refrigeration Lab	2
English Credit			3
			14

Third Session

AHR	162	Heating Controls	4
AHR	142	Servicing Residential Forced Air Systems	4
AHR	206	Hot Water Heating Systems	4
Science or Humanities or Social Science Course			3
			15

Fourth Session

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			3
			16
		Total Required Credits	**60**

Associate of Applied Science: Advanced Heating

			Credits
General Education Requirements			15
Construction Technology Requirements			9
			24

Required Major Courses

First Session

AHR	103	Fundamentals of Gas Heating	4
AHR	105	Electricity for HVAC/R	4
MAT	115	Technical Math	3
English Credit			3
			14

Second Session

AHR	142	Servicing Residential Forced Air Systems	4
AHR	162	Heating Controls	4
AHR	299	Independent Study	2
CON	100	Computers for Construction	3
Science or Humanities or Social Science Course			3
			16

Third Session

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			3
			14

Fourth Session

AHR	202	Pneumatic Controls	4
AHR	216	Uniform Mechanical Code	4
AHR	240	Advanced Heating Systems	4
CON	151	Construction Process	4
			16
		Total Required Credits	**60**

Associate of Applied Science: Refrigeration

	Credits
General Education Requirements	15
Construction Technology Requirements	9
	24

Required Major Courses

First Session

AHR	105	Electricity for HVAC/R	4
AHR	110	Refrigeration Fundamentals	4
MAT	115	Technical Math	3
English Credit			3
			14

Second Session

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	3
			14

Third Session

AHR	202	Pneumatic Controls	4
AHR	217	Refrigeration Operator	4
AHR	278	Advanced Refrigeration Lab	3
CON	105	Blueprint Reading	3
Science or Humanities or Social Science Course			3
			17

Fourth Session

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			3
			15
		Total Required Credits	**60**

Associcate of Applied Science: Residential Air Conditioning

	Credits
General Education Requirements	15
Construction Technology Requirements	9
	24

Required Major Courses

First Session

AHR	105	Electricity for HVAC/R	4
PLU	105	Piping Skills	4
MAT	115	Technical Math	3
English Credit			3
			14

Second Session

AHR	110	Refrigeration Fundamentals	4
AHR	122	Air Conditioning Systems	4
AHR	125	Refrigerant Recovery Certification Training	1
AHR	132	Air Conditioning/Refrigeration Controls	4
Science or Humanities or Social Science Elective			3
			16

(continued)

Third Session

AHR	140	Residential Sheet Metal	4
AHR	190	Air Conditining Systems Service and Repair	4
CON	100	Computers for Construction	4
CON	105	Blueprint Reading	3
			15

Fourth Session

AHR	216	Uniform Mechanical Code	4
AHR	260	Estimating Residential HVAC Systems	4
CON	151	Construction Process	4
Science or Humanities or Social Science Elective			3
			15
		Total Required Credits	**61**

Associate of Applied Science: Residential Heating

	Credits
General Education Requirements	15
Construction Technology Requirements	9
	24

Required Major Courses

First Session

AHR	103	Fundamentals of Gas Heating	4
AHR	104	Sizing: Heating, Venting/Combustion Air Systems	4
MAT	115	Technical Math	3
English Credit			3
			14

Second Session

AHR	105	Electricity for HVAC/R	4
PLU	105	Piping Skills	4
AHR	140	Residential Sheet Metal	4
Science or Humanities or Social Science Course			3
			15

Third Session

AHR	145	Sizing Residential Forced Air Systems	4
AHR	162	Heating Controls	4
CON	105	Blueprint Reading	3
CON	100	Computers for Construction	3
			14

Fourth Session

AHR	206	Hot Water Heating Systems	4
AHR	216	Uniform Mechanical Code	4
AHR	XXX	Elective *(AHR 142, 151, 208 or 260)*	4
CON	151	Construction Process	4
Science or Humanities or Social Science Course			3
			19
		Total Required Credits	**64**

Certificate: Advanced Heating

Required Major Courses			Credits
AHR	102	Heating Fundamentals	4
AHR	105	Electricity for HVAC/R	4
AHR	141	Residential Forced Air Heating	4
AHR	151	Low Pressure Steam Heat	4
AHR	162	Heating Controls	4
AHR	200	HVAC/R Controls II	4
AHR	206	Hot Water Heating Systems	4
AHR	216	Uniform Mechanical Code	4
AHR	240	Commercial Heating Systems	4
AHR	299	Independent Study	4
		Total Required Credits	**40**

Certificate: Comprehensive Residential Heating

Required Major Courses			Credits
AHR	103	Fundamentals of Gas Heating	4
AHR	104	Sizing: Heating, Venting and Combustion Air	4
AHR	105	Electricity for HVAC/R	4
PLU	105	Piping Skills	4
AHR	140	Residential Sheet Metal	4
AHR	142	Servicing Residential Forced Air Systems	4
AHR	145	Sizing Residential Forced Air Systems	4
AHR	151	Low Pressure Steam Heating	4
AHR	162	Heating Controls	4
AHR	206	Hot Water Heating Systems	4
AHR	208	Radiant Heating Systems	4
AHR	216	Uniform Mechanical Code	4
CON	100	Computers for Construction	2
CON	105	Construction Blueprint Reading	3
CON	151	Construction Process	4
AHR	260	Estimating Residential HVAC Systems	4
		Total Required Credits	**61**

Certificate: Refrigeration

Required Major Courses			Credits
AHR	105	Electricity for HVAC/R	4
AHR	110	Refrigeration Fundamentals	4
AHR	125	Refrigerant Recovery Certificate	1
AHR	132	HVAC/R Controls I	4
AHR	201	Advanced Refrigeration	6
AHR	217	Refrigeration Operator Code	4
AHR	299	Independent Study	4
		Total Required Credits	**27**

Certificate: Residential Air Conditioning

Required Major Courses			Credits
AHR	105	Electricity for HVAC/R	4
PLU	105	Piping Skills	4
AHR	110	Refrigeration Fundamentals	4
AHR	122	Air Conditioning Systems	6
AHR	125	Refrigerant Recovery Certificate	1
AHR	132	Air Conditioning and Refrigeration Controls	4
AHR	140	Residential Sheet Metal	4
AHR	190	Air Conditioning Systems Service and Repair*	4
AHR	216	Uniform Mechanical Code	4
			12
		Total Required Credits	**33**

**This course is under development.*

Certificate: Residential Forced Air Heating

Required Major Courses			Credits
AHR	103	Fundamentals of Gas Heating	4
AHR	104	Sizing: Heating, Venting/Combustion Air Systems	4
AHR	105	Electricity for HVAC/R	4
AHR	140	Residential Sheet Metal	4
AHR	142	Servicing Residential Forced Air Systems	4
AHR	145	Sizing Residential Forced Air Systems	4
AHR	162	Heating Controls	4
AHR	216	Uniform Mechanical Code	4
			12
		Total Required Credits	**32**

Certificate: Residential HVAC

Required Major Courses			Credits
AHR	103	Fundamentals of Gas Heating	4
AHR	104	Sizing: Heating, Venting/Combustion Air Systems	4
AHR	105	Electricity for HVAC/R	4
PLU	105	Piping Skills	4
AHR	110	Refrigeration Fundamentals	4
AHR	122	Air Conditioning Systems	4
AHR	125	Refrigeration Recovery Certification Training	1
AHR	132	Air Conditioning and Refrigeration Controls	4
AHR	140	Residential Sheet Metal	4
AHR	142	Servicing Residential Forced Air Systems	4
AHR	145	Sizing Residential Forced Air Systems	4
AHR	162	Heating Controls	4
AHR	190	Air Conditioning Systems Service and Repair	4
AHR	206	Hot Water Heating Systems	4
AHR	208	Radiant Heating Systems	4
AHR	216	Uniform Mechanical Code	4
AHR	260	Estimating Residential HVAC Systems	4
		Total Required Credits	**65**

Certificate: Residential Hydronic Heating

Required Major Courses			Credits
AHR	103	Fundamentals of Gas Heating	4
AHR	104	Sizing: Heating, Venting/Combustion Air Systems	4
AHR	105	Electricity for HVAC/R	4
PLU	105	Piping Skills	4
AHR	151	Low Pressure Steam Heating	4
AHR	162	Heating Controls	4
AHR	206	Hot Water Heating Systems	4
AHR	208	Radiant Heating Systems	4
AHR	216	Uniform Mechanical Code	4
		Total Required Credits	**36**

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.

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.

Associate of Applied Science: Carpentry

Credits

General Education Requirements	15
Construction Technology Requirements	9
	24

Required Major Courses

First Session

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

Second Session

CON	151	Construction Process	4
CAR	XXX	Carpentry Class from Structure Category	4
CAR	XXX	Carpentry Class from Specialities Category	4
General Education : English/Speech			3
			15

Third Session

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

Fourth Session

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
		Total Required Credits	**60**

Certificate: Carpentry

Required Major Courses

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

Choose a minimum of 4 credits from each category:

Structure	4
Exterior Finishes 4	
Specialties	4
Trade Skills	4
CAR/FIW Electives *(must have approval of your advisor)*	8
Total Required Credits	**32**

Choose the number of credits shown from each group:

Structure **8**

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

Exterior Finishes 4

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

Specialties **8**

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

Trade Skills **8**

CON	100	Computers for Construction
CON	228	Cost Estimation
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	229	Contractors' and Builders' Seminar
CAR	232	Carpentry Lab
		or
CAR	233	Technical Project for Specialty Trade

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.

Associate of Applied Science: Construction Electrician

	Credits
General Education Requirements	15
Construction Technology Requirements	9
	24

Required Major Courses

First Session			
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
Second Session			
EIC	100	Electrical Construction and Planning	4
EIC	120	Electrical Installations II	4
EIC	130	National Electrical Code I	4
English Credit			3
			15
Third Session			
EIC	135	National Electrical Code II	4
EIC	150	DC Circuit Fundamentals	4
CON	151	Construction Process	4
General Elective Credit			3
			15
Fourth Session			
EIC	155	AC Circuit Fundamentals	4
EIC	190	Electrical Code Calculations	4
Science or Humanities or Social Science Courses			6
			14
		Total Required Credits	**60**

Associate of Applied Science: Maintenance Electrician

	Credits
General Education Requirements	15
Construction Technology Requirements	9
	24

Required Major Courses

First Session			
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	2
			16
Second Session			
EIC	220	Industrial Electrical Controls	4
EIC	120	Electrical Installations II	4
EIC	210	Advanced National Electrical Code	4
English Credit			3
			15
Third Session			
EIC	155	AC Circuit Fundamentals	4
EIC	225	Programmable Controllers	4
CON	151	Construction Process	4
General Elective Credit			3
			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
EIC	240*	Fire Alarm Fundamentals	4
Science or Humanities or Social Science Courses			6
			14

**Take 2 of 4 classes marked in fourth session*

Total Required Credits **60**

Certificate: Construction Electrician

Required Major Courses			Credits
CON	105	Blueprint Reading	3
EIC	100	Electrical Construction and Planning	4
EIC	130	National Electric Code I	4
EIC	105	Basics of AC and DC Electricity	4
EIC	120	Electrical Installations I	4
EIC	135	National Electric Code II	4
CON	151	Construction Process	3
EIC	190	Electrical Code Calculation	4
EIC	240	FIre Alarm Fundmentals	4
		Total Required Credits	**34**

Certificate: Advanced Construction Electrician*

Required Major Courses			Credits
CON	105	Blueprint Reading	3
EIC	130	National Electrical Code I	4
EIC	150	DC Circuit Fundamentals	4
EIC	120	Electrical Installation II	4
EIC	135	National Electrical Code II	4
EIC	205	Advanced Electrical Planning	4
EIC	155	AC Circuit Fundamentals	4
EIC	190	Electrical Code Calculations	4
		Total Required Credits	**31**

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

Certificate: Residential Construction Electrician

Required Major Courses			Credits
CON	105	Blueprint Reading	3
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
		Total Required Credits	**19**

Certificate: Post-Degree Specialization for Advanced Construction 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
		Total Required Credits	**16**

**Prerequisite: AAS Degree Construction Electrician Emphasis or instructor's approval.*

Certificate: Maintenance Electrician

Required Major Courses			Credits
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	4
EIC	130	National Electric Code I	4
EIC	230	AC/DC Machines: Theory and Applications	4
EIC	220	Industrial Electrical Controls I	4
EIC	135	National Electric Code II	4
EIC	240	Fire Alarm Fundamentals	4
		Total Required Credits	**33**

Certificate: Advanced Maintenance Electrician*

Required Major Courses			Credits
CON	105	Blueprint Reading	3
EIC	105	Basics of AC and DC Electricity	4
EIC	120	Electrical Installations II	4
EIC	235	Transformers and Power Distribution	4
EIC	225	Programmable Controllers	4
EIC	210	Advanced National Electrical Code	4
EIC	230	AC/DC Machines: Theory and Applications	4
EIC	215	Advanced Code Calculations	4
EIC	160	Electrical Instruments and Measurements	4
		Total Required Credits	**35**

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

Certificate: Post-Degree Specialization for Advanced Maintenance Electrician*

Required Major Courses			Credits
EIC	170	Solid State Devices and Circuits	4
EIC	220	Industrial Electrical Controls I	4
EIC	235	Power Transformers and Distribution	4
EIC	225	Programmable Controllers	4
		Total Required Credits	**16**

**Prerequisite: AAS Degree Maintenance Electrician Emphasis 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. Day and evening classes for part- or full-time students range from the areas of millwork, cabinetmaking, furniture making, restoration and repair, toolmaking and related topics in fine woodworking from boat and musical instrument making to bending and veneering. Courses are competency-based. Courses may be repeated up to three times to increase proficiency. All courses are sequenced as shown in the certificate.

Associate of Applied Science: Fine Woodworking

	Credits
General Education Requirements	15
Construction Technology Requirements	9
	24

Required Major Courses

First Session

FIW	100	Fundamentals of Woodworking	4
FIW	108	Toolmaking & Jigs	2
FIW	118	Lathe Turning	1
FIW	122	Woodcarving	1
FIW1	125	Finishing Wood	3
MAT	115	Applied Occupational Math	3
CON	100	Computers for Construction	2
			16

Second Session

FIW	201	Joinery	4
FIW	208	Furniture Repairs	2
FIW	209	Cabinetmaking	4
CON	105	Blueprint Reading	3
General Education: English/Speech Credit			3
			16

Third Session

FIW	200	Veneering and Marquetry	1
FIW	210	Bending and Laminating	1
FIW	215	Advanced Joinery	3
FIW	XXX	Elective	3
General Education: Humanities, Science, Social or Behavioral Science Course			3
			15

Fourth Session

FIW	220	Advanced Furniture and Cabinet Construction	4
FIW	XXX	Elective	3
General Education Elective			3
General Education: Humanities, Science, Social or Behavioral Science Course			3
			13
		Total Required Credits	**60**

Certificate: Fine Woodworking

Required Major Courses			**Credits**
FIW	100	Fundamentals of Woodworking	4
FIW	108	Toolmaking & Jigs	2
FIW	118	Lathe Turning	1
FIW	122	Wood Carving	1
FIW	125	Finishing Wood	3
FIW	200	Veneering and Marquetry	1
FIW	201	Joinery	4
FIW	208	Furniture Repairs	2
FIW	209	Cabinetmaking	4
FIW	210	Bending and Laminating	1
FIW	215	Advanced Joinery	3
FIW	220	Advanced Furniture/Cabinet Construction	4
			30
Electives			
FIW/CAR		Electives *(must have approval of your advisor)*	2
		Total Required Credits	**32**

Certificate: Post-Degree Specialization for Master Craftsman*

This program expands skills to the level of Master Craftsman. You are expected to develop individual portfolios; demonstrating your ability to setup and maintain equipment and design and build original pieces and demonstrate specific skills through presentations for each course. Design skills and drawing proficiency are required. If you cannot demonstrate adequate ability, additional courses are required. A Master Craftsman designation requires submittal of three pieces to be judged by a board of professional woodworkers and instructors. Preliminary rehearsal submittals are encouraged to establish standards of craftsmanship.

Required Major Courses			**Credits**
FIW	106	Planemaking	3
FIW	108	Toolmaking & Jigs	3
FIW	116	Cabriole Leg and Queen Anne Furniture	2
FIW	118	Lathe Turning	2
FIW	122	Wood Carving	2
FIW	125	Finishing Wood	4
FIW	128	Doormaking	4
FIW	150	Period Furniture Making	4
FIW	200	Veneering and Marquetry	2
FIW	205	Tablemaking	4
FIW	206	Chairmaking	4
FIW	208	Furniture Repairs	2
FIW	210	Bending and Laminating	2
FIW	211	Shop Carpentry	2
FIW	215	Advanced Joinery	4
FIW	217	Advanced Cabinetmaking	4
		Total Required Credits	**48**

** Prerequisite: Fine Woodworking Certificate or Degree or permission of Fine Woodworking Department.*

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.

Associate of Applied Science: Plumbing

	Credits
General Education Requirements	15
Construction Technology Requirements	9
	24

Required Major Courses

First Session

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	3
			15

Second Session

PLU	109	Residential Plumbing	4
PLU	116	Plumbing Repair	3
PLU	207	Basic Solar Energy	3
CON	100	Computers for Construction	2
English Credit			3
			15

Third Session

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			3
			15

Fourth Session

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			3
			17
		Total Required Credits	**62**

Certificate: Apprentice Plumber's Training

Required Major Courses			Credits
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
		Total Required Credits	**27**

Certificate: Residential Plumber's

Required Major Courses			Credits
AHR	103	Fundamentals of Gas Heating	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
		Total Required Credits	**28**

Solar Construction Technology

Associate of Applied Science: Active Solar Construction Technology

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.

			Credits
General Education Requirements			15
Construction Technology Requirements			9
			24

Required Major Courses

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
			37
		Total Required Credits	**61**

Associate of Applied Science: Passive Solar Construction Technology

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

			Credits
General Education Requirements			15
Construction Technology Requirements			9
			24

Required Major Courses

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	3
			37
		Total Required Credits	**61**

Certificate: Solar Construction

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	4
		Total Required Credits	**30**

Apprentice-Related Technology

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

Associate of Applied Science: Apprentice-Related *(Applicable Trade)*

	Credits
General Education Requirements	15
Construction Technology Requirements	9
Apprentice Trade-Related Certificate	16-40
Construction Technology Electives *(see CT Advisor)*	4-20
Total Required Credits	**60**

Certificate: Apprentice-Related Carpentry

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

Certificate: Apprentice-Related Drywall*

ARD	111	Drywall Applicator I	4
ARD	112	Drywall Applicator I *(continued)*	4
ARD	121	Drywall Applicator II	4
ARD	122	Drywall Applicator II *(continued)*	4
		Total Required Credits	**16**

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

Certificate: Apprentice-Related Electrical

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

Certificate: Apprentice-Related Ironworker

ARI	111	Ironworker I	4
ARI	112	Ironworker I *(continued)*	4
ARI	121	Ironworker II	4
ARI	122	Ironworker II *(continued)*	4
ARI	131	Ironworker III	4
ARI	132	Ironworker III *(continued)*	4
		Total Required Credits	**24**

Certificate: Apprentice-Related Laborer

Courses marked with an asterisk (*) are required. Completing ***eight*** of the ten courses satisfies the requirements for this certificate.

ARL	101	OSHA*	1/2
ARL	104	Basic Measuring and Layout	1/2
ARL	105	Crane Setup, Rigging and Signaling*	1/2
ARL	107	Scaffold Setup and Safety Certification*	1/2
ARL	112	Basic Blueprint Reading	1/2
ARL	113	Concrete Consolidation, Finishing and Tie Hole Patching*	1/2
ARL	114	Forklift and Bobcat Training	1/2
ARL	115	Scissor Lift and Boom Lift Training	1/2
ARL	116	Hand, Power and Pneumatic Tools and Compaction Operations	1/2
ARL	117	Material Indentification, Handling and Form Stripping	1/2
		Total Required Credits	**4**

Certificate: Apprentice-Related Masonry

ARM	111	Masonry I	4
ARM	112	Masonry I *(continued)*	4
ARM	121	Masonry II	4
ARM	122	Masonry II *(continued)*	4
ARM	131	Masonry III	4
ARM	132	Masonry III *(continued)*	4
		Total Required Credits	**24**

Certificate: Apprentice-Related Plumbing/Pipefitter

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

Certificate: Apprentice-Related Sheet Metal

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

Criminal Justice

Degrees: Associate of Applied Science
Associate of General Studies

Certificates: Variable

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

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 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

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	3
		or	
SOC	255	Criminology	27

General Education Requirements

English/Speech			
ENG	121	English Composition I	3
SPE	115	Principles of Speech Communications	3
		or	
SPE	125	Interpersonal Communication	
Mathematics (100 or above)			3
Credit from any 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)			15

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.*

Total Required Credits **63**

**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	239	Managing Emergency Worker Stress	3
CRJ	256	Classification and Treatment of Offenders	3
			15
Required Courses for Adult Corrections			
CRJ	116	Civil Liability	3
SOC	218	Sociology of Minorities	3
Required Courses for Juvenile Corrections			
CRJ	216	Juvenile Law	3
CRJ	235	Delinquent Behavior	3
		or	
SOC	254	Juvenile Deliquency	(3)
		Total Required Credits	**21**

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	
		or	
SOC	237	Sociology of Death and Dying	3
SOC	258	Violence and Morality	3
Choose any two courses *(6 credits)*			
CRJ	151	Domestic Violence	3
CRJ	152	Sexual Assault	3
CRJ	153	Violence Against Children	3
CRJ	287	Adult Survivors of Childhood Molestation	3
		Total Required Credits	**21**

Associate of General Studies

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

General Education Requirements			Credits
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 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			9
Mathematics (any course from the following) MAT 121, 125, 135, 201, 202			3
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			4
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
			34

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	3
			27
		Total Required Credits	**61**

Certificate: Investigations

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

Required Major Courses			Credits
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	3
			21
Elective Courses *(Select two courses from the following)*			
CRJ	190	Financial Investigations	3
CRJ	218	Drug Investigative Strategies	3
CRJ	246	Traffic Investigation and Management	3
FST	252	Arson Investigation	3
			6
		Total Required Credits	**27**

Certificate: Victim Assistance Administration

			Credits
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	3
		Total Required Credits	**25**

Certificate: Victim Assistance Direct Service

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.

			Credits
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	227	Sociology of Death and Dying	(3)
SOC	258	Violence and Morality	3
		Total Required Credits	**30**

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	152	Sexual Assault
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 Management
CRJ	287	Adult Survivors of Childhood Molestation
CRJ	290	Special Topics in Criminal Justice
CRJ	297	Internship
SOC	227	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

Note: *Additional Criminal Justice courses are offered during the Summer session. Please check with a CRJ advisor for specific offerings.*

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**

Required Courses			Credits
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	1
		Total Required Credits	**27**

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

Early Childhood Professions

Degree: Associate of General Studies
Certificates: Group Leader *(CDA)*
Director's

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 Professions *(ECP)*. Through the courses offered in the Early Childhood Professions program, you may enter the field at the entry level and become a group leader or utilize the courses in the Group Leader Certificate to partially meet requirements for the Director's Certificate.

You may also pursue an Associate of General Studies Degree in Early Childhood Professions. The AGS degree and certificates at Red Rocks provide comprehensive training in both the underlying theories and extensive application experiences in the actual world of child care. Currently the program reflects an emphasis on inclusion of children with special needs and from diverse cultures; working in partnership with families; and the concepts and applications of Vygotsky and the models of High/Scope and Reggio Emilia. Designed to meet the needs of child care professionals, who are currently working, ECP classes are only offered at night and on weekends. Classes other than ECP can be taken during the daytime.

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 an asterisk *(*)* are accepted as transfer credit at MSCD.

Associate of General Studies

All individuals seeking an AGS degree from Red Rocks must be able to pass the ASSET Test of General Education Skills at a collegiate level of 41^{+} in Reading Comprehension and 43^{+} in Writing. Comparable assessments can be used.

- You should plan your program of study with the Early Childhood Professions Coordinator.
- You are encouraged to take ECP 101or 111 and ECP 238 in your first year of classes.
- ECP 226 should be taken only after taking ECP 238 and six additional ECP credits.
- Contact the Early Childhood Professions Coordinator the semester prior to taking ECP 102 and ECP 112 to ensure space availability in the class
- Some ECP courses are offered on a two-year cycle. Contact the Early Childhood Education Professions office for the proposed schedule of these courses.
- With prior approval of the Coordinator of the ECP program, substitutions may be acceptable.

Required Major Courses			Credits
First Session			
ENG	121	English Composition I	3
SOC	101	Sociology I	3
		or	
SOC	205	Marriage and Family	(3)
ECP	148	Guidance Strategies for Children	3
ECP	238*	Child Development	3
ECP	101*	Introduction to Early Childhood Professions	3
			15
Second Session			
ECP	227*	Methods/Techniques: Curriculum Development *(Please see an advisor regarding transfer.)*	3
PSY	101	Introduction to Psychology	3
ECP	102*	Introduction to ECP Lab Techniques	3
ECP	206	Child, Family and Community	3
Humanities Elective *(core)*			3
			15
Third Session			
ECP	205*	Nutrition for Young Children	3
ECP	214*	Language and Cognition and the Young Child	3
ECP	216	Administration: Human Relations for ECP	3
BIO	111	General College Biology I *(Preferred)*	5
		or	
GEY	111	Physical Geology	(4)
		or	
AST	101	Astronomy I	(4)
SPE	115	Principles of Speech Communication	3
			15
Fourth Session			
ECP	210	First Start: Including Children with Disabilities	3
ECP	215*	Creativity and the Young Child	3
		or	
ECP	218	Emotional and Social Growth/the Young Child	(3)
ECP	226*	Administration of Early Childhood Care and Education Programs *(Please see an advisor regarding transfer.)*	3
ECP	294	Professional Issues for Teachers	2
		or	
ECP	295	Professional Issues for Directors	(3)
MAT	135	Introduction to Statistics *(preferred)*	3
		or	
MAT	121	College Algebra	(4)
			14-16
		Total Required Credits	**60**

Note: *If you are planning to transfer to a public four-year college or university, in education, you should contact the ECP Coordinator for further advising.*

Electives

With the approval of the ECP Coordinator, the following electives may be substituted for courses in the degree program:

ECP	104	Basics for Child Care Professionals
ECP	105	"Grand Beginnings" Infant and Toddler Care
ECP	111/112	Infant Toddler Series may be substituted for ECP 101 or 102
ECP	291	Child Care Education Certificate *(1 only)*

Note: *If you already have considerable experience in the field or prior training, you should contact the ECP Coordinator for other acceptable substitutions.*

Certificate: Director

The Director Certificate at Red Rocks enriches the Colorado Human Services Director Certificate by offering ECP 102 or ECP 112 Lab Techniques in order to provide a field experience in Early Childhood Education. You are also required to chose either ECP 294 or ECP 295. These classes address some of the challenges of real world practice.

In Colorado, two alternatives for fulfilling the requirements for Early Childhood Director qualification are: 1) completion of the asterisked (*) courses in the Director's certificate and two years of accrued experience or 2) completion of an Associate of General Studies and one year of accrued experience.

Required Major Courses			Credits
First Session			
ECP*	101	Introduction to Early Childhood Professions	3
ECP*	102	ECP LabTechniques	3
			6
Second Session			
ECP	148	Guidance Strategies for Children	3
ECP*	238	Child Development	3
ECP*	227	Methods and Techniques: Curriculum Development	3
			9
Third Session			
ECP*	205	Nutrition of the Young Child	3
PSY*	101	Introduction to Psychology	3
			6
Fourth Session			
ECP*	216	Administration: Human Relations	3
		or	
ECP	226	Administration of Early Childhood Care and Education Programs	(3)
ECP	294	Professional Issues for Teachers	2
		or	
ECP	295	Professional Issues for Directors	(3)
SOC	101	Introduction to Sociology	3
			8-9
		Total Required Credits	**30**

Certificate: Group Leader

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 for Preschool Emphasis:

			Credits
First Session			
ECP	101	Introduction to Early Childhood Professions	3
ECP	102	Introduction to ECP Lab Techniques	3
			6
Second Session			
ECP	148	Guidance Strategies for Children	3
ECP	238	Child Development	4
ECP	227	Methods and Techniques: Curriculum Development	3
			9
		Total Required Credits	**15**

Required Major Courses for Infant/Toddler Emphasis:

			Credits
First Session			
ECP	111	Infant and Toddler Theory and Practice	3
ECP	112	Care and Nurturing of Infants/Toddlers Lab Techniques	3
			6
Second Session			
ECP	148	Guidance Strategies for Children	3
ECP	206	Child, Family and Community	3
ECP	238	Child Development	3
			9
		Total Required Credits	**15**

Economics

Degree: Associate of Arts Degree

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.

Recommended Courses			**Credits**
ACC	121	Accounting Principles I	4
ACC	122	Accounting Principles II	4
ACC	226	Cost Accounting	4
ECO	201	Principles of Macroeconomics *(Core)*	3
ECO	202	Principles of Microeconomics *(Core)*	3
HIS	101	Western Civilization I *(Core)*	3
HIS	102	Western Civilization II *(Core)*	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 **11**
Electives must be selected from college-level transfer courses. No more than three credits in physical education may be counted.

Total Required Credits **60**

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

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

***Certificate Requirements*

Certificate: Colorado Network Engineering

This program is designed to help prepare you for a career in network engineering and support. The preparation includes Novell NetWare, IntraNetWare and its integration with Windows, Windows 95 and Windows NT. These are products that are common, from the smallest to the largest networks. This program prepares you to be a leader in furture 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.

Required Major Courses			Credits
First Session			
EDT	260	NOVELL Certified CNE/Master CNE Part 1	7
Second Session			
EDT	270	NOVELL Certified CNE/Master CNE Part 2	7
Third Session			
EDT	280	NOVELL Certified CNE/Master CNE Part 3	7
Fourth Session			
EDT	285	NOVELL Certified CNE/Master CNE Part 4	7
		Total Required Credits	**28**

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.

Certificate: Colorado Windows Engineering

This program is designed to help prepare you for a career in Windows network engineering and support. The preparation includes Windows 95 and Windows NT. These platforms are 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 Microsoft Technical Certification Tests to receive the MCPS and MCSE certifications from Microsoft. 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 Microsoft MCSE's.

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

Required Major Courses			Credits
First Session			
EDT	230	Microprocessor In Networks Part A	7
EDT	240	Microprocessor In Networks Part B	7
Second Session			
EDT	261	Microsoft MCSE Part 1	7
Third Session			
EDT	271	Microsoft MCSE Part 2	7
Fourth Session			
EDT	281	Microsoft MCSE Part 3	7
		Total Required Credits	**35**

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 a related field.
- Promotion within Emergency Management or Preparedness divisions in both 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 managment training to enhance the capabilities of federal, state and local government officals; 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 also 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, pubic 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 Assessment 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 substute advanced courses for introductory courses.*

Certificate: Emergency Management and Planning

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 *(FCRRT)*	3
EMP	297	Cooperative Education *(Internship)*	1-6
EMP	299	Independent Study *(Program Analysis)*	1-6
FST	201	Instructional Methodology	3
GEY	235	Computers Systems *(GIS)*	3
		Total Required Credits	**30**

Degree: Associate of Applied Science

Required Major Courses			**Credits**
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 *(Instructor I)*	3
			30

General Education Requirements

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

Electives

EMP	280	Public Policy in Emergency Management	1
EMP	291	Introduction to Public Information	2
EMP	292	Radiological Fundamentals *(FCRRT)*	2
EMP	297	Cooperative Education *(Internship)*	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 my be substituted with counselor approval.*

Emergency Medical Services

Degree: Associate of Applied Science
Associate of General Studies

Certificate: Emergency Medical Technician *(Approval Pending)*

The Emergency Medical Technician Certificate is the first step in working in the EMS field as well as in becoming a Paramedic. The Associate of Applied Science degree is designed for those seeking a career in the EMS field. The Associate of General Studies with an emphasis in Paramedicine is designed for those who are interested in completing an articulated *(approval pending)* baccalaureate degree in Health Care Management *(HCM)* with Metropolitn State College at Denver *(MSCD).* It can also be designed for those who wish to go beyond Paramedicine and into other medical careers such as nursing, physician's assistant or as a medical doctor.

Degree: Associate of Applied Science

Please consult an Emergency Medical Services faculty advisor before beginning this program of study.

Required Major Courses			Credits
EMS	227	Emergency Medical Technician—*(Basic)*	10
EMS	237	Paramedicine *(EMT—Paramedic)*	24
BIO	201	Human Anatomy and Physiology I	4
BIO	202	Human Anatomy and Physiology II	4
CHE	101	Introduction to Chemistry	5
HEO	210	Pathophysiology for Health Occupations	3
HEO	220	Pharmacology for Health Occupations	3
			53

General Education Requirements			
ENG	131	Technical Writing	3
MAT	100	Introduction to Algebra	3
PSY	101	General Psychology	3
SOC	101	Introduction to Sociology I	3
SPE	125	Interpersonal Communication	3
			15

Electives *(any two courses from below)*			
ANT	101	Cultural Anthropology	3
ENG	121	English Composition I	3
MAN	116	Principles of Supervision	3
MAN	226	Principles of Management	3
			6
		Total Required Credits	**74**

Degree: Associate of General Studies
(Approval Pending)

Please consult an Emergency Medical Services faculty advisor before beginning this program of study.

Required Major Course			Credits
EMS	237	Paramedicine *(EMT—Paramedic)*	24
			24

General Education 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 disiplines) 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			9
Mathematics (any course from the following) MAT 121, 125, 135, 201 or 202			3
Multicultural (any course from the following) SOC 218 or SPE 220			3
Science			
BIO	201	Human Anatomy and Physiology I	4
BIO	202	Human Anatomy and Physiology II	4
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
		Total Required Credits	**65**

Certificate: Emergency Medical Technician
(Approval Pending)

Required Major Course			Credits
EMS	227	Emergency Medical Technician—Basic	10
EMS	230	Pre-Hospital Intravenous Therapy	2
SPE	125	Interpersonal Communications	3
		Total Required Credits	**15**

Engineering *(Pre-Engineering)*

Degree: Associate of Science with an Emphasis in Pre-Engineering

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			3
			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			3
			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	4
			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 *			3
			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. ASME (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.

Area of Emphasis: 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.

First Session			**Credits**
EGT	100	Technical Drawing	9
EGT	110	Basic CADD *(Computer-Aided Design Drafting)*	6
*General Education Mathematics Requirement			3-5
			18-20
Second Session			
EGT	120	Intermediate CADD *(Computer-Aided Design Drafting)*	3
EGA	121	Intermediate CADD *(Architectural)*	3
EGT	130	Three-Dimensional CADD	3
EGA	131	Three-Dimensional CADD *(Architectural)*	3
ENG	131	Technical Writing *(General Ed. English Requirement)*	3
			15
Third Session			
EGX	XXX	Architectural Elective Course(s)	3
Faculty Advisor Approved Elective			3
PHY	XXX*	Physics *(General Ed. Science Requirement)*	4-5
EGA	231	Architectural Design/Drafting I	6
			16-17
Fourth Session			
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			3
			15

Architectural Electives

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	3
		Total Required Credits	**60-66**

***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.

Area of Emphasis: 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.

First Session			**Credits**
EGT	100	Technical Drawing	9
EGT	110	Basic CADD *(Computer-Aided Design Drafting)*	6
*General Education Mathematics Requirement			3-5
			18-20
Second Session			
EGT	120	Intermediate CADD *(Computer-Aided Design Drafting)*	3
EGM	121	Intermediate CADD *(Mechanical)*	3
EGT	130	Three-Dimensional CADD	3
EGM	131	Three-Dimensional CADD *(Mechanical)*	3
ENG	131	Technical Writing *(General Ed. English Requirement)*	3
			15
Third Session			
EGX	XXX	Mechanical Elective Course(s)	3
Faculty Advisor Approved Elective			3
PHY	XXX*	Physics *(General Ed. Science Requirement)*	4-5
EGM	231	Mechanical Design/Drafting I	6
			16-17
Fourth Session			
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			3
			15

Mechanical Electives

			Credits
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	3
		Total Required Credits	**60-66**

**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.

Certificate: Architectural

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 *(Computer-Aided Design Drafting)*	6
*General Education Mathematics Requirement			3-5
			18-20
Second Session			
EGT	120	Intermediate CADD *(Computer-Aided Design Drafting)*	3
EGA	121	Intermediate CADD *(Architectural)*	3
EGT	130	Three-Dimensional CADD	3
EGA	131	Three-Dimensional CADD *(Architectural)*	3
Faculty Advisor Approved Elective(s)			3
			15
		Total Required Credits	**33-35**

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

Certificate: Mechanical

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 *(Computer-Aided Design Drafting)*	6
*General Education Mathematics Requirement			3-5
			18-20
Second Session			
EGT	120	Intermediate CADD *(Computer-Aided Design Drafting)*	3
EGA	121	Intermediate CADD *(Mechanical)*	3
EGT	130	Three-Dimensional CADD	3
EGA	131	Three-Dimensional CADD *(Mechanical)*	3
Faculty Advisor Approved Elective(s)			3
			15
		Total Required Credits	**33-35**

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

English

Degree: Associate of Arts

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			**Credits**
Select 21 credits from the following courses:			
ENG	131	Technical Writing I	3
ENG	221	Creative Writing I	3
LIT	115	Introduction to Literature *(Core)*	3
LIT	201/202	Masterpieces of Literature I, II *(Core)*	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

English/Speech

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

Humanities (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

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 **5**
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 Safety Technology

Degree: Associate of Applied Science With Areas of Emphasis in:

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

This degree and certificate are offered through the Colorado Consortium for Environmental and Safety Technology *(EST).* Required and recommended courses are offered at Front Range, Red Rocks, and Arapahoe Community Colleges. Specific graduation requirements may differ slightly among the colleges. 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)
			14-16

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	(5)
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 left)* **14-16**

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

Technical Electives *(choose 19 - 21 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
		Total Required Credits	**60**

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)* **14-16**

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

Technical Electives *(choose 19 - 21 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
		Total Required Credits	**60**

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)*			**14-16**
General Education Requirements *(see above)*			**25**
Technical Electives *(choose 19 - 21 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
		Total Required Credits	**60**

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)*			**14-16**
General Education Requirements *(see above)*			**25**
Technical Electives *(choose 19 - 21 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
		Total Required Credits	**60**

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.

Degree: Associate of Applied Science

General Education Requirements

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

Degree: Associate of General Studies

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

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

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	Special Topics	3
FVT	297	Cooperative Education	3

Certificate: Film Production

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	209	Production Management Techniques	3
FVT	220	16mm Production	3
FVT	270	Film/Video Production III	3
FVT	280	Introduction to AVID Media Composer	3
		Total Required Credits	**36**

Certificate: Video Production

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	209	Production Management Techniques	3
FVT	215	Video Post Production II	3
FVT	270	Film/Video Production III	3
FVT	280	Introduction to AVID Media Composer	3
		Total Required Credits	**36**

Certificate: Video Post-Production

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	209	Production Management Techniques	3
FVT	215	Video Post Production II	3
FVT	254	Introduction to Digital Editing—Adobe Premiere	3
FVT	270	Film/Video Production III	3
FVT	280	Introduction to AVID Media Composer	3
		Total Required Credits	**36**

Certificate: Writing, Directing, and Producing for Film/Video

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	3
		Total Required Credits	**45**

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 fields.
- 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	100**	Essentials of Firefighting	5
FST	297**	Fire Academy I	4
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 *(Fire Inspector I)*	3
FST	110	Job Assessment	3
		or	
FST	201	Instructional Techniques	(3)
FST	202	Firefighting Strategy and Tactics	3
FST	204	Codes and Ordinances	3
FST	205	Fire Cause Determination	3
EMS	227	Emergency Medical Technician—Basic	10
EST	107	Hazardous Materials I/Awareness and Operations	3
PHE	100	Physical Education Aerobics I	1
PHE	150	Physical Education Aerobics II	1
			54

General Education Requirements

Science elective		CHE, BIO, PHY, AST or GEY	4-5
ENG	121	English Composition I	3
MAT	100	Introductory to Algebra *(or higher)*	3
Humanities or Liberal Arts Course			3
Social and Behavioral Sciences Course			3
			16-17

Elective Courses 11

EST	112	Chemistry of Hazardous Materials I	3
EMS	237	Emergency Medical Technician—Paramedic	24
FST	101	Fire Academy *(Firefighter II)*	3
FST	111	Private Fire Protection Systems	3
FST	112	Fire Service Planning	3
FST	113	Introduction to Fire Prevention Awareness	3
FST	120	Confined Space Safety and Rescue *(OSHA Certification)*	3
FST	121	Rope Rescue Module I	1
FST	122	Rope Rescue Module II	1
FST	123	Rope Rescue Module III	1
FST	150	Public Fire Prevention and Education (*Public Fire Education)*	3
FST	152	Wildland Firefighter *(I, II)*	3
FST	201	Instructional Techniques *(Fire Instrucotr I/II Cert.)*	3
FST	206	Fire Service Supervision/Leadership *(Officer I Cert.)*	3
FST	207	Strategy and Tactics II	3
FST	208	Codes and Ordinances II	3
FST	251	Fire Service and the Law	3
FST	252	Fire Investigation *(Fire Investigator)*	3
FST	253	Incident Command	3
FST	254	Hazardous Materials II *(Technician Level)*	3
FST	255	Fire Service Management *(Fire Officer II)*	3
FST	256	Fire Administration *(Fire Officer III)*	3
FST	257	Volunteer Fire Department Administration	3
FST	258	Wildland Fire Incident Management and Organization	2
FST	261	Fire Operation in the Urban Interface	3
FST	264	Fire Hazard and Risk Analysis	3
FST	290	Advanced Topics	1-3
FST	297**	Cooperative Education Academy	4
FST	299	Independent Study and Analysis	1-3

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

Certificates: Fire Science Technology

Certificates may be obtained upon completion of the following "Areas of Emphasis". Please submit a written application to the Director of Fire Science Technology.

Area of Emphasis: Code and Ordinances

			Credits
FST	105	Building Plans and Construction	3
FST	106	Fire Inspection Practices	3
FST	204	Codes and Ordinances I	3
FST	208	Codes and Ordinances II	3
MAN	219	Public Relations Management	3
		Total Required Credits	**15**

Area of Emphasis: Emergency Medical Service/Paramedic

			Credits
EMS	227	Emergency Medical Technician—B	10
EMS	237*	Emergency Medical Technician/Paramedic	24
		Total Required Credits	**34**

**EMS 237 is available through the St. Anthony's Hospital EMS Program.*
Upon completion of this course, you receive 24 credits toward an Associates Degree in Fire Science or a Paramedic Technician Degree.

Area of Emphasis: Fire Investigations *(Police and Fire Personnel only)*

			Credits
FST	205	Fire Cause Determination	3
FST	252	Arson Investigation	3
FST	299	Independent Study—Fire Analysis	3
CRJ	240	Criminal Investigations	3
CRJ	245	Interviewing Techniques	
EST	112	Chemistry of Hazardous Materials	4
		Total Required Credits	**19**

Area of Emphasis: Fire Service Management

			Credits
FST	201	Instructional Methodology	3
FST	206	Fire Company Supervision and Leadership	3
FST	253	Incident Command	3
FST	255	Fire Service Management	3
FST	256	Fire Administration	3
		or	
FST	257	Volunteer Department Administration	(3)
FST	299	Independent Study and Analysis	3
		Total Required Credits	**18**

Area of Emphasis: Hazardous Materials Technician

			Credits
FST	107	Hazardous Materials Awareness/Operations Level	3
FST	202	Firefighting Strategy and Tactics	3
FST	253	Incident Command	3
FST	254	Hazardous Materials Technician	6
EST	112	Chemistry of Hazardous Materials	4
		Total Required Credits	**15**

Area of Emphasis: Wildland Management

			Credits
FST	152	Wildland Firefighting	3
FST	253	Command of Major Incidents	3
FST	258	Wildland Fire Management/Organization	2
FST	261	Fire Operations in the Urban Interface	3
PAR	203	Natural Resource Management	3
		Total Required Credits	**14**

Foreign Languages

Degree: Associate of Arts Degree

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 changes 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.

Recommended Courses			**Credits**
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

English/Speech			
ENG	121	English Composition I *(Core)*	3
ENG	122	English Composition II *(Core)*	3
SPE	115	Principles of Speech Communication *(Core)*	3

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

Degree: Associate of Science

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.

Recommended Courses			**Credits**
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: Holistic Health*
Holistic Nursing*
(Approval Pending)

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	106	Case Management	1/2
CEN	107	Camp Health Care	1/2
CEN	110	Neurolinguistic Programming I	1/2
CEN	201	Ethics in Health Care	1/2
CEN	202	Aromatherapy	1/2
CEN	203	Women's Holistic Health Care	1/2
CEN	205	Herbology	1/2
CEN	208	Basic EKG Interpretation	1
CEN	209	Spanish for Health Care Level I	1
CEN	210	Physical Assessment of the Adult	2-3
CEN	212	Neurolinguistic Programming II	1/2
CEN	213	Spiritual Role in Health Care	1/2
CEN	216	Humor Therapy	1/2
CEN	217	Phlebotomy Refresher	1
CEN	218	Better Charting and Legal Documentation	1/2-1
CEN	219	Family Violence	1/2
CEN	220	Law Every Nurse Should Know	1/2-2
CEN	221	High Level Wellness	1
CEN	224	Massage Therapy	1
CEN	225	Introduction to Home Health Nursing	1/2-1
CEN	226	Intravenous Therapy	1
CEN	227	Communication Skills	1/2-1
CEN	228	Solution Focused Counseling	1/2
CEN	229	Wellness Counseling	1
CEN	230	Trauma Assessment and Intervention	1
CEN	232	Caring for the Caregiver	1/2
CEN	235	Nutritional Therapy and Health	1/2
CEN	236	Dance Therapy and Healing	1/2
CEN	238	Advanced EKG Interpretation	1
CEN	239	Intravenous *(IV)* Certification	4 1/2
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	247	Phlebotomy Certification	3
CEN	248	Conflict Resolution	1/2
CEN	249	Journaling	1
CEN	250	Home Health Nursing Skills Part I	1/2
CEN	251	Music as a Therapy for Wellness	1
CEN	252	Menopause: Traditional/Natural Approaches	1/2-1
CEN	254	Holistic Nursing-Level II	2
CEN	255	Spanish for Health Care Level II	1
CEN	256	Holistic Nursing Level III	2
CEN	257	ACLS *(Advanced Cardiac Life Support)*	2
CEN	258	Journaling the Spiritual Journey	1
CEN	259	ACLS Recertification *(Advanced Cardiac Life Support)*	1/2
CEN	260	Bereavement Counseling	1/2
CEN	262	Advanced Therapeutic Touch	1
CEN	263	Self-Esteem and the Child	1
CEN	264	Documentation in Home Health	1/2-1
CEN	265	Personal Power: Gift of Self-Esteem	1
CEN	266	Physical Assessment for Home Health	1
CEN	267	Living Without Limits	1/2
CEN	269	Healing Presence	1/2
CEN	271	AIDS Update	1/2
CEN	276	Creating Healthy Relationships	1
CEN	278	Hospice Nursing	1/2
CEN	281	Home Health Nursing Skills Part II	1/2
CEN	282	Legal Issues in Home Health Care	1/2
CEN	283	Psychoneuroimmunology	1/2
CEN	285	Stress Management	1/2-1
CEN	287	Nurse Entrepreneur	1/2
CEN	289	Career Alternatives Within Nursing	1/2

Certificate: Continuing Education Refresher Nursing

Proof of immunizations and a letter from a physician stating you are physically and mentally able to participate in this course is required prior to participating in clinicals.

Required Major Course			Credits
CER	200	Registered Nurse Refresher Course	12

History

Degree: Associate of Arts Degree

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.

Recommended Courses			Credits
ANT	101	Cultural Anthropology *(Core)*	3
ECO	201	Principles of Macroeconomics *(Core)*	3
ECO	202	Principles of Microeconomics *(Core)*	3
GEO	105	World Regional Geography *(Core)*	3
HIS	101	Western Civilization I *(Core)*	3
HIS	102	Western Civilization II *(Core)*	3
HIS	201	U.S. History I *(Core)*	3
HIS	202	U.S. History II *(Core)*	3
POS	111	American Government *(Core)*	3
SOC	101	Introduction to Sociology I *(Core)*	3
SOC	102	Introduction to Sociology II *(Core)*	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 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

Degree: Associate of Arts Degree

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.

Recommended Courses			Credits
ART	111	Art History I *(Core)*	3
		or	
ART	112	Art History II *(Core)*	
HUM	121	Survey of Humanities I *(Core)*	3
HUM	122	Survey of Humanities II *(Core)*	3
HUM	123	Survey of Humanities III *(Core)*	3
HUM	215	Ideas in a Changing Society	3
LIT	115	Introduction to Literature *(Core)*	3
MUS	120	Music Appreciation *(Core)*	3
PHI	111	Introduction to Philosophy *(Core)*	3
THE	211	Development of Theatre I *(Core)*	3
		or	
THE	212	Development of Theatre II *(Core)*	

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) 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) 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**

Mathematics

Degree: Associate of Science

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
			14
Second Session *(Spring)*			
ENG	122	English Composition II *(Core)*	3
MAT	202	Calculus II *(Core)*	5
Humanities Core Elective			3
Social/Behavioral Science Core Elective			3
			14
Third Session *(Fall)*			
SPE	115	Principles of Speech Communication *(Core)*	3
MAT	203	Calculus III	4
Computer Science Elective			4
Science Core Elective			5
			16
Fourth Session *(Spring)*			
MAT 255 and/or MAT 265			3-6
Science Core Elective			5
Transferable Electives			8-3

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 Applied 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.

Proof of immunizations and a letter from a physician stating you are physically and mentally able to participate in this course is required prior to participating in clinicals.

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
Total Required Credits	**64**

Certificate: Medical Assisting

Required Major Courses			**Credits**
First Session *(Fall)*			
HEO	100	Medical Terminology	3
HEO	104	Anatomy & Physiology for Health Occupations	4
First Seven Weeks			
*HEO	140	Medical Office I	4
Second Seven Weeks			
BTE	102	Keyboarding Applications*	4
*HEO	141	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
Second Seven Weeks			
*HEO	240	Lab Skills for Medical Office	3
Third Session *(Summer)*			
HEO	297	Medical Assisting Internship	6
*HEO	206	Coding/Health Insurance Methods and Claims	4
*BTE	115	Data Entry I	4
		Total Required Credits	**49**

**These courses are only offered during the session shown above*

Medical Office

Degree: Associate of Applied Science
Certificate: 46 Credits

The Medical Office program is designed to prepare you, upon successful completion, for a career as an allied health professional, assisting physicians in office operations. This program prepares you to provide a wide range of medical office administration services. 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

Required Major Courses			Credits
Fall			
HEO	100	Medical Terminology	3
BTE	102	Keyboarding Applications	4
ENG	121	English Composition I	3
CIS	118	Microcomputer Applications	5
			15
Spring			
HEO	140	Medical Office I	4
HEO	141	Medical Office II	4
HEO	104	Anatomy and Physiology for Health Professions	4
CEN	201	Ethics in Health Care	1
CEN	207	Patient's Rights	1
			14
Summer			
HEO	206	Coding/Health Insurance Methods and Claims	4
ACC	105	Expanded Fundamentals of Accounting	5
MAT	100	Introductory Algebra *(or higher)*	3
General Education Course			3
			15
Fall			
CEN	218	Better Charting and Legal Documentation	1
BUS	217	Business Communications and Report Writing	3
MAN	116	Principles of Supervision	3
		or	
MAN	120	Office Management	(3)
HEO	297	Medical Office Internship	3
General Education Course			3
General Education Course			3
			16

General Education Requirements

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 Science (ANT, ECO, GEO, HIS, POS, PSY, SOC) 9

Total Required Credits **60**

Certificate: Medical Office

Fall			
BTE	102	Keyboarding Applications	4
HEO	100	Medical Terminology	3
HEO	140	Medical Office I	4
			15
Spring			
CIS	118	Microcomputer Applications	5
HEO	104	Anatomy/Physiology for Health Professions	4
HEO	141	Medical Office II	4
			13
Summer			
HEO	206	Coding/Health Insurance Methods and Claims	4
HEO	297	Medical Office Internship	3
			7
		Total Required Credits	**31**

Multimedia Technology

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
- Graphics and Animation

Certificate
- 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
- Production and Design

Certificate
- 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

English/Speech (ENG 121 recommended)	3
Mathematics (MAT 121 recommended)	3
Art, Humanities, Science, Social Science (MUS 120, THE 111, ART 110 and/or PHI 112 recommended)	6
Elective from above (SPE 115 recommended)	3
Total Required Credits	**15**
Approximately 12 Additional Courses to total *Could include Co-op or Intern Experience*	**60**

Associate of General Studies+

Designed for students who desire both work and transfer options

General Education Requirements

English/Speech (ENG 121, SPE 115 recommended)		6
Mathematics (MAT 121 recommended)	3	
Social Science (SOC 101, POS 111 or POS 105 recommended)	3	
Humanities (PHI 112, MUS 120, THE 111 or ART 110 recommended)	3	
Science		3
Total Required Credits	**18**	
Approximately 11 Additional Courses to total Could include Co-op or Intern Experience	**60**	

Multimedia Technology Core–Required for all Degree Candidates

Test-outs and Articulation Possible

Course Number and Description			Credits
CIS	113	Introduction to Macintosh Computers	2
MTC	100	Multimedia Equipment and Technology	*3
MTC	101	Introduction to Design and Graphics	*3
MTC	201	Multimedia Production and Management *(Should be taken during last semester of program)*	*3
		Total Required Credits	**11**

**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
General Education Requirements	15-18
Multimedia Technology Core	11
Total Required Credits	26-29

Required Major Courses

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).

Total Required Credits **62-65**

+*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.*

Certificate: Graphics and Animation Technology

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

Total Required Credits **29**

Production and Design Technology *(PDT)*

Multimedia AAS and AGS+ Degree with Production and Design Technology Emphasis

	Credits
General Education Requirements	15-18
Multimedia Technology Core	11
Total Required Credits	26-29

Required Major Courses

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).

Total Required Credits **62-65**

Certificate: Production and Design Technology

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

Total Required Credits **29**

Nurse Aide/Home Health Aide

Certificate: 5 Credits

Proof of immunizations and a letter from a physician stating you are physically and mentally able to participate in this course is required prior to participating in clinicals.

Required Course			Credits
NUR	108	Nurse Aide/Home Health Aide	5

Nursing *(Pre-Nursing)*

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			Credits
First Session *(Fall)*			
OSH	110	Fire Protection	2
OSH	130	Construction Standards	5
ENG	121	English Composition I	3
CIS	115	Introduction to Computers *(Required Lab)*	5
		or	
CIS	118	Microcomputer Applications *(Required Lab)*	5
OSH	202	Accident Prevention	2
			17
Second Session *(Spring)*			
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	3
			17
Third Session *(Fall)*			
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	4
			14
Fourth Session *(Spring)*			
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	2
			14
		Total Required Credits	**63**

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

Certificate: Occupational Safety Technology

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.

Required Major Courses			Credits
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
		Total Required Credits	**30**

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.

Required Major Courses			Credits
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
			28

General Education Requirements			
ENG	131*	Technical Writing	3
PSY	101	General Psychology I	3
MAT	100	Introductory Algebra *(or higher level course)*	3
SOC	101	Introduction to Sociology I	3
SPE	125	Interpersonal Communication	3
			15

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	24
		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.

Required Major Courses			Credits
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	205	Resource Interpretation	3
PAR	297	Park Ranger Internship	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

Science

GEY	111	Physical Geology	4
		or	
ENV	101	Introduction to Environmental Science	4

Social and Behavioral Sciences

PSY	101	General Psychology I	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

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
PAR	218	Outdoor Leadership	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

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 Park Ranger Technology	3
PAR	230	Park Ranger Law Enforcement	3
PAR	297	Park Ranger Internship	3
		Total Required Credits	**33**

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	102	Introduction to Park Ranger Technology	3
PAR	205	Resource Interpretation	3
PAR	297	Park Ranger Internship	3
Credit from the following areas:			**21**
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
PAR	218	Outdoor Leadership	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
		Total Required Credits	**30**

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	297	Park Ranger Internship	3
EMS	227	Emergency Medical Technician *(Basic)*	10
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	2
FST	253	Incident Command at Major Incidents	3
PHE	229	Wilderness Survival I	3
		Total Required Credits	**33**

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	297	Park Ranger Internship	3
PAR	255	Advanced Resource Interpretation	3
		Total Required Credits	**34**

Philosophy

Degree: Associate of Arts

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
			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
			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
			16-17
Fourth Session			
POS	105	Introduction to Political Science	3
Humanities Core Course *(except Philosophy)*			3
Transferrable Electives			8
			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

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 *(Core)*	5
CHE	112	General College Chemistry II *(Core)*	5
CSC	160	Computer Science I *(Required Lab)*	5
		or	
CIS	148	FORTRAN Programming *(Required Lab)*	4
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) 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.*

Physician Assistant

Certificate: 75 Credits *(Approval Pending)*

The Physician Assistant program is a rigorous 24 month program divided between didactic instruction in the basic medical sciences, patient assessment and management and supervised clinical experiences.Physician Assistants are health care providers who practice medicine under the supervision of licensed physicians. The Physician Assistant program emphasizes training in primary care. You are urged to consult with a faculty advisor before beginning any program of study.

Program Prerequisites

1. Applicants must have completed 90 credits at an accredited institution of higher education with a minimum grade point average of 2.75 or above on all college work.

2. The following courses must have been completed successfully with a grade of C or better.

	Credits
Introductory Algebra	3
English electives	6
Medical Terminology	3
Human Anatomy/Physiology I	4
Microbiology	4
Introduction to Statistics	3
Chemistry *(Inorganic, Organic, or Biochemistry)*	10
Computer elective	4
Psychology or Social Science elective	6

3. Applicants must present documentation of 2,000 hours of direct patient care in a health care setting. *(Example: nursing, nurse's aide, emergency medical technician, paramedic, medical office assistant with patient care responsibilities, military medical specialist/corpsman, etc.)* Documentation requires a letter of verification from the applicant's supervisor. This letter must be on employer's letterhead.

4. Applicants must attain college level assessment scores on a specified college entrance exam. Please consult a program advisor.

5. Applicant must submit a Physician Assistant program application to the Program Director, as well as an application to Red Rocks Community College.

6. Interviewees must obtain criminal background check and have it submitted to the Program Director.

7. Applicants must have three professional references submitted to the Program Director prior to an interview.

8. Applicants must present proof of immunization or immunity for diphtheria/tetanus, measles, mumps, rubella, varicella *(chickenpox)*, and initiation of Hepatitis B vaccination series, or (+) Hepatitis B antibody titer or signed declination form.

9. Applicants must present verification of CPR certification *(Professional rescuer level from the American Red Cross, or Level C from the American Heart Association.)*

10. Interviewees must have a satisfactory interview with the program council.

Required Courses — Credits

First Session

PAP	200	Biochemistry and Cell Biology	3
PAP	205	Human Anatomy and Development	3
PAP	220	History Taking and Physical Assessment	2
PAP	210	Human Physiology I	3

Second Session

PAP	211	Human Physiology II	3
PAP	235	Disease Process I	6
PAP	230	Drug Therapy I	4
PAP	221	Clinical Management I	2

Third Session *(8 weeks)*

PAP	207	Health Promotion	3
PAP	203	Health Care Issues I	2
PAP	236	Disease Process II	2
PAP	231	Drug Therapy II	1

Fourth Session *(6 weeks)*

PAP	240	Behavioral Sciences	3
PAP	204	Health Care Issues II	2
PAP	222	Clinical Management II	2

Sessions 5 - 9 *(51 weeks)*
Course numbers to be assigned at a late date for PAP 250-280) These courses begin Fall 1999.

Clinical rotations and preceptorships
(rotations include both distant and local sites).

Topics include:
Family medicine; internal medicine; general pediatrics; primary care preceptorships; emergency medicine and urgent care; orthopedics, rehab and sports medicine; geriatrics; general surgery, obstetrics and gynecology; psychiatry and electives.

Total Required Credits	**75**
Prerequisites	**90**
Clincial Contact	**51 weeks**

Political Science

Degree: Associate of Arts

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

Plumbing

(See Construction Technology)

Production and Design Technology

(See Multimedia Technology)

Psychology

Degree: Associate of Arts

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 advanced classes:			
PSY	226	Social Psychology	3
PSY	235	Human Growth and Development	3
PSY	238	Child Development	3
PSY	249	Abnormal Psychology	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

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, 255

Electives 23
Biology, Chemistry and PSY 115 are highly recommended for Psychology Majors. All Psychology Majors should check with the Transfer Center on campus to help determine the best electives to choose for the university they will be attending. All electives must be chosen from 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 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			Credits
First Session *(Fall)*			
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
Second Session *(Spring)*			
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
Third Session *(Summer)*			
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			Credits
MAT	105	Intermediate Algebra	4
PSY	101	General Psychology	
		or	3
SOC	101	Introduction to Sociology	
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

Degree: Associate of Arts

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.

Recommended Courses			Credits
SOC	101	Introduction to Sociology I *(Core)*	3
SOC	102	Introduction to Sociology II *(Core)*	3
SOC	215	Contemporary Social Problems	3
SOC	XXX	Electives to be selected from the sociology curriculum	6

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			9
Mathematics (any course from the following) MAT 121, 125, 135, 201, 202			3
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			4
Social and Behavioral Sciences (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

Electives 17

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

Total Required Credits 60

Speech Communications

Degree: Associate of Arts

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.

Recommended Courses			Credits
SPE	111	Survey of Communication	3
		or	
SPE	125	Interpersonal Communication	
		or	
SPE	211	Advanced Public Speaking	
SPE	217	Group Communication	3
SPE	220	Intercultural Communication	3
SPE	230	Argumentation and Debate	1-3
		or	
SPE	275	Forensics and Speech Competition	1-3

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

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 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

Theatre Arts

Degree: Associate of 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

Humanities (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

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

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

Water Quality Management Technology

Degree: Associate of Applied Science

This program is designed to prepare individuals as technicians in the field of water and wastewater treatment. It also provides additional training for those already employed in the industry.

Required Major Courses			Credits
WQM	100	Introduction to Water Quality Management	3
WQM	105	Specific Calculations for Water Quality Management	4
WQM	119	Basic Water Quality Analysis	4
WQM	120	Water Quality Equipment Maintenance	4
WQM	126	Safety in the Water Quality Industry	3
WQM	200	Hydraulics for Water Quality Management	4
WQM	206	Design Interpretation of Water Quality System	4
WQM	216	Biological and Bacteriological Water Quality Analysis	4
WQM	217	Disinfection Techniques in Water Quality Systems	4
			34

Approved Electives **12**

General Education Requirements

English/Speech (COM, ENG, SPE) 3
Mathematics (056 or above) 3

Credit from any 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)

Other Required Courses

CIS	118	Microcomputer Applications (Required Lab)	5

Total Required Credits **66**

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
			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, HIS, POS, PSY, SOC)

Total Required Credits **74**

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

As technology rapidly and continually changes, people need training opportunities that accommodate their busy lifestyles. Red Rocks offers the latest training in the nation's fastest-growing career fields, including computer science, multimedia technology and health careers.

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 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 asset and intangible asset accounting, and depreciation methods and practices.

ACC 122 Principles of Accounting II
4 Credits

Prerequisite: ACC 121 or equivalent with a grade of C or better

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 136 Computerized Accounting
3 Credits

Prerequisite: ACC 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 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 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 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 management reports. The concepts and procedures of job order, process, standard and direct cost systems are covered; 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.

AIR CONDITIONING, HEATING AND REFRIGERATION

AHR 103 Fundamentals of Gas Heating
4 Credits

This course introduces you to the fundamentals of gas heating. You work in a classroom and shop environment. Topics include the basics of gas heating systems, operation of gas valves and burners, gas pipe system design, gas piping system code requirements and basic code requirements for heating systems.

AHR 104 Sizing: Heating, Venting & Combustion Air Systems
4 Credits

This course gives you the opportunity to learn how to design a complete heating system. This includes sizing the furnace or boiler, designing the venting and combustion air systems. You learn how to properly complete a heat loss calculation. This course also studies how to apply code requirements for combusion air and venting systems.

AHR 105 Electricity for HVAC/R
4 Credits

This combination lab/lecture course covers fundamentals of electricity, measuring instruments and electrical safety practices. You will learn Ohm's Law and its practical application. You will work with electric motors, basic electrical components and learn their application to the HVAC/R trade.

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 122 Air Conditioning Systems
4 Credits

This course studies the basics of air conditioning system design, operation and installation. You learn how cooling systems can be designed with human comfort and efficient operation in mind. Time is spent in the shop installing components related to these systems.

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 Sheet Metal
4 Credits

This course is designed for those who wish to enter the HVAC trade. You learn 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. *This course may be applied to Construction Technology certificates/degrees only with approval from a faculty advisor.*

AHR 142 Servicing Forced Air Systems
4 Credits

This course covers the operation, repair and maintenance of forced air heating systems. It studies the different types of furnaces, code requirements, common controls and mechanical problems. This course also explores the A.G.A. approved method of testing furnace heat exchangers. Customer relations and workplace behavior are discussed.

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. 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 190 Servicing HVAC Systems
4 Credits

This course emphasizes the service of HVAC systems. You will develop a preventative maintenance program for various types of equipment; both commercial and residential. Troubleshooting techniques, and equipment repair and rebuilding are discussed. Additional time is spent on equipment change outs, upgrading and retrofitting different refrigerants.

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 202 Pneumatic Controls
4 Credits

This course covers pneumatic controls and systems used in controlling commercial and industrial HVAC equipment. It includes lab experimentation with pneumatic controls, rebuilding of valves and actuators and calibration of various types of controls. You work with controls from most of the major manufacturers.

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 208 Radiant Heating Systems
4 Credits

This course is a combination lab/lecture course and covers the theory of operation, installation and maintenance of warm water radiant heating systems. Different methods of zoning, controls, piping methods, piping types and system components are discussed. Upon successful completion, you are able to design, install, document, maintain and trouble-shoot all conventional residential warm water, radiant panel heating systems.

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
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.

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. Those interested in this course must have previous experience with residential heating systems.

AHR 260 Bidding and Installing HVAC/R Systems
4 Credits

This course studies how to become profitable in bidding and installing HVAC/R systems. The cost of running a business and incorporating that cost in your bid is discussed. Topics include reading job specifications, completing a material take-off, estimating forms and programs, estimating labor and materials, and subcontract agreements.

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, Teotihuccan and Aztec. The course presents the daily life, religion, art, social and political organization and other historical characteristics.

APPRENTICE-RELATED CARPENTRY

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

ARC 111 & 112 Carpenter I
4 Credits Each

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 Each

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 Each

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 Each

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.

APPRENTICE-RELATED DRYWALL

ARD 111 & 112 Drywall Applicator *(Year One)*
4 Credits Each

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 Each

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 pre-finished 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.

ARD 111 & 112 Drywall Applicator *(Year One)*

4 Credits Each

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 Each

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, pre-finished 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.

APPRENTICE-RELATED ELECTRICITY

ARE 111 & 112 Electrical I
4 Credits Each

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 Each

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 Each

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 bussways, 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 Each

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.

APPRENTICE-RELATED HVAC/R

ARH 111 HVAC/R I
4 Credits

This combination lab/lecture course includes an introduction to the HVAC/R trade. With the amount of electrical knowledge required to work on any HVAC/R equipment, the focus of this first course is electricity. The course includes the fundamentals of electricity, measuring instruments and electrical safety practices. You will learn Ohm's Law and its practical application. You will work with electric motors, basic electrical components, and learn their application to the HVAC/R trade.

APPRENTICE-RELATED LABORER

ARL 101 OSHA
1/2 Credit

This course exposes you to construction safety basics, including earthwork and trenching; fall protection and electricity; hazardous material handling, basic requirements of storage and use of hazardous material, as well as the requirements for reporting accidents. You will receive a certificate of completion if you complete this 10-hour course. There are questions and discussions and participation is expected.

ARL 104 Basic Measuring and Layout
1/2 Credit

This course teaches you to read and use a tape measure and apply fractions. You are introduced to an automatic level and its functions and study the most common layout mistakes. You are also introduced to the uses and care of the "chain".

ARL 105 Crane Setup, Rigging and Signaling
1/2 Credit

This course studies how to recognize when a crane is properly setup as well as proper rigging. Basic rigging techniques, hand signals, rigging, inspection and site preparation are covered. In addition, you will receive a handbook on rigging with a wallet card of hand signals.

ARL 107 Scaffold Setup and Safety Certification
1/2 Credit

This course covers basic equipment terminology. How to erect and dismantle single-tier and multi-tier scaffold and the proper use of hoisting equipment during erection is studied. Fall protection is also discussed and demonstrated.

ARL 112 Basic Blueprint Reading
1/2 Credit

This course introduces the organization of project plans and specifications. Discussions are held regarding the basics of site organization and building orientation including access to the project site. Floor plans and details are covered.

ARL 113 Concrete Consolidation/Patching
1/2 Credit

This course studies the basics of concrete placement and consolidation. Topics include ready mix types, strength, admixtures; weather and types of pours; height and width of wall; concrete vibrators and other tools; safe and effective pour set-up; tie hole patching basics, rubbing walls, and other post pour activities. The use of patching materials; scaffold erection safety; flat work tools; patching materials; ceiling work; grinders, chipping hammers and brushing machines; concrete curing; and safety measures are also covered in detail.

ARL 114 Forklift and Bobcat Training
1/2 Credit

This course studies the basics of operation, safety features, daily inspections, maintenance schedules and attachments. You are expected to identify and understand safety features, daily inspection points and safe operating procedures upon completion of this course.

ARL 115 Scissor Lift/Boom Lift Training
1/2 Credit

This course covers the basic operation and safety of different types of lifts. The proper use of fall protection systems on boom lifts, daily inspections and maintenance schedules are studied.

ARL 116 Hand, Power and Pneumatic Tools/Compaction Operations
1/2 Credit

This course studies how to identify and properly use basic hand, power and pneumatic tools. The use of hand tools versus power tools or pneumatic tools, care and maintenance, visual inspections, safety *(including GFCI requirements)* and the retirement tools are explored. OSHA standards required for operation of pneumatic tools and proper startup methods are covered. This course also teaches how to identify hand compaction equipment and choose the correct equipment for the job; fueling procedures; visual inspection of equipment, as well as what personal protective gear to wear. Proper compaction techniques are also reviewed.

ARL 117 Material Identification and Handling/Form Stripping
1/2 Credit

This course covers job site transportation of materials, as well as the identification of steel, lumber, masonry and drywall products. The handling and storage of epoxy products, caulking and sealants are discussed. Instruction on the use and interpretation of MSDS sheets is provided. Basic equipment, terminology and proper safety techniques *(including stripping walls, columns and suspended slab)* are studied. You learn to analyze systems and conditions, proper methods, clean up and impact of site/building conditions.

APPRENTICE-RELATED MASONRY

ARM 111 & 112 Masonry I *(Year I)*
4 Credits Each

This course introduces you to the masonry trade. The course covers the history of the trade, safety, tools and equipment, masonry math, mortar joints and applications, and brick materials layout. *The ability to lift 80 pounds and climb a 25 foot ladder is required.*

ARM 121 & 122 Masonry II *(Year Two)*
4 Credits Each

Prerequisite: Successful completion of ARM 111/112 or permission of coordinator

This course covers materials handling and storage, advanced laying techniques, control joints, corners and poles, flashing and lintels, elevated masonry, commercial and residential drawings, all-weather masonry, wall insulation, openings, columns, sample panels and prisms. Evaluation ends the second year of Masonry.

ARM 131 & 132 Masonry III
(Year Three)
4 Credits Each

Prerequisite: Successful completion of ARM 121/122 or permission of coordinator

This course covers safety panels and prisms, brick creativity, stone work, residential masonry, glass block, acid brick and refractories, structured glazed tile, repair and restoration, panel construction, welding and brick paving.

APPRENTICE-RELATED PLUMBING

ARP 111 & 112 Plumber and Pipefitter
(Year One)
4 Credits Each

This course is an introduction to the plumbing trade and covers topics including plumbing careers, trade regulations, and safe and effective use of tools. First aid, OSHA, plumbing math, related science and installation practices are studied as well. Beginning blueprint reading completes year one of Plumbing and Pipefitting. *The ability to lift 80 pounds and climb a 25 foot ladder is required.*

ARP 121 & 122 Plumber and Pipefitter
(Year Two)
4 Credits Each

Prerequisite: Successful completion of ARP 111/112 or permission of coordinator

This course teaches the specific aspects of water piping materials, additional plumbing math, sewage disposal, blueprint reading, shielded welding and water properties. Safety and rigging concepts ends the second year of this course.

ARP 131 & 132 Plumber and Pipefitter
(Year Three)
4 Credits Each

Prerequisite: Successful completion of ARP 121/122 or permission of coordinator

This course covers additional installation practices and trade math. It also explores fuel piping, gas codes studies and energy and temperature transfer. Aspects of water treatment and further blueprint reading completes this course.

ARP 141 & 142 Plumber and Pipefitter
(Year Four
4 Credits Each

Prerequisite: Successful completion of ARP 131/132 or permission of coordinator

This course covers aspects of drainage, fuel gas piping, sizing, waste systems, one- and two-pipe systems and hydraulics. Shop drawings, plumbing code definitions and portable water systems completes this course.

ARP 151 & 152 Plumber and Pipefitter
(Year Five)
4 Credits Each

Prerequisite: Successful completion of ARP 141/142 or permission of coordinator

This course teaches written and verbal communication, modern materials, advanced blueprint reading, code problems, code differences, code interpretation, contracts, tools, safety, inventory, medical gas, cross connection and leadership. American Disabilities Act *(ADA)* and how to apply OSHA standards completes this course.

APPRENTICE-RELATED SHEET METAL

ARS 111 & 112 Sheet Metal I
4 Credits Each

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 Each

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 Each

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 Each

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.

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 the basic design elements and principles of composition, form and visual perception. It focuses on becoming familiar with the formal elements used in two dimensional art and then using the principles of design to create compositions.

ART 132 Design II
3 Credits

This course studies the basic design elements and principles of composition, form and visual perception as they relate to three dimensional art. Utilizing the elements and principles of design, three dimensional projects are produced and analyzed.

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 students 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 painting. Oil or acrylic may be used.

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 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 anatomy, description of form and individual style.

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 Warren Tech)

AUM 101 Basic Mechanics/Safety
1 Credit

This course introduces to you 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.

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 improve-ments 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 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 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 does not provide flight training but provides a list of approved 141 flight schools.*

BIOLOGY

BIO 105 Science of Biology
4 Credits

Corequisite: Lab

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.

BIO 111 General College Biology I
5 Credits

Corequisite: Lab

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.

BIO 112 General College Biology II

5 Credits

Prerequisite: BIO 111

Corequisite: BIO 112 Lab

This course is a continuation of BIO 111. This course studies evolution, genetics, development, classification, structure, and function of plants and animals and ecology.

BIO 201 Human Anatomy/Physiology I
4 Credits

Prerequisite: Recent coursework in

Biology or Chemistry recommended

Corequisite: Lab

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 intergumentary, skeletal, muscular and nervous systems and senses. Mandatory lab work includes microscope work, observations and dissection.

BIO 203 Human Anatomy and Physiology II
4 Credits

Prerequisite: BIO 201

Corequisite: Lab

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. Mandatory lab work includes microscope work, observations and dissection.

BIO 205 Microbiology

4 Credits

Prerequisite: BIO 111 or 201 or permission of the instructor

Corequisite: Lab

This course is a survey of the biology of microorganisms. Major topics include microbial diversity, functional anatomy, biochemistry, genetics, ecology and disease. The laboratory allows you 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

Corequisite: Lab

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 lab 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)*

BIO 225 General Zoology
5 Credits

Prerequisite: BIO 105, 111 or permission of instructor

Corequisite: Lab

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

Corequisite: Lab

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 field experiences and may require some hiking.*

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.*

BREWING TECHNOLOGY

BRS 101 Brewing Science Technology Overview
4 Credits

This course provides fundamental knowledge about beer as a malt beverage and includes an overview of brewing, raw materials, processes and equipment. You have an opportunity to participate in brewing-related laboratory exercises. This course is recommended for those who may be investigating the Brewing Technology program or home brew enthusiasts who want to enhance their knowledge and skills.

BRS 201 Brewing and Malting
4 Credits

This course is a rigorous review of the procedures and processes practiced in malting and brewing operations.

BRS 202 Brewing Fermentation to Packaging
4 Credits

This course concentrates on fermentation, yeast microbiology, conditioning, filtration and packaging. It focuses on complex procedures and processes which are practiced in the industry.

BRS 240 Brewing, Laboratory Analysis
4 Credits

This course addresses advanced procedures for the laboratory analysis of beer. You master complex and in-depth microbiological and analytical chemical methods used in the laboratory.

BRS 260 Microbrewery Technology
4 Credits

This course is an in-depth study of microbrewery operations, including selected aspects of engineering and equipment and business and legal issues. After learning advanced brewing techniques, you will complete a capstone project designing and brewing a beer using labortory-scale equipment.

BRS 297 Brewery Internship
2 Credits

This internship consists of 90 contact hours during which time you have the opportunity to work as an intern in an operating brewery.

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: 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: letters, memoranda, reports, application letters and resumes. The fundamentals of business communication and international communication are 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 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 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
3 Credits

Corequisite: Computer Lab

This course is an introduction to touch keyboarding for those who have minimal or no keyboarding skills. It emphasizes learning the alphanumeric keyboard, proper technique, and speed and control.

BTE 102 Keyboarding Applications
3 Credits

Prerequisite: BTE 100 or minimum typing speed of 25 wam

Corequisite: Computer Lab

This course is designed for those who already have some keyboarding skills. Basic word processing functions are introduced so that you are able to produce letters, tables, memos and reports. Speed and accuracy are emphasized.

BTE 103 Keyboarding Skillbuilding I
3 Credits

Prerequisite: BTE 102

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 skillbuilding course designed to increase speed and improve accuracy in keyboarding on the PC through the use of proper techniques and concentrated effort.

BTE 108 Ten-Key by Touch *(PC 10-Key Pad)*
1 Credit

Corequisite: Computer Lab

This course introduces touch control of a PC ten-key pad. It 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 accurate data-entry skills on the PC, using data-entry, electronic spreadsheet and database computer software. Touch control of a PC ten-key pad is also introduced.

BTE 125 Procedures for Workplace 2000
3 Credits

Corequisite: BTE 100

This course prepares you for successful employment in today's business office. It focuses on communication skills, organizational skills, proper telephone technique, prioritization, resume writing, human relations, business ethics and professional growth.

BTE 126 Intermediate Office Procedures
3 Credits

Prerequisites: BTE 102, 125; CIS 125 and 155

Corequisite: Computer Lab

This course is a continuation of BTE 125, providing you with additional practice in creating and revising word processing and electronic spreadsheet documents commonly found in the workplace. It focuses on advanced procedures and computer skills needed for successful performance in the workplace. Topics include advanced document creation and editing, communication skills, machine transcription, resume writing, and job interview preparation.

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 transcription of medical reports, operative reports, discharge summaries, x-ray reports and other documents 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 will 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 225 Advanced Office Procedures
3 Credits

Prerequisites: BTE 104, 126 and 162

Corequisite: Computer Lab

This course is the capstone course for the Business Technology Associate of Applied Science degree. It provides you with an opportunity to demonstrate and perfect the computer skills, organizational skills, and communication skills required to secure employment and/or advancement in the workplace.

BTE 297 Cooperative Education/ Internship
3 Credits

Prerequisite: Permission from instructor

This course allows you 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 sheeting, 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, fireproof 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 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 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, veneer work 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

Prerequisite: CON 151

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
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 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.

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

Corequisite: CHE 211 Lab

Prerequisite: CHE 111 and 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

Corequisite: Lab

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. Lab demonstrates the above concepts and lab techniques.

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

Most of these courses require concurrent enrollment in computer lab sections.

CIS Computer Lab
1/3 -1 Credit per course

Most computer courses have a lab accompanying them. You must register for the accompanying lab. 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 112 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 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 quicktime 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.

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 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

Corequisite: Computer Lab

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.

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, LISTSERV, TELNET, FTP, GOPHERS and WWW.

CIS 188 HTML Scripting
2 Credits

Corequisite: Computer Lab; 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

Corequisite: Computer Lab

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, hierarchical and network database structure, query commands and command level programs. You examine current issues including model selection, usage, implementations and maintenance. *(Spring 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. *(Spring 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. *(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.

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

Most of these courses will require concurrent enrollment in computer lab sections.

CSC Computer Lab
1/3 -1 Credit per course

Most computer courses have a lab accompanying them. You must register for the accompanying lab. 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

Corequisite: Computer Lab

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 ptragmans, generic packages and low-level programming. **Registered trademark of U.S. Government (AJPO)*

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, arithmatics *(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; Carpentry; Electricity, Facility Management; 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, construction practices, management and supervision, scheduling, solar building techniques, insulation concerns and multi-unit construction are introduced.

CON 228 Cost Estimation
1-5 Credits

This course covers the estimation process, the role of the estimator, types of estimating, CSI Divisions, bid/contract documents, change order pricing, value engineering, design build projects and estimate compilation.

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 202 Aromatherapy
1/2 Credit

This course explores the wisdom of the ancient Egyptians and their use of oils. The use of essential oils as it pertains to health maintenance and the healing of particular diseases is studied. In addition, a select group of essential oils *(their origins, extraction, storage and usage)* are covered. A large number of essential oil remedies and their applications are utilized in this course.

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 205 Herbology
1/2 Credit

This course studies the use of herbs in health maintenance and in the healing of various diseases. Ancient wisdom from both Chinese and Egyptian cultures are explored. Pharmacokinetics, composition of herbs and their effect on the body's systems are studied. Where and how these remedies originated are covered as well as various groups of herbs, their habitat, harvesting, storage and usage.

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 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 ambivalances 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.

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 238 Advanced ECG Interpretation
1 Credit

This course presents the fundamental concepts of twelve lead ECG interpretation along with various advanced topics in electrocardiography such as electrical axis determination; differentiation of wide beat tachycardias; comprehensive discussion of blocks *(AV, hemi and bundle)*; pre- excitation syndrome; pacemakers and how they impact the ECG; and effects of injury, ischemia, and infarction on the ECG.

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, lifestyling, 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 247 Phlebotomy Certification
3 Credits

This comprehensive course covers OSHA regulations, various collection procedures and requirements for the numerous laboratory tests; phlebotomy, fingersticks and other collection techniques; problem solving; legal implications and other duties specifically associated with the health care industry i.e., home health care, physicians office, hospital, etc. *This course provides phlebotomy certification, not I.V. certification.*

CEN 248 Conflict Resolution in the Workplace
1/2 Credit

This course studies various conflicts that arise in the work setting. Effective conflict resolution including productive solutions, professional/personal self esteem issues and ways to reduce stress are explored. Effective skills and techniques used to resolve workplace conflicts are practiced.

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
1/2-1Credit

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 259 ACLS Recertification
1/2 Credit

This course is a recertification course for those of you with current ACLS cards. It covers rhythm recognition, cardiac drugs, cardiac monitors and case based scenarios.

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.

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 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 . 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 284 Home Health 2000
This symposium explores managed care and medicare as we move toward the millennium. The world of managed care, from the client to the federal watchdogs; to the impact on community and health standards is addressed. This course is for the experienced home health nurse. It evaluates your current skill level and transforms practice patterns including case management and assessment to benefit identified managed care needs. *This course is for current home health nurses only.*

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
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

Additional Criminal Justice courses are offered during the Summer session. Please check with CRJ advisor for specific offerings.

CRJ 102 Arrest and Control Techniques
2 Credits

Prerequisite: Successful completion of the application process for the academy

This course provides you with the knowledge, skills and abilities necessary to effectively maintain control of a suspect when making an arrest. Use of force options available to officers through verbal skills are stressed. Use of a baton is taught in accordance with P.O.S.T. standards.

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. *(Offered Fall, Spring & Summer)*

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. *(Spring & Summer only)*

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. *(Fall only)*

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. *(Spring only)*

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. *(Fall only)*

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. *(Fall only)*

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. *(Spring only)*

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. *(Fall & Summer)*

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. *(Fall & Summer only)*

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.

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. *(Fall only)*

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. *(Spring only)*

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.*(Fall only)*

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. *(Spring only)*

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. *(Fall only)*

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. *(Fall only)*

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. *(Spring only)*

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 is 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. *(Spring only)*

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. *(Fall only)*

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. *(Spring only)*

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. *(Spring only)*

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. *(Fall only)*

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. *(Spring & Summer)*

CRJ 240 Criminal Investigation
3 Credits

Prerequisite: CRJ 110

Criminal investigative methods and procedures are introduced and include preliminary through the follow up stages. *(Fall only)*

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. *(Spring only)*

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. *(Fall only)*

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. *(Spring only)*

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. *(Fall only)*

CRJ 288 Grant Writing for Non-Profit Organizations
2 Credits

This course focuses on the specifics of grant writing 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). *(Fall & Spring only)*

CRJ 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. *(Fall, Spring & Summer)*

DEVELOPMENTAL EDUCATION

EDU 091 Adaptive Introduction to Computers
1 Credit

This course is designed for those with disabilities. It introduces you to the world of computers, computer adaptations and computer terminologies.

EDU 093 Adaptive Word Processing
3 Credits
This course is designed for those with disabilities. It uses word processing applications to access computer adaptations. Adaptations vary depending on the disability and need.

EDU 094 Computer Access Center Usage
1 Credit

This is a follow-up class for those who have completed the introductory adaptive courses. This course provides a hands-on, project oriented focus.

EDU 096 Adaptive Spreadsheets
3 Credits

This course is designed for those with disabilities. It uses spreadsheet applications to access computer adaptations. Adaptations vary depending on the disability and need.

EARLY CHILDHOOD PROFESSIONS

ECP 101 Introduction to Early Childhood Professions
3 Credits

Corequisite: ECP 102

This course provides an introduction to early childhood professions. Topics include the eight key areas of professional knowledge: Child growth and development; nutrition and safety; Developmentally Appropriate Practices *(DAP)*; guidance; family and community relationships; diversity; professionalism; and administration and supervision.

Ages Addressed: Prenatal through age 8

ECP 102 Introduction to Early Childhood Education Lab Techniques
3 Credits

Prerequisite or Corequisite: ECP 101, TB test, a physical and FBI check are required

This course includes a classroom seminar and a placement in a child care setting. The supervised placement provides you with the opportunity to learn and observe children; to practice appropriate interactions and to develop effective guidance and management techniques.

Ages Addressed: Birth through age 8

ECP 104 Basics for Care Giver Professionals
1 Credit

This course provides a brief broad overview of the key areas of professional knowledge for beginning family child care and center based providers. Topic areas include growth and development; health, nutrition, child abuse, and safety; developmentally appropriate activities and environments; guidance; family and community relationships; professionalism; and business practices for family child care providers.

Ages Addressed: Birth through age 8

ECP 105 "Grand Beginnings" Infant and Toddler Training
1 Credit

This course provides an overview of quality care giving practices of infants and toddlers. Developmental differences and the resulting care giver responses to infants, mobile infants and toddlers are explored. Interaction and communication with parents is strongly emphasized.

Ages Addressed: Birth through age 3

ECP 111 Infant and Toddler Theory and Practice
3 Credits

This course presents an overview of theories, applications *(including observations)* and issues pertinent to infant and toddler development in group and/or family settings. State requirements for licensed settings and health, safety and nutrition issues are addressed.

Ages Addressed: Prenatal through age 3

ECP 112 Introduction to Infant/ Toddler Lab Techniques
3 Credits

Prerequisite or Corequisite: ECP 111
TB and HIB tests, a physical and finger printing are required

This course includes a classroom seminar and a placement in an infant and or toddler setting. The supervised placement provides you with the opportunity to learn to observe an infant and/or toddler, practice appropriate interactions and to develop effective guidance and nurturing techniques.

Ages Addressed: Birth through age 3

ECP 148 Guidance Strategies for Children
3 Credits

This course explores guidance theories, applications, goals, techniques, factors that influence expectations, classroom management issues and prosocial skills.

Ages Addressed: Birth through age 8

ECP 205 Nutrition and the Young Child
3 Credits

This course focuses on nutrition as a key factor for optimal growth and development of young children. Content includes nutrient knowledge, meal and snack planning, food program participation, food management and safety, appropriate nutrition activities and communication with families about nutrition.

Ages Addressed: Prenatal through age 8

ECP 206 Child, Family and Community
3 Credits

This course covers variations in family/ parenting patterns, and the effects of diverse cultural communities on the development of a child. Strategies to address the whole child as a member of a family and community are emphasized. The importance of inclusion of all family and cultural variations in delivery of care for children and families is a core component of this course.

ECP 210 First Start: Including Children with Disabilities
3 Credits

This course covers services for infants, toddlers and young children with disabilities and chronic conditions. The focus is on strategies, activities and adaptations that assist with the inclusion of children with disabilities and chronic conditions in child care programs.

Ages Addressed: Birth through age 8

ECP 214 Language and Cognition for Young Children
3 Credits

Prerequisite: ECP 227 and 238

This course examines theories of cognitive and language development as a framework for conceptualizing the way children acquire thinking skills. The content includes observing, planning, facilitating creative representation, and evaluating strategies within the context of play. Content includes the areas of language, science and math, problem solving and logical thinking.

Ages Addressed: Birth through age 8

ECP 215 Creativity and the Young Child
3 Credits

Prerequisite: ECP 238

This course provides an emphasis on encouraging and supporting creative self expression and problem solving skills in children. The content explores creative learning theories and research. It focuses on developmentally appropriate curriculum strategies in all developmental domains.

Ages Addressed: Birth through age 8

ECP 216 Administration: Human Relations for the Early Childhood Profession
3 Credits

Prerequisite: Two ECP "Methods" courses and ECP 238 or permission of instructor

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.

ECP 226 Administration of Early Childhood Care/Education Programs
3 Credits

Prerequisites: ECP 238 and 16 ECP credits

This course examines 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.

ECP 227 Curriculum Development: Methods and Techniques
3 Credits

Prerequisite: College level ASSET scores or comparable

This course provides an overview of early childhood curriculum development. The content includes processes for planning and implementing developmentally appropriate environments, materials and experiences and quality in early childhood programs.
Ages Addressed: Birth through age 8

ECP 238 Child Growth/Development
3 Credits

Prerequisite: ENG 121, acceptable reading and writing assessment scores, or permission of advisor

This course covers 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 emphasized. This course may be taken as PSY 238.
Ages Addressed: Prenatal through age 12

ECP 294 Professional Issues for Teachers
2 Credits

Prerequisite: You should be enrolled in the final courses of the Director's Certificate progression

This course is designed to give ,those of you ***without*** director experience, the opportunity to examine and assess your knowledge of the early childhood field. You will compile a professional portfolio that indicates competency in the key areas of: Child growth and development; health, nutrition and safety; developmentally appropriate practices; guidance in family and community relationships; diversity; advocacy, professionalism; and administration and supervision. *You should take this course as the capstone course of your Director's certificate.*

ECP 295 Professional Issues for Directors
3 Credits

Prerequisite: Director Qualified and experience directing a program

This seminar course is designed to provide individuals who are currently directors, a format to address some of the current issues and challenges of running a child care program. Staff turnover, staff development of DAP practices, setting and achieving quality standards, ethical dilemmas and advocacy in the community and at the state and national level are addressed.

ECONOMICS

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 to the completed job, preparation of material lists, job sheets and time schedules for various phases of construction. The National Electrical Code is emphasized in this course.

EIC 105 Basics of AC and DC Electricity
4 Credits

This course teaches resistance, current, voltage and power in AC and DC circuits; measurements; computations 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

The National Electrical Code and local code requirements for electrical installation are taught in this course. Chapters one through four of the National Electrical Code are covered.

EIC 135 National Electrical Code II
4 Credits

This course is a continuation of EIC 130. It covers chapters five through nine of the National Electrical Code, including hazardous locations; special occupancies, conditions and equipment.

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 180 Electrical Maintenance Techniques
4 Credits

This course introduces you to common electrical repairs, electrical systems, tools and test equipment. Topics include replacing or repairing such devices as receptacles, light fixtures and ballasts, circuit breakers, fuses and switches. Electrical safety and code applications are also discussed and practiced.

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.

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: EIC 130, 135 or 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: EIC 190 or 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; modem 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 Baleen 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 and Master CNE Part I
7 Credits

Prerequisites: Good computer background

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 Netware 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 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 Netware 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.

EDT 285 Novell Certified CNE and Master CNE Part IV
7 Credits

Prerequisite: EDT 270

This course prepares you for Novell Certified Netware 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 is 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
1 1/2 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 strategical 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
1 1/2 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.

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 you to gain experience and knowledge from on-the-job training. *Positions are non-paid.*

EMERGENCY MEDICAL SERVICES

EMS 127 CPR for Health Care Providers
1 Credit

This American Heart Association course is designed for those individuals who are interested in entering the health care profession. This course teaches you how to prevent heart disease and perform adult CPR *(one rescuer and two rescuers).* It also teaches you to perform both conscious and unconscious adult obstructed airway, child CPR, child obstructed air way, infant CPR and infant obstructed airway. *Upon completion of this course, you will be certified in the American Heart Association Health Care Provider Course level of CPR.*

EMS 217 First Responder
3 Credits

This course is designed for emergency services personnel who need medical training above the advanced first aid level but not as in depth as an emergency medical technician. This course is also a good introduction for those who may be interested in pursuing the emergency medical field. It teaches care for the injured or ill patient between the time an incident occurs and the paramedics arrive at the scene. Police officers, park rangers, life guards and fire fighters are likely candidates for this course. You are certified in the Health Care Provider CPR during this course. *Upon successful completion, you are qualified to take the Division of Fire Safety's state certification exam.*

EMS 227 Emergency Medical Technician—Basic

10 Credits

This course is designed to train individuals in order to become a certified Emergency Medical Technician at the basic level *(EMT-B)*. One must become an EMT-B prior to interviewing for paramedical school. This course teaches basic pre-hospital emergency care techniques in assessing, treating and choosing the proper mode of transportation for acutely injured or ill patients. This program is certified by the State of Colorado's EMS department to facilitate the initial EMT-B course. It exceeds the Department of Transportation's standards. *Upon successful completion, you are eligible to take the Colorado State EMS EMT-B certification exam.*

EMS 230 Pre-Hospital Intravenous *(IV)* Therapy
2 Credits

This course is designed for the EMT-B to upgrade his/her skills. You are taught the knowledge and skills needed to safely and efficiently initiate an intravenous line in the pre-hospital setting. The clinical portion of the course provides you with the opportunity to initiate IV's on actual patients.

EMS 237 Emergency Technician—Paramedic
24 Credits

This course is presented by both Centura St. Anthony's Hospital Institute of Emergency Medical Services and the Colorado Association of Paramedic Education *(C.A.P.E.)* programs. In order to apply for this program, you must have successfully completed the EMT-B course and have approximately one year of EMT-B first responding experience. This course teaches advanced pre-hospital emergency care techniques in assessing, treating and choosing the proper mode of transportation for acutely injured or ill patients. *Upon successful completion of this course, you are eligible to take the Colorado State EMS paramedical certification exam.*

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/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.

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 ASME, 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 ASME, 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 extraction's and file/ database manipulation are taught using construction methods of three-dimensional wire, three-dimensional thickness and solid models.

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.

ENGINEERING GRAPHICS TECHNOLOGY—ARCHITECTURAL

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.

ENGINEERING GRAPHICS TECHNOLOGY—MECHANICAL

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 apples 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.

ENGLISH

Writing and reading assessment is required before or during registration. The results are used to advise students into courses in which they are prepared to succeed.

ENG 100 Language and Composition Fundamentals
3 Credits

This course addresses words, sentences, paragraphs and the composing process. The fundamental concepts needed to become an effective writer, such as the grammar and punctuation, are studied. *An ASSET written score of 40+ and a reading score of 38+ is recommended.*

ENG 114 Career Skills: English
2 Credits

Corequisite: MAT 114

This course introduces numerical, communication and personal skills needed in the workplace. These skills are taught through simulated work activities.

ENG 121 English Composition I
3 Credits

Prerequisite: A grade of "C" or higher in ENG 100

This course emphasizes the planning, writing, editing and revising of compositions; and the development of critical/ logical thinking and reading skills. A minimum of five essays that stress analytical, evaluative, and persuasive/argumentative writing is required. *An ASSET written score of 43+ and a reading score of 41+ is recommended.*

ENG 122 English Composition II
3 Credits

Prerequisite: A grade of "C" or higher in ENG 121

This course provides you with the skills and experience needed to write papers involving research. You learn to summarize, synthesize, evaluate, analyze and interpret information from primary and secondary sources.

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 Playwriting
3 Credits

This course gives you an opportunity to learn and practice playwriting techniques, thereby improving creative writing skills. 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 091 ESL Communication
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 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 on the first day of 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 SCIENCE

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.

ENVIRONMENTAL SAFETY TECHNOLOGY

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 an 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.

FACILITY MANAGEMENT

FMS 100 Basic Power and Hand Tools
2 Credits

This course introduces you to application and safe use of common power and hand tools used in facilities maintenance. Power tools such as reciprocating and circular saws, screw guns, and electric and cordless drills are also discussed.

FMS 102 Facilities Job Skills I
2 Credits

This course is the first of a series which allows you to become successful in the facilities maintenance industry. An overview of the facilities maintenance industry and licensing, regulations, jurisdiction and certification are addressed. Other topics include goal setting, entry-level job skills, acceptable workplace behavior, interview skills, workplace ethics, sexual harassment, customer service and resume writing.

FMS 105 Building Systems I
4 Credits

This course familiarizes you with the structure of buildings and the systems contained within them. The building envelope; and the electrical, piping, HVAC and control systems as well as how these systems work together are covered. The Uniform Building Code is introduced. In addition, this course includes field trips.

FMS 108 Building Systems II
4 Credits

This course is a continuation of FMS 105. This course helps to bring all the building systems together. It introduces advanced control systems such as DDC and pneumatic controls. The Uniform Building Code is studied further. Other topics covered are indoor air quality, energy management and the importance of preventive maintenance.

FILM/VIDEO TECHNOLOGY

FVT 105 Video Production I
3 Credits

Corequisite: FVT 160

This course is a hands-on introduction to video production that must be taken with FVT 160. You work in groups 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/critiquing.

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

Prerequisites: FVT 105, 150 and 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

Prerequisites: 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

Prerequisites: 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.

FVT 208 Sound for Film and Video
3 Credits

Prerequisites: FVT 105, 150 and 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 pro tools)* 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

Prerequisites: FVT 105, 150 and 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 preproduction, production and post-production considerations.

FVT 215 Video Post Production II
3 Credits

Prerequisites: FVT 105, 150 and 160

Corequisites: FVT 200, 254 recommended

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 the United Media edit controller *(CMX style)* and our DV firewire digital nonlinear edit systems both in and out of class.

FVT 220 16mm Film Production
3 Credits

Prerequisites: FVT 105, 150, 153 and 160

Corequisite: FVT 209 recommended

This course examines the 16mm and super 16mm sync film timecode camera and audio recording techniques. The class works as a crew to aid in the production of FVT 270 film projects, professional productions and projects proposed by members of the class. Preproduction, production, shooting and directing are stressed while working with the Bolex, Eclair NPR (w/video assist), and Aaton XTR *(w/color video assist and timecode)* cameras and Nagra IV and timecode Portadat recorders.

FVT 254 Introduction to Digital Editing—Adobe Premiere
3 Credits

Prerequisites: CIS 110, FVT 105, 150 and 160

This course is an introduction to digital non-linear 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

Prerequisites: 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

Prerequisites: 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

Prerequisites: 105, 150, 155, 160, 200, 206, 209 and 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
3 Credits

Prerequisites: 105, 150, 160, 200, 215 and 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 your FVT 270 projects. *This course is restricted to Red Rocks FVT majors only.*

FVT 297 Cooperative Education
Prerequisites: FVT 105, 150, 160, 200 and 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
Prerequisites: 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.

FINE WOODWORKING

(Also see Carpentry.)

FIW 100 Fundamentals of Woodworking
4 Credits

This introductory course presents the manipulation of materials, drawings, hand and power tools, sharpening, joinery, assembly and preparation for and finishing to accomplish woodworking.

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

Prerequisite: FIW 100 or permission of instructor

This course explores the tradition of craftsmen 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 your project through researching old methods and examining current practices. The final outcome is demonstrated by using the new plane.

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 furnituremaker 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 explores the capacities of a lathe through spindle and faceplate turnings. The use of bead, cove, taper, cylindrical, v-cuts, proportion and curved line relationships are examined. Lathe components, tools and sharpening are explored.

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 gouge 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. It experiments with a representative sampling of colorations and surface finishes on a various types of woods using a selection of application techniques.

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 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 208 Furniture Repair
1-4 Credits

This course recognizes the need to repair and restore furniture and allows you to explore jigs, veneer repair, replacing broken pieces and reassembling reconditioned furniture. You are expected to provide furniture of sufficient complexity to challenge your abilities. Joinery, carving, stripping and refinishing are other topics covered in this course.

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, veneer work 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)*
5 Credits

Corequisite: FST 297-402

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
5 Credits

Prerequisites: FST 100, 297

Corequisite: FST 297-403

This course involves roughly 360 contact hours of 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, 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/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 *(Hazardous Materials I, II)*
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 you 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 Introduction 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 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 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.

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, 209 & 297or 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 preplanning 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
2 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. Four specific sections are taught: First Attack Incident Commander, Crew Supervisor, Incident Commander Multi-Resource, and Task Force/Strike Team Leader are covered. All four sections are certified through the Incident Command System under NIMS and recognized by the National Wildfire Coordinating Group. Fireline safety, size-up, incident planning, ordering, tactics, strategies and administrative duties are covered.

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 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 297-401 Internship
1-6 Credits

Prerequisite: Permission of Program advisor

This course must be arranged through the office of Job Placement/Cooperative Education and with approval of your advisor. This Internship allows you to gain experience and knowledge from on-the-job training. *Positions are non-paid.*

FST 297-402 Cooperative Fire Academy I**
4 Credits

Corequisite: FST 100

This course is a drill ground program where hands-on practice of topics covered in FST 100 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 297-403 Cooperative Fire Academy II
4 Credits

Corequisite: FST 101

This course is a drill ground program where hands-on practice of topics covered in FST 101 are utilized. This course is held at a local fire academy drill ground.

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. This course may not transfer to a four-year institution.

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. Grammar is studied in detail as well as the use of present-tense, past-tense and the immediate future-tense. The course also broadens your understanding of the culture, history and customs of French-speaking people.

FRE 112 Foreign Language II
5 Credits

Prerequisite: FRE 111 or permission of instructor

This course is a continuation of FRE 111. It is designed to further develop principles of grammar and syntax, reading and writing, correct pronunciation and rudimentary conversation. Grammar rules are studied in detail as well as all tenses learned in FRE 111. Other simple and compound tenses are learned. This course continues to study the culture, history and customs of French-speaking people.

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 the language. The study of geography, history, culture and French literature continues in detail.

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

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.

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 lab.

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 climactic 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. *This course may not transfer to a four-year institution.*

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. *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.

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 enables you to 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 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.

HEO 141 Medical Office II
4 Credits

Prerequisite: HEO 140
Corequisite: BTE 102

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.

HEO 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.

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 297-401 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)*

HEO 297-402 Medical Office Internship
3 Credits

Prerequisite: Permission of instructor

This course allows you to gain work experience from on-the-job training. *(135 hour 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 United States 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 United States 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 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, Teotihuccan 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 119 Early Christian Literature
3 Credits

This course surveys the literature of the early Christian era, from its inception to approximately 150 C.E. The New Testament as well as selected non-canonical writings from this period are examined. The course focuses on the interpretation of these texts in light of the cultural milieu from which they arose. Particular attention is paid to the influence of ancient literary conventions upon the Christian writers of this time.

HUM 121 Survey of Humanities I
3 Credits

Through a study of the visual arts, literature, drama, music and philosophy of early civilizations, Greek and Roman antiquity and Christian eras, this course introduces you to the history of ideas in Western Cultures. It emphasizes 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 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 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

The prerequisite for all literature courses is an ASSET reading score of 41+ and Written score of 43+.

LIT 115 Introduction to Literature
3 Credits

This course provides an overview of literature including fiction, 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 short fiction. Critical thinking, discussion and writing about short stories enhances perceptive reading skills and heightens the awareness of the human condition.

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. Critical thinking, discussion and writing about poetry enhances perceptive reading skills and heightens the awareness of the human condition.

LIT 127 Study of the Novel
3 Credits

This course focuses on careful reading and interpretation of selected novels representing types and periods of literature. It examines formal as well as thematic elements of longer fiction. Critical thinking, discussion and writing about novels enhances perceptive reading skills and heightens the awareness of the human condition.

LIT 201 Masterpieces of Literature I
3 Credits

This course examines significant writings in world literature from the Ancients through the Renaissance. It emphasizes careful reading and understanding of the works and their cultural backgrounds. Critical thinking, discussion and writing about the literature enhances perceptive reading skills and heightens the awareness of the human condition.

LIT 202 Masterpieces of Literature II
3 Credits

This course examines significant writings in world literature from the Enlightenment through the present. It emphasizes careful reading and understanding of the works and their cultural backgrounds. Critical thinking, discussion and writing about the literature enhances perceptive reading skills and heightens the awareness of the human condition

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 through 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 through 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. You will have an opportunity to study Shakespeare's poetry and several of his plays.

LIT 246 The Literature of Women
3 Credits

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 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 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 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 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. This course is accepted at four-year institutions provided that you complete the prerequisites *(i.e. ACC 121, ACC 122, BUS 226 and ECO 201 or ECO 202)* and have sophomore standing before enrolling in MAN 226.

MAN 239 Business Policies
3 Credits

Corequisite: MAN 240

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 and 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

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 business and the individual consumer. This course is accepted at four-year institutions provided that you complete the prerequisites *(i.e. ACC 121, ACC 122, BUS 226 and ECO 201 or ECO 202)* and have sophomore standing before enrolling in MAR 216.

MATHEMATICS

MAT 031 Introduction to Math—Arithmetic
1Credit

This course offers a self-paced competency based review of basic math skills. Topics include fundamental operations involving integers, problems involving prime factoring of integers and an introduction to equality and inequality symbols.

MAT 032 Introduction to Math—Fractions
1 Credit

This course offers a self-paced competency based review of basic math skills. Topics include fundamental operations involving fractions and decimals; and problems involving ratios, proportions and percents.

MAT 033 Introduction to Math—Variables
1 Credit

This course offers a self-paced competency based review of basic math skills. Topics include fundamental operations involving exponents, square roots and radicals; and problems involving variables, algebraic manipulation of variables and applications.

MAT 034 Introduction to Math—Equations
1 Credit

This course offers a self-paced competency based review of basic math skills. Topics include solving linear equations, linear inequalities and applications.

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 114 Workplace Literacy
2 Credits

Corequisite: MAT 114

This course introduces numerical, communication and personal skills needed in the workplace. It teaches these skills through simulated work activities.

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, measurements, 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 with a grade of C or better, or the equivalent

Requirement: A graphing calculator

This course introduces calculus and analytic geometry with an emphasis on applications designed for business, life science and/or social science majors. Topics include limits, continuity, derivatives and integrals of 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 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, indefinite and definite integrals and applications of integrals.

MAT 202 Calculus II
5 Credits

Prerequisite: MAT 201 with a grade of C or better or equivalent

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 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 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 continuation 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.

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 administrating, 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 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 203 Natural Resource Management
3 Credits

Prerequisites: PAR 102

This course introduces various scientific disciplines and complex issues associated with natural resource management. Ecosystem management, wildlife management, plant ecology, agricultural management, career planning, public land acquisition, visitor use, natural resource law enforcement, and public policy are introduced and discussed in detail.

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 218 Outdoor Leadership
3 Credits

This course is an introduction to the development, acquisition and application of outdoor leadership skills and knowledge. You are exposed to the latest information, philosophy, and techniques necessary to safely conduct outdoor programs and expeditions as an outdoor leader. Skills are applied under actual field conditions. Emphasis is on minimum impact camping, wilderness ecology, judgement, decision making, group dynamics and trip logistics. These skills enhance the effectiveness of you as a professional outdoor leader.

PAR 230 Park Ranger Law Enforcement Training
3 Credits

Prerequisites: PAR 102 or recent seasonal park employment or permission of the instructor

This course is an intensive academy for non-armed Park Rangers who work in local government parks and open space districts. The focus is on ranger safety, regulation enforcement, incident command, limits of authority, visitor contact, communications, and situational co ntrol techniques. Topics vary depending upon the need.

PAR 235 Park Ranger Skills Seminar
1-2 Credits

This is a skills seminar that presents necessary information regarding specialized training related to the park ranger field. Handling of livestock, fence design *(building and repair)*, vehicle driving, park maintenance, budgeting and planning and trail design construction and maintenance are some of the topics that may be covered. This is a hands-on course for the development and application of skills.

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
1-3 Credits

Prerequisite: PAR 102

This course is designed to give you realistic work experience in the field. All work is supervised by park rangers currently employed by land management agencies at various levels of government. Supervisors ensure that your participation is in relevant field work and that your performance is to the standards expected of employees of the agencies in which the internship occurs..

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, know-ledge, 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 119 Early Christian Literature
3 Credits

This course surveys the literature of the early Christian era, from its inception to approximately 150 C.E. The New Testament as well as selected non-canonical writings from this period are examined. The course focuses on the interpretation of these texts in light of the cultural milieu from which they arose. Particular attention is paid to the influence of ancient literary conventions upon the Christian writers of this time.

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.

Students participating in this course must go through a mandatory three-hour orientation. Upon completion of the orientation, students arrange their own hours of participation to met the course requirements. To complete the orientation, students must purchase the Fitness Education Center manual in the Bookstore and wear appropriate exercise clothes and shoes.

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.

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 Outdoors person*
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.

PHYSICIAN ASSISTANT
(Approval Pending)

PAP 200 Biochemistry and Cell Biology
3 Credits

Prerequisite: 10 credits of chemistry

This course introduces some of the major topics in modern biochemistry, cell biology and human genetics. The chemistry of proteins, carbohydrates, lipids and nucleic acids are studied. How these components function and are involved in basic metabolic processes such as cellular respiration, lipid metabolism, protein synthesis, and DNA replication. The basic conceptual background is provided to allow you to understand disease mechanisms, clinical laboratory tests and drug effects.

PAP 203 Health Care Issue I
2 Credits

This is a two-part course in which the Physician Assistant's responsibilities and functions within a variety of health care delivery systems *(HMO, private practice, etc.)* are covered. The relationship between the Physician Assistant and the physician and other health care providers as well as relevant legal and ethical issues are included.

PAP 204 Health Care Issues II
2 Credits

This course is a continuation of PAP 203. It emphasizes quality assurance, interpretation of medical literature and research and the future roles of the Physician Assistant.

PAP 205 Human Anatomy and Development
3 Credits

This course presents functional and applied anatomy as it relates to common clinical findings. The object of this course is to provide you with a solid understanding of the structure of the human body, with emphasis on normal versus abnormal findings. Some of the areas covered include: musculoskeletal, nervous, cardiovascular, urinary, respiratory, digestive and reproductive systems. Teaching methods include cadaver prosections, lectures and audiovisual aides.

PAP 207 Health Promotion
3 Credits

This course addresses factors influencing values and decisions which have an impact on the health behavior of individuals and communities such as theories on the behavioral and social deterrents of health and illness; risk factor identification, lifestyle factors; human sexuality; drug and alcohol use; preventive therapeutic agents or techniques; and incidence statistics for patient groups at risk. Counseling and teaching skills are included to help patients modify their attitudes and behavior to a more healthful pattern.

PAP 210 Human Physiology I
3 Credits

Prerequisite: PAP 200

This course provides you with a solid knowledge of the function of the human body, while paying close attention to clinically significant areas. Through lectures and examinations the following subjects are covered: functional organization of the human body, membrane physiology, nerve and muscle tissue, the nervous system *(general principles and the senses)*, the cardiovascular system and the lymphatic system.

PAP 211 Human Physiology II
3 Credits

Prerequisite: PAP 210

This course is a continuation of PAP 210, with emphasis on the following topics: immune system, respiration, digestive system, the kidney and fluid compartments, metabolism and temperature regulation, endocrinology and reproduction.

PAP 220 History and Physical Assessment
2 Credits

This course presents techniques of interviewing and eliciting a medical history, physical exam by body systems, information organization, as well as written and hands-on assessments.

PAP 221 Clinical Management I
2 Credits

Prerequisites: PAP 220
Corequisites: PAP 235 and 230

This course allows you to receive practical experience in taking a comprehensive patient history, performing a complete physical examination and medical records maintenance. Development of patient care plans including health promotion, nutrition, and disease management are addressed. Pertinent laboratory medicine is covered. When appropriate, this course coordinates with both PAP 235 and PAP 230. Interactive learning tools are used in addition to the lecture format.

PAP 222 Clinical Management II
1 Credit

Prerequisite: PAP 221

This course is a continuation of PAP 221 and emphasizes diagnosis and management of medical care. Interviewing, examination skills and laboratory skills are further refined through interactive experiences.

PAP 230 Drug Therapy I
4 Credits

Prerequisites: PAP 200, 210 and 211
Corequisites: PAP 221 and 235

This course covers drug information principles including pharmacology, pharmacokinetics, and pharmacodynamics. Drug therapy and management including appropriate uses of medications, contraindications, adverse reactions and interactions with other drugs are studied. The format of this course is designed so that when appropriate, PAP 221and PAP 235 coordinate with this course utilizing such learning tools as case studies, visual data and interactive projects.

PAP 231 Drug Therapy II
1 Credit

Prerequisites: PAP 221, 230 and 235
Corequisite: PAP 236

This course is a continuation of PAP 230. Various drug therapy principles are studied in such areas as: the endocrine, and musculoskeletal systems. Applicable pharmacology, pharmacokinetics, and pharmacodynamics are covered. The format of this course is designed so that when appropriate, PAP 221and PAP 235 meet with this course utilizing such learning tools as case studies, visual data and interactive projects.

PAP 235 Disease Processes I
2 Credits

Corequisite: PAP 231

This course focuses on the pathophysiology and the pertinent microbiology of disease processes. Areas of study include infectious diseases, oncology gastrointestinal tract as well as the following systems: pulmonary, renal, cardiovascular, blood, immune and reproductive. The format of this course is designed so that when appropriate, PAP 221/PAP 230 coordinate with this course utilizing such learning tools as case studies, visual data lab opportunities, etc.

PAP 236 Disease Processes II
2 Credits

Prerequisite: PAP 235

Corequisite: PAP 231

This course is a continuation of PAP 235. This course covers the pathophysiology of the disease process in the endocrine, nervous, immune and musculoskeletal systems. When applicable this course coordinates with PAP 231, incorporating such tools as case studies, visual data, and lab opportunities.

PAP 240 Behavioral Science in Primary Care
3 Credits

Prerequisites: 6 credits of Psychology or Social Science electives

This course provides you with the opportunity to explore the relationship between organic processes and psycho/social issues in the medical setting through lecture, discussion, role playing and demonstration. Interviewing and communication styles are discussed. Normal and psychopathological functioning including major psychiatric disorders, mood and anxiety disorders, substance abuse, psychosis and personality disorders are examined. Treatment techniques including cognitive, behavioral and interpersonal forms of psychotherapy. Psychopharmacological agents such as anxiolytics, antidepressants, mood stabilizers and neuroleptics are presented.

PHYSICS

PHY 105 Conceptual Physics
4 Credits

Corequisite: Lab

This course studies mechanics, heat, properties of matter, electricity and magnetism, light and modern physics.

PHY 111 Physics: Algebra-based I
5 Credits

Prerequisite: MAT 121
Corequisite: Lab

This course studies mechanics and heat.

PHY 112 Physics: Algebra-based II
5 Credits

Prerequisite: PHY 111 or permission of instructor
Corequisite: Lab

This course enables you to learn about electricity and magnetism, light and modern physics.

PHY 211 Physics: Calculus-based I
5 Credits

Prerequisite: MAT 201
Corequisite: Lab

This course explores mechanics, heat and wave motion.

PHY 212 Physics: Calculus-based II
5 Credits

Prerequisite: PHY 211 or permission of instructor
Corequisite: Lab

This course covers wave motion, electricity, magnetism and light.

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 105 Piping Skills
4 Credits

This course studies the installation of common piping materials in plumbing and HVAC/R systems. Pipe math, terminology, common piping materials and application, figuring offsets, and common pipe joints are also covered. Shop projects including pipe support and hanging, center to center measurements and a variety of pipe joining methods are explored.

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.

PLU 200 Backflow Prevention Certification
3 Credits

This course is designed to prepare you with information and procedures for the development, implementation, maintenance and enforcement of backflow prevention practices pursuant to federal and state regulation pertaining to cross-connection control. *The information in this course also prepares you to take the backflow, cross-connection test.*

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
4 Credits

Prerequisite: PLU 106 or permission of instructor

The information in this course is designed to assist you in passing the plumbing licensing examinations for the State of Colorado. This course reviews and interprets the Uniform Plumbing Code and the Colorado State Plumbing code. The course also reviews the need for enforcement of the Uniform Plumbing Code.

PLU 225 Technical Project
6 Credits

This course enables students to participates 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.

PLU 255 Medical Gas
2 Credits

This course pursues medical gas certification and brazing testing. Speciality training includes anesthesia, respiratory, and inhalation therapies. Medical gas system components, medical gas compressors, and NFPA standards are examined.

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 105 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.

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

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: PSY 101 or 102 recommended

This course is a survey of human development from conception to death emphasizing physical, cognitive, and psychosocial factors. Special emphasis is put on the development of the personal self across the lifespan.

PSY 237 Assertiveness Training
1-3 Credits

This course teaches the awareness of individual rights and needs in interpersonal relationships.

PSY 238 Child Growth and 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. The concept of the whole child and how adults can provide a supportive environment for children is also emphasized. *This course is co-scheduled with ECP 110 and may be taken as ECP 110 or PSY 238 but not both.*

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 courses 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 radio-graphic 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 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.

REAL ESTATE

REE 100 Real Estate Broker's Course
11 Credits

This course satisfies the education required for a real estate broker's license. It consists of the following modules: real estate practice and law, Colorado real estate contracts and regulations, recordkeeping and trust accounts, current legal issues, closings and practical applications.

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 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, directing 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, income 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. *(Fall only)*

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. *(Fall only)*

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. *(Fall only)*

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. *(Spring only)*

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. *(Spring only)*

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. *(Fall only)*

SBM 290 Special Topics
1 Credit

This course covers current topics of interest to small businesses. *(Spring only)*

SOCIOLOGY

SOC 100 Human Relations in Business
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 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 moments 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

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. *(Fall only)*

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. *(Fall only)*

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. *(Spring only)*

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. This course may not transfer to a four-year institution.

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 is a continuation of SPA 111. It is designed to further develop principles of grammar and syntax, reading and writing, correct pronunciation and rudimentary conversation. Grammar rules are studied in detail as well as all tenses learned in SPA 111. Other simple and compound tenses are learned. This course continues to study the culture, history and customs of Spanish-speaking people.

SPA 211 Foreign Language III
3 Credits

Prerequisite: SPA 112 or permission of instructor

This course is a continuation of SPA 112. This course continues the development of increased functional proficiency in listening, speaking, reading and writing the language. The study of geography, history, culture and Spanish literature continues in detail. The course is conducted primarily in Spanish.

SPA 212 Foreign Language IV
3 Credits

Prerequisite: SPA 211 or permission of instructor

This course continues the development of increased proficiency in grammar and syntax, listening, speaking, reading and writing the language. The study of geography, history, culture and Spanish literature continues in detail. The course is conducted primarily in Spanish.

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

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 100 Technical Theatre Lab
1-3 Credits

This course provides safety training for working with equipment used in THE 116, as well as hands-on experience in one or all of the following areas: stage lighting, set construction, stage properties, costuming and makeup.

THE 105 Introduction to Theatre Arts
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

Prerequisite: THE 105 is recommended

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 and THE 105 is strongly advised

This course continues to explore basic acting techniques and approaches, including scene study, improvisation and intermediate 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 and stage lighting.

THE 131 Theatre Production I
3 Credits

Prerequisites: THE 111 and/or 112 or permission of instructor

This course allows you to put into practice the theories of theatre production. Participation in set construction, scenic artistry, costuming, lighting, sound, acting, stage managing and administration is available.

THE 132 Theatre Production II
3 Credits

This course further explores the theories of theatre production. Participation in set construction, scenic artistry, 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 Beginning Improvisation
1 Credit

This course concentrates on learning improvisation skills for performance and character development. Emphasis is placed on "Second City" style of improvisation.

THE 142 Improvisation II
1 Credit

Prerequisite: THE 141, THE 111 or permission of instructor

This course is continuation of THE 141. Exercises are more advanced and difficult. The level of instruction is appropriate for experienced and/or advanced actors.

THE 143 Basic Acting Technique
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, THE 111 or permission of instructor

This course emphasizes the Stanislavski approach. Acting skills through advanced material, including avant garde and classical are explored.

THE 145 Audition Techniques
1 Credit

Prerequisite: THE 143 or THE 144, or THE 111 or permission of instructor

This course focuses on the selection and preparation of audition materials, including prepared monologues, cold readings and improvisation techniques. The basics of resume preparation are also 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 stage 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 kinesis. 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 structure and formulate a systematized series of vocal and whole body exercises to develop and enhance your self-confidence and vocal instrument through in-class performances and variety show presentations.

THE 211 Development of Theatre I
3 Credits

This course surveys the history and evolution of drama from Ancient Greece to the Renaissance, emphasizing all aspects of the art from period values to analysis of dramatic literature and performance.

THE 212 Development of Theatre II
3 Credits

This course surveys the history and evolution of drama from the Renaissance to the present, emphasizing all aspects of the art 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 playwriting 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 Theatre Production III
3 Credits

This course allows you to continue to put into practice the theories of theatre production. Participation in set construction, scenic artistry, costuming, lighting, sound, acting, stage managing and administration is available.

THE 232 Theatre Production IV
3 Credits

This course allows you to continue to put into practice the theories of theatre production. Participation in set construction, scenic artistry, costuming, lighting, sound, acting, stage managing and administration is available.

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

Prerequisite: THE 170 or permission of instructor

This course introduces you to dance within the context of musical theatre. You practice non-verbal communication and expressive movement techniques.

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 respon-sibility, 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 hand tools, 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 124 Water Certification Review for Class C & D
2 Credits

This course helps prepare you for the operators certification test in water at the C or D level. Topics include water principles, mathematics, hydraulics, water filtration, Colorado Primary Drinking Water Regulations, conventional treatment of water, disinfection, pumps, safety, housekeeping and laboratory analysis.

WQM 125 Water-Wastewater Certification Review for Class C & D
2 Credits

This course helps you prepare for the operators certification test in wastewater at the C or D level. Topics include wastewater principles, mathematics, hydraulics, conventional treatment of wastewater, wastewater sedimentation, Colorado Water Quality Control Act, biological treatment of wastewater, effluent standard for wastewater, sludge handling and disposal, disinfection, pumps, safety, 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, street work, 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, cloroform 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 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.

For Your Information

Seventy-two percent of all Colorado college freshmen and sophmores are in community colleges.

"Starting college at Red Rocks saved me tons of money and didn't throw me into the university setting right away. Red Rocks' small class size just made for a better adjustment."

—David Staloch
CSM Pre-Engineering transfer student

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, sign a "Directory Restriction" form in the Admissions Office. This will remain in effect until you are no longer enrolled or you cancel the request for nondisclosure.

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 Office of Student Life 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 employ-ment; 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 Office of Student Life and Human Resources Office.

Referral Sources

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

The College:

•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." HOTLINE, National Institute of Drug Abuse (NIDA), 1-800-662-HELP.

Directory

I was so excited about going back to school because of how my advisors took an interest in helping me. I have had nothing but good experiences from one teacher to the next. My instructors have made me feel extremely comfortable. . . that I could learn and accomplish something.

—Daniel Casteel
Commercial Food Service
Management student

State Board for Community Colleges and Occupational Education *(SBCCOE)*

Raymond Wilder, Chair
Glenda Barry, Vice Chair
Rolf Anderson
Susan Ayres Davies
John Frew
Julianne Haefeli
William Hornby
Kristy Schloss
Ralph Torres

Colorado Community College and Occupational Education System *(CCCOES)*

Dr. Jerome F. Wartgow, President

Red Rocks Community College Advisory Council

Dan Leach, Chair
Greg Martinez, Vice Chair
Holli Baumunk
Wes Haun
Ken Robke
Dr. John Trefny

Red Rocks Community College President's Leadership Team *(PLT)*

Dorothy Horrell, President
Sam Allen, Executive Director of Red Rocks Institute
Roberta Bhasin, Executive Director of Communication, Recruiting and Outreach
Linda Bowman, Vice President of Arts and Business
Jeff Olson, Executive Director of Human Resources
Cliff Richardson, Vice President of Administrative Services
Larry Spraggs, Vice President of Science and Technology
Randy VanWagoner, Dean of Educational Support Services

Administrators

ALLEN, Sam
Executive Director, Red Rocks Institute. M.B.A., University of Wyoming, 1986

AUSTIN, Robert
Director, Enrollment Services/Registrar. M.Ed, Eastern New Mexico University, 1995; B.S. Eastern New Mexico University, 1989.

BHASIN, Roberta
Executive Director, Communication, Recruiting and Outreach. M.B.A., Pepperdine University, 1980; B.A., University of Washington, 1968

BOWMAN, Linda
Vice President, Arts and Business. Ph.D., University of Colorado, 1995; M.P.A., University of Colorado, 1992; M.A., University of New Orleans, 1981; B.A., University of South Alabama, 1973

CARLSON, Nancy
Director, Student Employment Services. M.A., University of Colorado at Denver, 1997; B.A., San Diego State University, 1972; A.A., Grossmont Junior College, 1969

CRAM, Caryll
Director, Colorado Institute for Gender Equity in Vocational Education. M.A., University of Northern Colorado, 1970; M.S., University of Minnesota, 1966; B.S., University of Minnesota, 1964

DeREYES, Diane
Director, Financial Aid. M.S., University of Colorado at Denver, 1993; B.S. University of Southern California, 1982

GEARY, Wesley
Director, Business Services. M.S., North Texas State University, 1981; B.B.A., North Texas State University, 1980

HEGEMAN, Diane
Associate Vice President of Instruction. M. Ed., Colorado State University, 1989; B. Ed., Colorado State University, 1980

HORRELL, Dorothy
President. Ph.D., Colorado State University, 1992; M.Ed., Colorado State University, 1978; B.S., Colorado State University, 1973

JONES, Jim
Director, Student Center. M.Ed., Texas Tech University, 1974; B.S., Texas Tech University, 1969; A.A., Schreiner College, 1966

MAEZ, Yvette
Director, Recruiting and Outreach. B.A., University of Northern Colorado, 1988

McNALLY DUNN, Molly
Coordinator, School-Age Child Care. B.A., St. Joseph College, 1971

REITER, Jayne
Director, Small Business Development Center. M.ed., Colorado State University, 1994; B.S., Regis University, 1993

RICHARDSON, Cliff
Vice President, Administrative Services. M.P.A., University of Colorado, 1987; B.S., Metropolitan State College, 1978

SANDQUIST, Theodore
Executive Director, Red Rocks Community College Foundation. B.A., Bowdoin College, 1959

SCHANTZ, Robert
Director, Recruiting and Outreach. M.Ed., Colorado State University, 1992; B.S., Metropolitan State College, 1977; A.A., Arapahoe Community College, 1976

SEEHUSEN, Vicky
Director, Computer Services. Ph.D., University of Colorado, 1996; M.B.A., Regis College, 1987; B.S., National College, 1981

SPRAGGS, Laurence
Vice President, Science and Technology. D.A., Idaho State University, 1980; M.S., Wayne State University, 1973; B.A., Wayne State University, 1970

SWAIN, Steven
Director, Physical Plant. M.P.A., University of Denver, 1984; B.S./B.A., University of Delaware, 1975

VAN WAGONER, Randall
Dean, Educational Support Services. M.A., University of Michigan, 1992; B.A. Oakland University, 1990

YOHE, Bennett
Associate Vice President of Instruction. Ph.D., Colorado State University, 1997; Ed.S., University of Iowa, 1974; M.A., University of Iowa, 1974; B.A., University of Iowa, 1971

ZELLER, Betsy
Director, Grants and Development. Ph.D., Colorado State University, 1988; M.A., University of Northern Colorado, 1975; B.A., Colorado State University, 1969

Professional Technical Staff

ANDERSON, Cindy
Academic Advisor/Counselor, Advising. M.A., University of Colorado at Denver, 1997; B.A., University of Colorado, 1975

AWONIJI, Beatrice
Coordinator, Computer Access Center/LARC. M.S., Southern Illinois University, 1988; B.S., Southern Illinois University, 1987

BENNETT, Monica
Coordinator, Weekend College. M.Ed., University College, 1985; B.Ed. O.L.M. College of Education, 1977

BENWARE, Cheryl
Grant Coordinator, Pathways. B.A., University of Colorado, 1969

CHEN, Shu
Library Lead. MLS, University of Texas at Austin, 1996; M.A. Southern Illinois University, 1992; B.A. Nanjing Normal University, Peoples Republic of China, 1982

CLAIRE, Virginia
Learning Development Center Lead, Arvada Campus. B.S., Regis University, 1987; A.S., Red Rocks Community College, 1985

COLLUM, Judy
Manager, Corporate Learning Center, The Red Rocks Institute. M.Ed., University of Oklahoma, 1972; B.S.Ed., University of Oklahoma, 1967

DEL PONTE, Renie
Coordinator, Health Careers Program. Dr. P.H., Loma Linda University, 1995; M.S., Slippery Rock University, 1987; BS., Colorado State University, 1985

DOPHEIDE, Viki
Financial Aid Advisor, Financial Aid. B.A., Fort Lewis College, 1992; A.A.S. Front Range Community College, 1989

GABEL, Sharon
Technologist, Learning and Development. M.A., University of Colorado, 1994; B.A. Kalamazoo College, 1984

GUNTHER, Maureen
Coordinator, School-to-Careers Education. A.A., Red Rocks Community College, 1983

HANLIN, Jeffrey
Self-Paced Education Lead/Mathematics/LARC. B.A., Metropolitan State College of Denver, 1988; A.A., Red Rocks Community College, 1977

HAWKINS, Richard
Director, Rocky Mountain Education Center. B.S., Indiana State University, 1979

HUGHES, Jennifer
Coordinator, Institutional Research and Analysis. M.S., Illinois State University, 1996; B.S., Nortthwestern University, 1995

HURR, Leslie
Coordinator, Special Populations. B.S., Colorado State University, 1990

IORIO, Todd
Multimedia Technology Coordinator

JACKSON, Nancy
Instructional Designer. Ph.D., University of Colorado, 1984; M.A., University of Colorado at Denver, 1978; B.A., University of Colorado, 1969

KNEPLEY, Susan
Manager, LARC/One to One, Telecourses. M.B.S., University of Colorado at Denver, 1996; M.Ed., University of Pittsburgh, 1969; B.A., Carnegie-Mellon University, 1968

KRONBERG, Andrea
Interpreter, Special Populations/LARC. B.A., Metropolitan State College of Denver, 1994; A.A.S., Front Range Community College, 1992

MACY, Dan
Educational Coordinator, Arvada Campus, M.A.,University of San Francisco, 1993; B.A., San Jose State University, 1991; A.A., Foothills College, 1980

Mc ALPINE, Kathie
Coordinator, Physician's Assistant Program. M.S., Harvard University, 1985; M. Ph. Harvard University, 1984; M.D., Howard, 1979; B.S., Boston University, 1975

MINDAK, Jean
Trainer, Corporate Learning Center, The Red Rocks Institute. M.A., St. Louis University, 1974; B.A., Fortbonne College, 1958

MOREY, Greg
Academic Advisor, Advising. B.S., Utah State University, 1985

O'NEILL, John
Telecommunications, Distance Learning/LARC. B.S. University of Wisconsin, 1982

PETERSON, Asheley
Educational Coordinator, Mountain Center. B.A., University of Colorado at Denver, 1994

PHELPS, Sandra
Classroom Scheduler, Instructional Services

RAKOCY, William
B.S., University of Texas, 1984

RAMOS, Catherine
Assistant Program Coordinator, School-Age Child Care.

RANUM, Brian
A.A.S., Red Rocks Community College, 1988

RUSSELL, Randy
ESL/International Student Programs Manager, Assessment Center. M.A., University of Colorado, 1989; B.A., Metropolitan State College of Denver, 1981

STEIN, Nancy
Self-Paced Education Lead, LARC. M.A., University of Northern Colorado, 1989; B.A., Metropolitan State College of Denver, 1987

VAHLSING, Kelley
Manager, Fitness Center. M.S., Colorado State University, 1995; B.S., Colorado State University, 1993

VASEY, Richard
Academic Advisor /Counselor, Advising. M.A. University of Colorado at Denver, 1997; B.S., University of Wyoming, 1993

VOORHEES, Alice
Coordinator, COBE, The Red Rocks Institute. M.A., Arizona State University, 1982; B.A., Moorhead State College, 1975

WERNER, Jeanette
Customer Service/Marketing Manager,Rocky Mountain Education Center. B.A., Colorado Christian College, 1992; A.A., Colorado Christian College, 1989

Faculty

ALEXANDER, James
Instructor, Criminal Justice. B.A., Central Washington State College, 1972

ANDERSON, Kathleen
Instructor, Psychology. M.A., University of Texas, 1972; B.S., University of Texas, 1969

ARNDT, Susan
Professor, Art. M.A., University of Northern Colorado, 1975; B.A., Colorado State University, 1969

ARNSPARGER, John
Professor, Accounting and Computer Information Systems. M.B.Ed., University of Colorado, 1972; B.B.A., Ohio University, 1968

ATKIN, Barbara
Instructor, Chemistry. Ph.D., University of California-Berkeley, 1971; M.A., University of California-Berkeley, 1981; B.A., Elmira College, 1960

ATKINSON, Laurie
Instructor, Computer Information Systems. M.S., University of Colorado, 1991; B.A., University of Colorado, 1986

BENSON-ROSSTON, Julie
Instructor, Speech. M.A., University of Montana, 1990; B.A., University of Minnesota, 1988

BERMAN, Marjorie
Instructor, History and Humanities. Ph.D., University of Colorado, 1980; M.A., University of Colorado, 1974; B.A., Case Western Reserve University, 1972

BISHOP, Mary
Instructor, Computer Information Systems. M.S., University of Colorado, 1992; B.S., University of Wyoming, 1985

BLACK, Timothy
Instructor, Criminal Justice. B.A., Western State College, 1965

BREECE, John
Instructor, Construction Technology. A.A.S., Red Rocks Community College, 1991; A.A.S./Electronics, Mercer County Community College, 1977; Licensed Master Plumber, State of Colorado

BROWN, J. David
Instructor, Sociology. Ph.D., University of Denver, 1991; M.A., University of Denver, 1988; B.S., Metropolitan State College of Denver, 1985

BRYANT, Linda
International Advisor, Admissions/Advising. M.A., University of Phoenix, 1992; B.A., Colorado Christian College, 1989; A.S., Red Rocks Community College, 1978

BURRUS, Peggy
Instructor, Business Technology. B.S. Oklahoma State University, 1975

CAMY, Ann
Instructor, English. M.A., University of Northern Colorado, 1969; B.A., University of Northern Colorado, 1963

CARUOLO, Wayne
Instructor, Computer Information Systems. M.A., Webster College, 1978; B.S., Norwich University, 1970

CONNOLE, Thomas
Librarian. M.A.L., University of Denver, 1974; M.A., University of Michigan, 1967; B.A., University of Colorado, 1966

DEWALD, Sherry
Instructor, Communications. M.A., University of South Dakota, 1977; B.A., University of Illinois, 1974

EDWARDS, D. Kerry
Instructor, Philosophy. Ph.D., Iliff School of Theology/University of Denver, 1989; M.A., Wycliffe College, Toronto School of Theology/University of Toronto, 1981; B.A., Roberts Wesleyan College, 1977

ELRICK, Donald
Instructor, Biology. Ph.D., University of Colorado, 1976; B.A., University of Colorado, 1965

FREENEY-HILTON, Mildred
Instructor, Sociology. M.Ph., Roosevelt University, 1974; M.A., Roosevelt University, 1973; B.A., Blackburn College, 1971

FREY, Norma
Instructor, Mathematics. M.A., Ohio State University, 1957; B.S., University of Nevada-Reno, 1954

GARROD, Candace
Instructor, Computer Information Systems. M.Ed., Colorado State University, 1992; B.Ed., Colorado State University, 1986

HERBERT, Nora
Instructor, Biology. Ph.D., University of California at Berkeley, 1990; A.B. University of California at Berkeley, 1983

HILTON, Craig
Master Instructor. Construction and Energy Technology. Licensed Master Plumber

INGRAM, Verne
Instructor, Accounting and Business. M.A. University of Phoenix, 1994; C.P.A., 1980; B.S., University of Idaho, 1964

INTRERY, Linda
Professor, Mathematics. M.B.S., University of Colorado, 1985; B.A., University of Northern Colorado, 1977

JAMRUSZKA-MENCHER, Pamela
Instructor, Communications, Speech and Theatre. M.F.A., University of Wisconsin, 1981; B.A., Montana State University, 1978

JOHNSON, Cheryl
Instructor, Accounting and Management. M.B.A., University of Colorado, 1990; Ph.D., University of Colorado, 1986; M.B.E., University of Colorado, 1977; B.S., Colorado State University, 1969

JORGENSEN, Colleen
Instructor, Mathematics. M.S., University of Colorado at Denver, 1987; B.A., University of Northern Colorado, 1974

JOY, Carla
Professor, History. M.A., University of Denver, 1969; A.B., Loretto Heights College, 1967

KAYE, Steven
Instructor, Biology. M.Ed., University of Hawaii, 1984; B.A., University of Hawaii, 1981

KRIZNAR, David
Instructor, Electronic Digital/Computer Technology. A.A.S., Red Rocks Community College, 1987

KUNIMUNE, Mark
Instructor, Emergency Medical Services. B.A., Prescott College, 1995

LAHEY, Frederic
Instructor, Film/Video Technology. Program Director AVID Education Center. M.F.A., Columbia University, 1984; B.A., Columbia University, 1978

LEVINE, Kent
Professor, Real Estate and Business Law. J.D., Drake University Law School, 1973; B.A., Western State College of Colorado, 1970

LUKAVITCH, Terri
Instructor, Criminal Justice. M.A., University of Northern Colorado, 1986; B.A., University of Northern Colorado, 1978

MARTEIN, Leonard
Instructor, Computer Information System Applications. DBA, University of Kentuky, 1981; MBE, University of Colorado, 1979; B.S. John Carroll University, 1971

MAXWELL, Thomas
Professor, Communications, English and Literature. M.A., University of Colorado at Denver, 1989; B.A., University of Colorado, 1967

MELCHER, Charles
Master Instructor, Electronic Digital/Computer Technology. B.S., Weber State College, 1965

NELMS, Michael
Instructor, Fire Science. A.A.S., Red Rocks Community College, 1988

NELSON, David
Professor, Geography, Humanities and Political Science. Ph.D., University of Denver, 1969; M.A., University of Denver, 1964; B.A., University of Denver, 1963

NELSON, Walter
Associate Professor, English and Literature. M.A., University of Missouri, 1971; B.A., California State College, Hayward, 1969

NIEHOFF, Thomas
Instructor, Mathematics. M.S., University of Colorado at Denver, 1991; B.S., University of Illinois, Champaign-Urbana, 1981; A.A., Florida Junior College at Jacksonville, 1977

NOLLES, Niki
Instructor, English. M.A., University of Nevada-Las Vegas, 1980; B.A., University of Nevada-Las Vegas, 1976

OLSON, Scott
Instructor, Environmental Compliance Technology. B.S., University of California, Los Angeles, 1985

ORTEGA, Judith
Counselor, Career Resource Center. M.A., University of Northern Colorado, 1980; B.A., Loretto Heights College, 1974; A.A., Red Rocks Community College, 1971

PADILLA, Francisco
Professor, Spanish. M.A., Regis University, 1992; B.A., University of Colorado, 1973

REEVES, Richard
Instructor, Mathematics. M.S., University of Colorado at Denver, 1992; B.A., University of Colorado at Denver, 1990

REEVES, Terry
Instructor, Mathematics. M.S., University of Colorado at Denver, 1992; B.S., Oklahoma State University, 1989

ROBERTSON, James
Instructor, Art. M.F.A., Brigham Young University, 1990; B.A., Brigham Young University, 1981

RUDDEN, Michael
Master Instructor, Welding Fabrication Technology.

SAPIENZA, Leonard
Professor, English and Literature. M.A., University of Phoenix, Denver, 1991; B.A., Colorado State College, 1959

SCHREIBMAN, Walter
Professor, Psychology. M.S., Purdue University, 1969; B.A., University of Colorado, 1967

SMITH, Charles
Instructor, Mathematics. M.A., California State Polytechnic College, San Luis Obispo, 1969; B.S., California State Polytechnic College, San Luis Obispo, 1968

SMITH, Marilyn
Instructor, English. M.A., University of Washington, 1977; B.A., University of Colorado, 1975; A.A., El Paso Community College, 1973

SOMERS, Cynthia
Instructor, Chemistry. Ph.D., University of Washington, 1989; B.A., University of California, 1983

SPERLING, John
Master Instructor, Construction Technology–Fine Woodworking/ Carpentry. B.S., University of Colorado, 1970; Real Estate Broker's License

SPILLYARDS, Joey
Instructor, Engineering Graphics Technology. B.E., Colorado State University, 1987

STANESCO, John
Professor, Geology. M.A., University of Northern Colorado, 1974; B.A., Regis College, 1968

STARKS, Michael
Instructor, Physics. M.A. Indiana University, 1994; B.S., State University of New York at Stony Brook,

STELLICK, Wayne
M.A. Ed., University of Phoenix, 1996; B.S., Colorado State University, 1990

STEVENS, Douglas
Instructor, Electronic Digital/Computer Technology.

THATCHER, Gene *(Rich)*
Instructor, Construction Technology. Licensed Master Electrician

VAIANA, Michael
Associate Professor, Developmental Studies. M.A., Colorado State University, 1973; B.A., Colorado State University, 1970

WALKER, Art
Instructor, Computer Information Systems–UNIX. B.S., Colorado State University, 1976

WELLE, Thomas
B.A., University of Colorado, 1993; A.S., Monterey Peninsula College, 1985

WELLS, Merrilla
Instructor, Computer Information Systems. M.B.A., Indiana University, 1980; B.S. Indiana University, 1979

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.

Classified Staff

ANDERSON, John
Media Specialist IV, LARC/Learning Materials Center

ARRIETA, Juan
Groundskeeper I, Physical Plant

BAKER, Janet
Office Manager I, Instruction/Science and Technology

BANZHAF, Jane
Administrative Assistant II, Emergency Medical Services

BANA, Ronald
Plant Maintenance Supervisor I, Physical Plant

BENEDETTO, Suzette
Administrative Assistant II, Admissions

BILLINGS, Laura
Administrative Assistant II, Educational Support Services

BLACKER, Marilyn
Library Technician III, LARC/Library

BURROUGHS, Bishop
Custodian I, Physical Plant

CARSON, Deborah
Accounting Technician II, Business Services/Accounts Payable

CASTANEDA, Donald
Custodian I, Physical Plant

CHAVEZ, Gabriel
Groundskeeper II, Physical Plant

CHEANEY, Jolene,
Administrative Assistant II, Construction Technology

CHOU, Chi-Ping
Library Technician III, LARC/Library

CLARK, Elizabeth
Administrative Assistant II, Small Business Development Center

CROCKOM, Thomas
Housekeeping Supervisor I, Physical Plant

DEITRICK, Marilyn
Accounting Technician II, Business Services/Cashier's

DEROU, Michael
University Counselor III, LARC/Assessment Center

EAVES, Jennifer
Custodian I, Physical Plant

ELLIOTT, Barbara
Administrative Assistant III, Instruction/Arts and Business

ESQUIBEL, Jose
Custodian I, Physical Plant

FABRIZIO, Carolyn
Accounting Technician II, Business Services/Cashier's

FLOYD, Tanya
Administrative Assistant III, Communication, Recruiting and Outreach

FOSTER, Elizabeth
Publications Specialist I, Student Center

FOX, Jennifer
Administrative Assistant II, Rocky Mountain Education Center

FREDERICK, Robert
Custodian II, Physical Plant

FROST, Janet
Administrative Assistant III, Instruction/Science and Technology

GALLEGOs, Jennifer
Custodian I, Physical Plant

GARCIA, Anthony
Utility Worker II, Physical Plant

GEORGE, Anna
Customer Support Intern, Computer Services

GOUGH, Renée
Administrative Assistant III, Communication, Recruiting and Outreach

GRAHAM, Virginia
Administrative Assistant III, Job Placement and Cooperative Education

GRASSE, Martina
Administrative Assistant II, Health Careers Program

GREEN, Lois
Administrative Assistant III, Arvada Campus

GRUBER, Darlene
Program Assistant II, President's Office

GUERRERO, Salvador
Housekeeping Supervisor I, Physical Plant

HAMBY, Cynthia
Administrative Assistant II, Instructional Services

HAMILTON, Isaac
Custodian I, Physical Plant

HOFFERT, Janis
Administrative Assistant III, Admissions

HOULE-ANDERSON, Kelly
Early Childhood Educator II, School-Age Child Care

HUGHES, Diane
Administrative Assistant II, Admissions

HUTE, Popi
Early Childhood Ed II, School-Age Child Care

JASSO, Susan
Accountant II, Business Services/Payroll

JONES, Mary
Accounting Technician II, Business Services/General Ledger

JONES, Patrick *(Red)*
Custodian I, Physical Plant

KING, RuthAnn
Accounting Technician II, Business Services/Payroll

KIOLBASA, Kathy
Administrative Assistant II, Student Records

KRELLER, Jeannine
Administrative Assistant II, Rocky Mountain Education Center

KUMPF, Susan
Program Assistant I, Student Records

KUSHEL, Arlene
Administrative Assistant III, Student Center

LEDET, Delves
HVAC Mechanic, Physical Plant

LEICHT, Linda
Network Analyst Intern, Computer Services

LOPEZ, Randy
Custodian I, Physical Plant

LUJAN, Ruben
Custodian I, Physical Plant

MANVILLE, Suzanne
Student Services Specialist I, Financial Aid

MAYA, Debbie
Accounting Technician II, Business Services/Payroll

McLUER, Grete
Administrative Assistant II, Admissions

MERCER, Willoughby
Police Officer III, Campus Police

MERRIMAN, Donna
Administrative Assistant III, Student Records

MITCHELL, Jeannie
Administrative Assistant III, The Red Rocks Institute

MOLL, Melodie
Administrative Assistant II, Student Records

MORGAN, Peggy
Accountant I, Business Services/Accounting

MUNKERS, Warren
Custodian I, Physical Plant

NORDEN, Robert
Groundskeeper I, Physical Plant

O'CONNEL, Cathy
Administrative Assistant II, Information Desk

ORTEGA, Frances
Library Technician II, LARC/Library

PACHECO, Patricia
Library Technician I, LARC/Library

PEAVEY, Donna
Program Assistant, Learning Design and Support Services

PETTINE, Kathleen
Administrative Assistant III, Physical Plant

PORCH, Kathy
Network Analyst Intern, Computer Services

REAGAN, Sandra
Student Services Specialist I, LARC/Assessment Center

REINKE, Carmie
Accounting Technician II, Business Services/Accounts Payable

RODRIGUES, Mary Ann
Accounting Technician IV, Business Services/Cashier's

RUPPERT, Sandy
Administrative Assistant III, Campus Police

SAJCZUK, Kathy
Human Resources Specialist I, Human Resources

SCHISSLER, Kathy
Administrative Assistant III, Administrative Services

SCHMUCK, Adrienne
Network Analyst Administrator, Computer Services

SIEVERDING, Sylvia
Student Services Specialist I, LARC/Assessment Center

SIMPSON, Beverly
Program Assistant I, Red Rocks Foundation

STARKWEATHER, Sonja
Storekeeper II, Physical Plant

STEGEMAN, James
Custodian I, Physical Plant

SULLIVAN, Valorie
Program Assistant I, Learning and Resource Center *(LARC)*

TATNALL, Denise
Purchasing Agent II, Business Services/Purchasing

TRUJILLO, Danielle
Administrative Assistant III, Red Rocks Institute

WALLER, Mary
Administrative Assistant II, Instruction/Arts and Business

WENGROVIUS, Ruth
Student Services Specialist I, LARC/Assessment Center

WICHMANN, Lenora
Storekeeper I, Physical Plant

WILSON, Diane
Administrative Assistant II, Mountain Center

Index

Twenty-three percent of Red Rocks students are over the age of 40.

"You are never too old to come back to school . . . .
I only wish I had done it sooner."

—Zdana Feduschak
Graphics/Animation Technology student

A

B

C

O

P

R

S

T

V

W

Published By:
Red Rocks Community College

Office of Communication, Recruiting & Outreach
13300 West Sixth Avenue
Lakewood, CO 80228-1255

Executive Director: Roberta Bhasin
Production, Design & Desktop Publisher: Tanya Floyd
Photographers: Tanya Floyd & Michael Gamer
Printer: Phillips Brothers Printers