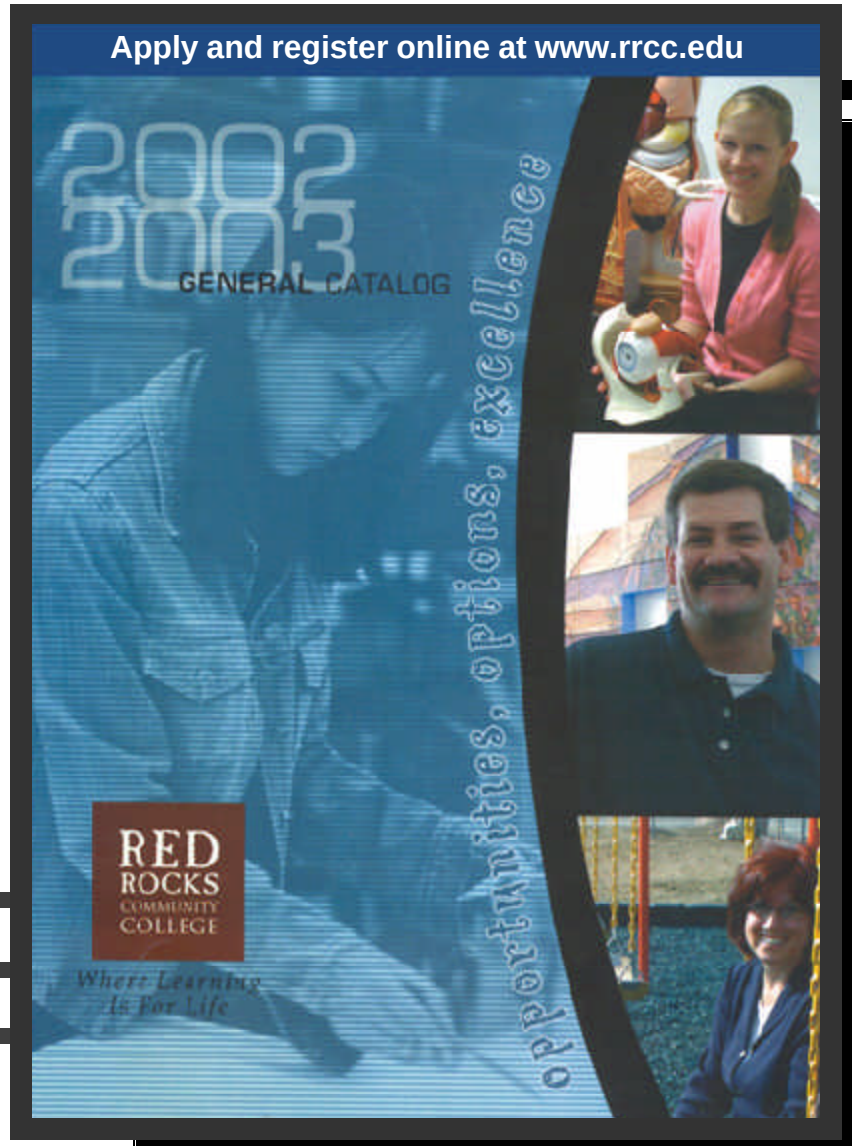

Red Rocks Community College

2002-2003 General Catalog

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Table of Contents

opportunities, options, excellence

ATTENTION: This catalog is effective beginning fall semester 2002.
Course numbers and descriptions are subject to change.

Red Rocks Community College
13300 W. Sixth Ave., Lakewood, CO 80228-1255
Information: 303.914.6600 or visit us online at: **www.rrcc.edu**

Accredited by The Commission on Institutions of Higher Education of the
North Central Association of Colleges and Schools
30 North LaSalle St., Suite 2400, Chicago, IL 60602-2504 **Information: 1.800.621.7440**

Programs approved by State Board for Community Colleges and Occupational
Education and Community Colleges of Colorado
1391 North Speer Blvd., Suite 600, Denver, CO 80204 **Information: 303.620.4000**

Photography by John Anderson

Published by: Red Rocks Community College College Relations Department

Calendar

Fall 2002 Semester: Aug. 26 - Dec. 15

June 24 . . . . . Registration begins
Aug. 15 . . . . . Payment deadline for students registering between June 24 and Aug. 15
Aug. 20 . . . . . New Student Orientation
Aug. 23 . . . . . International Student Orientation
Aug. 23 . . . . . 15-week weekend classes begin
Aug. 26 . . . . . 15-week classes begin (other classes begin throughout the fall)
Aug. 30 . . . . . No classes after 5 p.m.
Aug. 31-Sept. 2 . . . . . No classes; Labor Day weekend (all campuses closed)
Sept. 11 . . . . . Last day to drop 15-week classes and initiate tuition refund
Sept. 11 . . . . . Deadline for credit / audit changes for 15-week classes
Sept. 11 . . . . . Application deadline for fall graduation
Oct. 22 . . . . . No classes; All-College Development Day
Nov. 27-Dec. 1. . . . . No classes; fall break
Nov. 28, 30 -Dec. 1 . . . . . No classes; Thanksgiving holiday (all campuses closed)
Nov. 15 . . . . . Last day to withdraw from 15-week classes ("W" recorded - no refund)
Dec. 15. . . . . Fall semester ends

Spring 2003 Semester: Jan. 21 - May 13

Dec. 2. . . . . Registration begins
Jan. 8 . . . . . Payment deadline for students registering between Dec. 2 and Jan. 8
Jan. 14 . . . . . New Student Orientation
Jan. 17 . . . . . International Student Orientation
Jan. 17 . . . . . 15-week weekend classes begin
Jan. 21 . . . . . 15-week classes begin
Feb. 5 . . . . . Last day to drop 15-week classes and initiate a tuition refund
Feb. 5 . . . . . Deadline for credit / audit changes for 15-week classes
Feb. 5 . . . . . Application deadline for spring graduation
March 17 - 23 . . . . . No classes; spring break
March 21 - 23 . . . . . Weekend College classes meet
April 11 . . . . . Last day to withdraw from 15-week classes ("W" recorded = no refund)
April 15 . . . . . No classes; All-College Development Day
April 18 . . . . . No classes after 5 p.m
April 19-20 . . . . . No classes; Easter weekend (all campuses closed)
May 13 . . . . . Spring semester ends
May 15 . . . . . Graduation

Classes may begin or end before, during or after each semester. Check the class schedule for current start dates or visit our Web site at www.rrcc.edu.

To meet the scheduling demands of working adults, Weekend College operates year round, rather than on a semester-by-semester basis. Classes are offered in three-, six-, and nine-week blocks beginning every three weeks. See the Weekend College section of the schedule for complete information.

General Information

For the most current schedule, visit us online at:

www.rrcc.edu

opportunities, options, excellence

Welcome to Red Rocks Community College

Hello and welcome to the book that could change your life. Enclosed is an overview of Red Rocks Community College – who we are, the principles that guide us every day, how we operate, and most important of all, the wealth of classes and learning options we offer to help you achieve your educational goals and experiences.

Since 1969, when we opened as a campus of Community College of Denver, Red Rocks has changed in many ways in response to changes in our student body and the educational needs of our communities. What has remained constant for us is a strong commitment to provide students with an excellent educational opportunity to fit their needs – retraining for a changing job market, a close-to-home and affordable jump-start on a four-year degree, new skills to enhance their performance at work, or simply the joy of learning something new.

If you know exactly what you want to learn, you'll find easy-to-access information in this catalog. If you are uncertain where you want to go, leaf through and explore the possibilities at Red Rocks. Need a knowledgeable guide? Use the catalog as a tool, as one of our advisors helps you discover the direction that's right for you.

We have certificate and two-year degree programs in everything from arts to multimedia technology to water quality. Because our students have busy lives beyond their education, we offer classes day, night and weekend, online and independent study.

Those seeking a challenge can sign up for our honors classes or explore our international education opportunities.

Through my years as an educator, it has been my great pleasure to see thousands of community college students take that first step toward their individual definition of success (A community college was my first step in realizing my personal and professional goals.). Let Red Rocks help you onto your path to success.

Sincerely,

Eric E. Reno, Ed.D.
President

opportunities, options, excellence

RED ROCKS COMMUNITY COLLEGE

Where Learning Is For Life

Welcome to Red Rocks Community College

Opportunities, options, excellence

We could spend thousands of words describing Red Rocks Community College to you, but the fact is, just three words sum up what the Red Rocks experience is like: Opportunities. Options. Excellence.

Opportunities

One thing that our students have in common is that they are serious about their education, and they understand how education can change a life.

Many are headed for a four-year degree, with Red Rocks as the launching point. Transfer agreements with Colorado state four-year universities make for a smooth transition.

The demands of the workplace are changing almost daily, and many of our students have made the smart decision to keep ahead by upgrading their skills. Red Rocks works closely with employers and an Advisory Council to anticipate the training needs of the workforce of the future.

We also offer a tempting buffet of courses for students who just want to satisfy their curiosity or hone their skills at an avoca tion.

Financial aid and scholarships from our Foundation (about $175,000 a year) help make education accessible to all.

Options

There is one unifying mission at Red Rocks: How can we make this the best experience for our students? To that end, we have several options to enhance your learning.

Start with choice - 650 different classes and 150 programs offered in traditional classrooms during weekdays, or at night or on weekends, online or through self-paced independent study or telecourses. In our popular learning communities, stu dents travel together through clusters of interconnected courses.

Does the wider world beckon? At our Office of International Education, explore study abroad, and the generous scholarships available to help you get there.

For those who want to dig deeper into a subject, honors classes provide an extra measure of rigor. Celebrating the “community” of our name, service learning pairs students with community groups; the groups get valuable assistance and the students gain experience and satisfaction.

Excellence

Like any organization, Red Rocks has its day-to-day routines, but they never get in the way of our pursuit (and recognition) of excel lence.

Our active chapter of Phi Theta Kappa, the honor society for two-year colleges, continues to receive a five-star rating, the highest possible.

Most of our outstanding faculty hold advanced degrees; many are working professionals, bringing the latest information, experience and techniques to our students.

What our students have in common is an appreciation for the value of education and a commitment to do their best and take the best that we have to offer. Our commitment to them is that we will never stop making our best, better.

Campus Information

Vision
RRCC is a leader in learning and a valued partner in transforming lives and building communities.

Mission
RRCC develops and supports lifelong learners so that they may live fuller lives and add value to the communities in which they live and work.

Values
RRCC values diversity, integrity, honesty, innovation, communication and teamwork.

Purpose
Red Rocks Community College gives 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 underprepared 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 back grounds, needs and educational objectives
- Community services including cultural programs, noncredit offerings, and forums designed to encourage diversity of thought about public issues

Lakewood Campus
Red Rocks Community College was established in 1969 as the new west campus of the Community College of Denver. The college moved from its 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. In 1990, a campus was established in Arvada to meet growing demands for Red Rocks services.

Today, the college serves more than 14,000 students annually from throughout Colorado, the U.S. and around the world. The typical student is 29 years old, working and attending school part time. More than 650 courses and programs and complete scheduling flexibility meet a variety of educational goals, including professional certification, transferrable two-year degrees, occupational degrees and certificates, and updated job skills.

Arvada Campus
The Arvada Campus is known for its innovative schedule options, friendly, helpful atmosphere and for a beautiful building with stunning views of the foothills of the Rockies from Lookout Mountain to Pike's Peak. The campus lies just northwest of the intersections of I-70 and Kipling (5420 Miller St.), and serves the communities of Arvada, Wheat Ridge and northwestern Jefferson County.

Our 20,000-square-foot building houses "smart" state-of-the-art classrooms, offering courses in computer technology, including the IT Microsoft Academy that specializes in MCSE and MCAD. We also offer general education core courses and basic-skills courses in math, reading, and English. The LARC (Learning and Resource Center) is the centerpiece of the building, housing the Computer Commons, assessment and basic-skills, self-paced labs, online support, library services, tutorial services in math, social studies and English, career resources, study areas and access to the Internet.

In addition to classes held at the Arvada Campus, classes are also at other local community locations. Students can also receive advising, register and pay for classes, and receive financial aid information in one convenient location.

Campus Closures
When bad weather or emergency conditions require that any of the Red Rocks Community College campuses or centers be closed, college administrators, acting on the advice of campus police and/or physical plant personnel, will initiate the notification plan. Weather and emergency conditions in the immediate vicinity of the campuses will be the criteria for closure. Please note that Red Rocks Community College is exempt from the State Inclement Weather Policy and therefore this institution may remain open while other state government offices close.

Depending on the situation, the campuses may be closed for the entire day or for a portion thereof. If the campus is closed for the entire day, every effort will be made to have a decision by 5:30 a.m. so that immediate announcements can be made via the news media, campus telephone and the College Web site. If the campus is to close for the evening, every effort will be made to have a decision by 4 p.m. with the same notification process initiated.

For notification purposes please refer to the following:
Telephone: **303.914.6555**
Web site: **www.rrcc.edu**
News media: Denver metropolitan area AM/FM radio stations and television

The RRCC Lakewood Campus is conveniently located on Sixth Avenue near Interstate 70 and C-470, just minutes from the Rocky Mountains.

Admissions and Advising Information

Admissions

Red Rocks Community College welcomes anyone who can benefit from our instructional programs and courses, including high school graduates, nongraduates 18 years old or older and students 16 years old or older who are currently enrolled in high school.

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 required 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. The director of Enrollment Services reviews questions of admissibility. Admission based on false statements or documents may be reversed and credits completed under these circumstances may be revoked.

Admission Procedures

First-time students entering degree programs within the Colorado state system of community colleges are assessed in reading, writing and mathematics. Those who do not meet basic-skills standards must complete appropriate basic-skills instructions. Students who begin classes and later enroll in a certificate or degree program must participate in assessment at the time they enroll in the program.

1. Submit an Application for Admission, including the declaration of program, major or area of study. Applications are available in the schedule and online at **www.rrcc.edu.**

2. Take the COMPASS basic-skills assessment before registration to assist in making appropriate educational plans. This is not an entrance exam. Assessment times are listed in the current schedule under "Assessment." No appointment is required.

Students whose assessment scores are below college level are responsible for enrolling in basic-skills courses during their first 30 credit hours of attendance.

Information: **303.914.6720**

3. See an academic advisor and complete the registration process.

Former Students: If you are returning to Red Rocks after an absence of more than one year, you must apply for re-admission. If you have earned credit at another college in the interim and plan to use that credit to fulfill requirements for a Red Rocks degree or certificate, you must submit a transcript to the Records Office prior to the semester in which you plan to graduate.

High School Students Participating in the Postsecondary Enrollment Options Program (PSEO): High school students wishing to participate in the PSEO Program must receive approval from their school counselor before enrolling. Upon approval, students must:

1. Apply for admission to Red Rocks Community College

2. Complete the Red Rocks Community College assessment process*

3. Have their schedule approved by an academic advisor

4. Register for classes

5. Pay for tuition, student fees, books, and supplies

Upon successful completion of the course, the school district will reimburse tuition costs

Information: **303.914.6350**

High School Students Not Participating in the Postsecondary Enrollment Options Program: High school students wishing to register for classes must schedule an interview with an academic advisor in the RRCC High School Relations Office prior to enrolling. Upon formal approval, students need to:

1. Apply for admission to Red Rocks Community College

2. Complete the Secondary Student Admission Permit

3. Complete the Red Rocks Community College assessment process*

4. Have their schedule approved by an academic advisor

5. Register for classes

6. Pay for tuition, student fees, books, and supplies

Information: **303.914.6350**

* Students must exhibit, through assessment results at RRCC, the ability to benefit from college-level instruction.

Advising

After completing the assessment process, you are encouraged to visit the Advising Center. Academic advisors can help with selecting and scheduling courses, identifying course prerequisites, obtaining specific program information, providing graduation requirement evaluations and evaluating assessment 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**

Admissions and Advising Information

Armed Forces Recruiting

ROTC is offered in conjunction with Colorado School of Mines. For Armed Forces recruiting information and ROTC information, please call the Veteran Affairs Officer at **303.914.6353**, or come to Room 1200.

Assessment Center

Red Rocks Community College assesses the basic-skills proficiency of all new students who plan to enroll in courses leading to degrees or certificates. If you previously enrolled at the college while still attending high school, you are considered a new students when you enter the college after graduation.

The COMPASS (Computerized Assessment) takes approximately two hours and is available free of charge on a walk-in, first-come, first-served basis. Test times are listed in the current schedule.

You may satisfy assessment requirements by submitting qualifying ACT or SAT score reports to the Assessment Center, or by providing evidence of a college degree (two-year or four-year).

You must meet one of the assessment requirements described above to determine your need for basic skills remedial coursework and/or to determine appropriate course placement.

Information: **303.914.6720**

Career Planning and Workplace Experience

If you are planning for your first career, a career change, or want to enhance your existing job skills, Red Rocks Career Development specialists can help. Using career and personal interest inventories and computerized information, they can help you select 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**

ESL/Foreign Language Lab

The ESL/Foreign Language Lab offers CD-ROM, videotape and audio cassette materials to help students and staff learn 101 world languages. Tutoring is available in Spanish, French, German, and English as a Second Language (ESL). The lab also maintains a resource library of world beat music CD's, foreign-language movies with English subtitles, and the world news.

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 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 re-admission. 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. Registration is contingent upon receipt of all required documents, which become property of the college.

Transcripts

If you need your Red Rocks transcript to be forwarded to a third party, a Transcript Request form is available in Admissions. Students may request five free transcripts per semester. Extra transcripts can be purchased for $5 per copy. Transcripts will not be provided for students who have not fulfilled all financial obligations to the college.

Information: **303.914.6352**

Transfer of Credits

The Colorado Community College System launched a common course numbering and common competency project to improve student transfer and to ensure curriculum quality across our system. The project will not jeopardize student credit and transfer. Course numbers and competencies will be posted online at **www.rightchoice.com** and **www.cterc.cccoes.edu/cccns** as they are completed.

1. **Initial transcript evaluation is done in Student Records.** Transcripts must be sent from a previous college to Red Rocks Community College.

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 if they are obsolete. If so, 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 in a Colorado community college that are applicable to a specific AAS degree or certificate will be accepted in an equivalent program.

Admissions and Advising Information

If you are pursuing a degree or certificate and wish previous college credits to be considered for transfer, submit official transcripts either sent from a previous institution or hand-carried in a sealed envelope to Student Records as soon as possible after registering for classes.

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 beginning your first class.

Course numbers and descriptions are subject to changes.

Information: **303.914.6355**

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
Colorado Technical University
Fort Lewis College
Fort Wayne State University
Franklin University
Mesa State College
Metropolitan State College of Denver
Regis University
St. Francis University
University of Colorado at Boulder
University of Colorado at Colorado Springs
University of Colorado at Denver
- College of Business and Administration
- College of Engineering and Applied Science
- College of Liberal Arts and Sciences

University of Colorado Health Sciences Center
University of Denver
University of Northern Colorado
University of Southern Colorado
Western State College

These agreements specify how Red Rocks courses transfer and identify their equivalents at these institutions. They are on our Web site at **www.rrcc.edu** under "Information For Students." These agreements are written guarantees of transferability when a prescribed curriculum is satisfactorily completed.

Information: **303.914.6255**

Warren Tech

Students at Red Rocks and Warren Technology Center, 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
Auto Technology
Business Services and Technology I, II, III, IV
Construction I, II, III, IV
Cosmetology I, II
Culinary Arts I, II, III
Computer Technology I, II
Dental Assisting I, II
Drafting I, II, III and IV
Early Childhood Professions I, II
Graphic Communications I, II, III, IV
Graphic Design/Computer Art I, II, III, IV
Horticulture I, II, III and IV
Hospitality, Travel and Tourism I, II
Industrial and Design Technology
Masonry Arts I, II, III, IV
Multimedia I, II, III, IV
Nail Technology I
Network Technology I, II
Small Engine and Motorcycle Tech I, II, III, IV
Welding I, II, III, IV

Warren Tech students and other high school students wishing to enroll in a technical program should call **303.982.8603** or **303.914.6356** for registration information.

Tuition and Financial Aid

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, whereas **loans** must be repaid. **Work-study** agreements allow you to work for the college while you are enrolled.

The Financial Aid Office, **303.914.6256**, can provide details for the following:

- Colorado Scholars, Red Rocks Foundation
- Federal Pell Grants, Colorado State Grant, Colorado Leveraging Educational Assistance Partnership (CLEAP), Federal Supplemental Educational Opportunity Grant, Governor's Opportunity Scholarship
- Federal Stafford Student Loans, Federal Parent Loan (PLUS)
- Federal and Colorado Work Study Program

Once you have applied for financial aid, it takes about eight to 10 weeks to process your request. Although the application for financial aid may be submitted throughout the year, **priority dates** have been established to assure the availability of funding. Financial aid applications must be complete and correct by priority date. For complete financial aid information see the Financial Aid Handbook or contact the Financial Aid Office.

Financial Obligations of Students

Payments for tuition, fees and materials are due on the specified date published in the schedule or at the time the obligations are incurred. You are not 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 semesters until you have made a satisfactory arrangement with the college.

Nonresident Students

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

To change from nonresident 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 semester. Petitions received after the deadline will not be considered until the following semester. 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 Citizen Tuition

In-state students over the age of 60 may be eligible for a one-half-tuition grant. Complete the Senior Citizens Grant Program form available in the Financial Aid Office. You must pay full fees. The Financial Aid Office must be notified when a class is added or dropped.

Priority Dates To Receive Financial Aid

Spring 2003: Sept. 1, 2002
Summer 2003: Feb. 1, 2003

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 nonrefundable registration fee, a parking/student fee, a Student Center fee and fees for some courses. For current tuition rates, deadlines and methods of payment, consult the latest schedule.

Resident

Credits	Estimated Tuition	Registration Fee	Student Fees	Total
1	$62.85	$10.05	$8.00	$80.90
1.33	83.59	10.05	10.64	104.28
2	125.70	10.05	16.00	151.75
2.67	167.81	10.05	21.36	199.22
3	188.55	10.05	24.00	222.60
4	251.40	10.05	32.00	293.45
5	314.25	10.05	40.00	364.30
6	377.10	10.05	48.00	435.15
7	439.95	10.05	56.00	506.00
8	502.80	10.05	64.00	576.85
9	565.65	10.05	72.00	647.70
10	628.50	10.05	80.00	718.55
11	691.35	10.05	88.00	789.40
12	754.20	10.05	96.00	860.25

No fees charged for credits over 12

Nonresident

Credits	Estimated Tuition*	Registration Fee	Student Fees	Total
1	$305.00	$10.05	$8.00	$323.05
1.33	405.65	10.05	10.64	426.34
2	610.00	10.05	16.00	636.05
2.67	814.35	10.05	21.36	845.76
3	915.00	10.05	24.00	949.05
4	1,220.00	10.05	32.00	1,262.05
5	1,525.00	10.05	40.00	1,575.05
6	1,830.00	10.05	48.00	1,888.05
7	2,135.00	10.05	56.00	2,201.05
8	2,440.00	10.05	64.00	2,514.05
9	2,745.00	10.05	72.00	2,827.05
10	3,050.00	10.05	80.00	3,140.05
11	3,355.00	10.05	88.00	3,453.05
12	3,660.00	10.05	96.00	3,766.05

No fees charged for credits over 12

CCCOnline tuition is $128.45 per credit for both residents and nonresidents.
Physician Assistant Program tuition is $257.65 per credit for residents, and $347.35 per credit for nonresidents.

***For current tuition rates, refer to the latest schedule.**

RRCC Foundation

RED ROCKS COMMUNITY COLLEGE
Foundation

Since its creation in 1993, the Red Rocks Community College Foundation has raised more than $3.5 million and returned $1.8 million in institutional support and hundreds of student scholarships.

More than $250,000 is distributed annually to students, college staff, and institutional priorities.

Scholarship applications are accepted year-round. The deadline for submission is early May. For more information, call Gina Amato, Foundation coordinator, at **303.914.6363**. Scholarships are given on the basis of both need and merit.

The Foundation has also provided funding for the RRCC Arvada campus, the Learning and Resource Centers on both the Lakewood and Arvada campuses, mini-grants for innovative faculty, and the newly established Endowed Teaching Chair program to recognize teaching excellence.

The Foundation is governed by a board of 28 community and business leaders.

The Foundation accepts and manages a variety of gifts, including cash, pledges, stock transfers, planned gifts and bequests. Gifts may be designated for specific purposes or for the area of greatest need, as determined by the Foundation board and college administration.

For more information on giving possibilities or any other questions, call Paulann Doane, executive director, at **303.914.6425**.

Mission

To support Red Rocks Community College in its goal to improve lives and build communities

Goals

1. Provide financial support to the college through effective fundraising.
2. Increase public and business awareness of the college and the benefits it provides the community.
3. Provide counsel and community input to the college.

Foundation Board

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Jacquie Haughton, vice president
Dr. Eric Reno, secretary
Thomas W. Lemcke, treasurer
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Dr. Agneta Albinsson, at-large
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Aldo G. Notarianni
Charles S. Ochsner
Jane Petrie
Bill Shanley
Bob Short
Mara Swan
Shirleen Tucker
Stuart Wheeler

Paulann Doane, executive director

Learning and Resource Center (LARC)

Combining one-on-one instruction with state-of-the-art technology, the LARC offers many services in one convenient place. Take advantage of the LARC's self-paced courses in basic skills, math, English and social sciences. Access a variety of learning tools in the friendly, comfortable environment that the LARC offers you. Tools include CD-ROMs and online computer tutorials, the extensive resources of the library, 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

You may receive academic credit for education attained through earlier schooling, work, experiential learning or other nontraditional means, as long as it is comparable to courses offered at Red Rocks and related to your current program. Methods available for CPL are the following:

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

CPL handbook and forms are online: **www.rrcc.edu/student/larc/assessmt.html**

Other Tests Available

- **COMPASS** (Red Rocks assessment test.) Test times are listed in theschedule. **No appointment required.** Sample tests are available online: **www.rrcc.edu/student/larc/assessmt.html**
- **Authorized Prometric Testing Center** Computerized certification and license testing for software publishers, state and federal governments and educational entrance exams.
- **HOBET** (Health Occupations Basic Entrance Test)
- **Colorado Vocational Educator Test**

Information: **303.914.6720**

College Success For All Students

Want to be a better student, but just don't know how? AAA 109 Advanced Academic Achievement gives both first-time and returning students the opportunity to learn and adopt proven methods to be successful in college. You'll be introduced to a variety of skills critical to success: education and career planning, effective communication, personal management, critical and creative thinking, development of community,awareness of diversity, leadership and techniques for successful academic performance.

Computer Access Center

The Computer Access Center (CAC) in the Office of Special Services offers adaptive computers and individualized and modified instructions to students with specific disabilities using word processing and spreadsheet applications. Computer adaptations include screen reading and screen enlargement software for students who are blind or with low vision or specific learning disabilities such as dyslexia. Alternative keyboards and software help students who have difficulty using a standard keyboard, and voice recognition software allows a student to access the computer by voice.

Information: **303.914.6735**

Free Learning Seminars

Free weekly seminars feature topics such as learning styles, study skills, math, grammar, test-taking tips and Internet searches. Seminars are offered both days and evenings, and are open to the public. Pick up a schedule in the Lakewood or Arvada LARC.

Learning Development

Learning Development offers English, math, reading, spelling and academic achievement courses to prepare you for success in college and vocational classes. Preparation courses for GED, ACT, SAT, and GRE tests are also available.

GED information line: **303.914.6718**

We have both self-paced and classroom courses. You can begin self-paced courses at any time and learn based on your individual needs. You have a choice of textbook or computer-based instruction with personalized help from friendly, supportive tutors. Our free practice test for the GED allows you to determine if you're ready for the official GED test.

Information: **303.914.6717** (Lakewood) or **303.914.6020** (Arvada)

Library

The library offers extensive print, audiovisual and electronic information services. CARL, the library's online catalog,, offers access to the Red Rocks catalog, to the catalogs of other libraries and to thousands of full-text articles from on or off campus. 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 traditional research. Library Internet access opens the World Wide Web to the Red Rocks community, while Interlibrary Loan lets you borrow materials from virtually any library in the world.

Information: **303.914.6740**

Learning and Resource Center (LARC)

Math Lab

The Math Lab provides tutoring at the Lakewood and Arvada campuses to help students succeed in their math studies at Red Rocks. We offer math that supplements classroom instruction.

Information: **303.914.6715** or e-mail **monica.bennett@rrcc.cccoes.edu**

Office of Special Services

The Office of Special Services (OSS) coordinates services to provide equal opportunities for individuals with documented disabilities to pursue their educational goals. The OSS staff make determinations and provisions regarding access and reasonable accommodations, and provides advocacy services for students, staff, and visitors with disabilities.

The office is also a resource for the college community on disability issues. Services include sign language interpreters, books-on-tape, note takers, readers, individual tutors for students in danger of failing, test accommodations, and adaptive computer training. The office also arranges orientations for new and potential students with disabilities.

Information: **303.914.6733** (V) or **303.914.6732** (V/TTY)

Social Science Center

Do you want to take classes but think you're too busy? Do you need a flexible schedule that allows you to read, study and take tests at your convenience? The Social Science Center offers busy individuals the chance to take classes in history, sociology, psychology, geography, political science and the humanities. These self-paced classes combine lessons from the textbook with assignments and other information online. At the beginning of the semester, you will need to attend an orientation given on campus, but from then on, you're on your own. You have 15 weeks to complete the course work. The aides who work in the Social Science Center will show you what tests you have to take and collect your essays. Because the Social Science Center is open at very limited times during school breaks, the best time to take your tests, pick up your work, and turn in your assignments is during the semester. Self-paced classes are also available at the Arvada Campus and at the Mountain Center.

Information: **303.914.6711** or e-mail arlene.curtiss@rrcc.cccoes.edu

Weekend College

Did you know that you can complete a two-year degree by going to school only on weekends? For students who take all the required courses through weekend classes, either an associate of arts degree or an associate of arts degree with an emphasis in business are available. Or, if you want to pick up elective classes or just take classes for fun and not toward a degree, you have over 80 classes to choose from during the spring and fall semesters. In fact, you can start a new class every three weeks, except during school breaks in December and August. From a class on stress management that is only one weekend long, to longer classes in Spanish, philosophy, and United States history, the Weekend College is fast, fun, and friendly. Join other busy people who have found the Weekend College the place to learn all about their world.

Information: **303.914.6317** or e-mail arlene.curtiss@rrcc.cccoes.edu.

Writing Center and Online Writing Center (OWC)

The mission of the Writing Center is to help students learn to write better. English instructors are available to work individually with students in any subject area to improve their writing skills, offering them strategies and resources for succeeding in any kind of writing assignment, including essays, term papers and essay exams. Instructors will help students generate ideas, organize and develop topics, revise and edit with confidence, and observe conventions of format and documentation.The OWC enables students to get help with their writing at: **www.rrcc-online.com/~writing**. The site has links to information about writing and grammar, and students may submit papers and questions and receive responses from tutors.

Distance Learning Opportunities

Community Colleges of Colorado Online

(CCCOnline)

Red Rocks Community College and the other institutions in the Community Colleges of Colorado System offer a fully-accredited associate of applied science degree in business administration over the Internet.* Courses taken through CCCOnline are transferred to the college of your choice within the system. Choose Red Rocks as your "home college."

Courses are taken by anyone, anytime, anywhere. Courses begin at various times throughout the year. CCCOnline 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, and threaded discussions to enhance your learning experience.

If you have access to a 200MhZ Pentium computer or faster with Windows 95 or newer, or a Macintosh with MacOS 7.5.5 or later, 16MB of RAM, a 28.8 Kbps modem, sound card and speakers, an e-mail account 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 online. If you do not have access to a computer, you may come to the Learning and Resource Center (LARC) on the Red Rocks Lakewood campus for computer services or to the Arvada Campus LARC.

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 do transfer. Please see an advisor or business department faculty member for specific details. CCCOnline has established transfer agreements with Northwest Missouri University.

*An AAS in Information Technology, a complete AA degree and an AAS and certificate in Emergency Management and Planning are also offered. Go to **www.ccconline.org** for more information including current and future courses, certificate and degree offerings.

Information: **303.914.6705**

Cooperative Education/Internships

As an extension and application of classroom learning, internships 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 is required to earn each hour of college Co-op credit. Most programs 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.

Transferability of Cooperative Education/Internship college credit is contingent on approval of the receiving institutions. General Education internship credit has been formally articulated for transfer to University of Colorado - Denver and Colorado State University. Transfer to other four-year institutions in the metro area is forthcoming.

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. Assistance with Coop/Internships is available in the Student Employment Office.

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 the student and the instructor. Permission of instructor is required prior to registering.

Self-Directed Study

Self-directed 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 transferable. 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-directed courses are open entry (except for ENG and MAT courses); you may register at any time and have 15 weeks to complete the course work, 10 weeks in summer.

Information: **303.914.6700**

International Education

Admission Information for International Students

International students are those students admitted into the U.S. on a non-immigrant visa. Students in an F-1 student status must attend full time; students in other statuses 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 $15,650/year based on tuition of $3,800/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;
- The Red Rocks basic-skills Computerized Assessment test
- U.S. high school diploma with two years of attendance.

Provisional admission may be available for one semester without the documents in category 4; eligibility 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, a valid passport and Form I-94.

6. Proof of health insurance coverage is required. If not covered, you will automatically be billed for health insurance through the college by the fifth day of classes. Insurance must cover repatriation and medical evacuation; these items are available separately.

After the admissions materials have been reviewed, we will issue the U.S. Immigration Form I-20. Applicants outside the U.S. 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.

Application Deadlines

Although 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. New admissions are not accepted after classes begin.

Fall	**July 15**
Spring	**December 1**
Summer	**April 15**

Assessment

Prior to registering for classes, students must take the basic-skills Computerized Assessment test and follow its placement recommendations. The COMPASS takes approximately two hours and is available free of charge on a walk-in, first-come, first-served basis. Test times are listed in the current schedule.

Foreign Credential Transfer

College/university course credits earned at foreign schools can be 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.

Guaranteed Transfer to Universities

Students who follow the college's placement advice will be guaranteed transfer of their credits to nearly all of the universities and colleges in Colorado, such as the University of Colorado and Metropolitan State College of Denver. Most transfer students successfully enter the university of their choice anywhere in the U.S. with junior class standing after completing 60 credits at Red Rocks.

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 Intensive English Program

If you wish to study only English as a Second Language or continue with college-level courses after ESL studies, you may enter our Intensive English Program. The program offers fulltime English instruction (20-25 hours per week) at six levels of beginning, intermediate, and advanced skills.

International Student Orientation

All new international students must attend an International Student Orientation class. This class is scheduled the Friday before 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 provide practical information about housing, shopping, transportation, banking, social customs and other topics useful for life in the U.S.

Study Abroad

Red Rocks students may study for full semesters in foreign countries throughout the year. The college is a member of the College Consortium for International Studies (www.ccisabroad.org) that offers 83 affordable programs in 30 countries. Approximately 90% of all course work is taught in English. Scholarships from $1,000 -$8,000 per semester are available. Short-term, faculty-led study abroad excursions for 10 days to two weeks are commonly offered during spring and summer breaks.

Information

Information:**303.914.6416, 303.914.6536,** or **303.914.6538**

e-mail: international@rrcc.edu

Internet: **www.rrcc.edu/international**

Student Resources

Bookstore

The Red Rocks Bookstore supplies new and used textbooks, recommended titles, software, reference books and supplies for art and drafting. College specialty items and clothing are also available.

Information: **303.914.6232**

Cafeteria

The Red Rocks Cafe on the Lakewood campus serves hot and cold food selections during peak meal hours.

Information: **303.914.6374**

Children's Center

The Children's Center at Red Rocks is the training site for teachers in ECE and offers full-service, full-day care for children 18 months to kindergarten entry. Children need not be toilet trained. The center models a unique form of delivery where a child is assigned to a primary teacher/caregiver on entry and remains with that person for at least two years. The center serves families of students, staff and faculty and the community. Low-income families of students at RRCC can access child care subsidies when available through the center to help pay tuition. The center does not provide drop-in care.

Information: **303.914.6328**

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, arrange your own hours of participation to meet the course requirements.

Information: **303.914.6375**

Police

The Red Rocks Campus Police provide emergency, vehicular and victim assistance, as well as escorts to vehicles, and lost and found services. In case of an emergency on the Lakewood campus, call **911** from a campus phone to reach a campus police officer. For non-emergency services on the Lakewood campus call **303.914.6394**. The Red Rocks Community College Campus Police Dispatch hours are Monday–Friday, 7 a.m.–10 p.m. and Saturday and Sunday, 8a.m.–3 p.m. For after-hours assistance call **911**.

For non-emergency services call **303.987.7111**.

Student Employment Internships

A wide range of full-time, part-time and temporary jobs are available to current and former students through the Lakewood campus Student Employment Office. While the college cannot guarantee employment, every effort is made to maintain ongoing contact with business and industry 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, learn and get college credit while you're working for some of the area's best-known employers.

Information: **303.914.6258**

Student Center/Services

The Lakewood Campus Student Center offers various activities including:

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

Students who are taking courses at other Red Rocks locations are encouraged 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**

The Student Voice

The Student Voice is the representative leadership group of the student body. 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 leadership, skills that will assist you in your educational and professional endeavors. To join, you must be an enrolled student, complete the application process and maintain a 2.5 G.P.A.

Information: **303.914.6248**

Academic Standards

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 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 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 semester. During the summer semester, 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 20 credits during any semester.

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 semester for classes taken during that semester. 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.

Grades

To review or obtain a copy of your grades:

1. Call the S.T.A.R. phone system at 303.572.STAR(303.572.7827), and press "2" for grades. Enter your student identification number (normally your Social Security number) and personal access code (your birth month and birth day e.g. 0423).
2. Use the World Wide Web. Log on to www.rrcc.edu and follow the prompts to the online enrollment system. After you enter the CCCWEB area, enter your student identification number and access number as described above.

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. A grade of "F" does not apply toward certificates or degrees.

Additional Grading Symbols:

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

(AW) Administrative Withdrawal. The grade of AW may be given at the discretion of the individual faculty member.

(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 dis-

ciplines.

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

(SP) Satisfactory Progress. Under the college's continuous enrollment policy, certain courses have been designated open-entry. You are eligible to receive an SP only if you are enrolled in an open-entry course. By the end of the semester, 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 semester, 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.

(Z) A grade of Z will be issued when no grade has been received from the instructor. The official grade will replace the Z when it is received from the instructor.

Academic Progress

If you receive a semester grade point average (GPA) of less than 2.0 for 12 or more credits, you must meet with an academic advisor.

Information: **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 2.0 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.

Information: **303.914.6352**

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 / Total QHRS = 35 / 12 = **2.917**

Grade Point Average (GPA) Calculation

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

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

(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 4.0.

Petitioning for Waivers/Program Substitutions

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 or from a faculty advisor. Students should complete the request, have it approved by their advisor and the instructional AVP or dean, 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 at RRCC. If the request is approved, you will be allowed to repeat the course at RRCC 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 Recognition

Academic Standards

President's List

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

Vice President's List

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

Honors List

The Honors List is designed to recognize those 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.

Information: **303.914.6353**

Honors Program

Students and faculty will participate in a community of learners that will nurture their intellectual and personal growth. We strive to develop leadership skills, to recognize excellence, to provide community service, and to challenge participants in our honors program through experiential learning, interdisciplinary course work, scholarly research, educational partnerships and intellectually challenging peers.

Information: **303.914.6535**

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 12 semester credits of study, have a minimum GPA of 3.5 and a faculty recommendation.

Information: **303.914.6372**

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 instructional vice president or dean.

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 2.0 grade point average (GPA) for all course work attempted. If your cumulative GPA is below 2.0, you will be placed on academic probation for the following term. If your GPA is not increased to 2.0 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.

Because credit is not given for audited courses, these courses 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 your benefit certification adjusted accordingly.

Copies of the veteran regulations are available for review in the Veteran Services office on campus.

Information: **303.914.6353**

Associate of Arts Transfer Degree, University Parallel

The associate of arts degree (60 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. To earn the associate of arts degree, students must complete the core curriculum requirements for a total of 34 semester credits. Students are encouraged to consult with their faculty advisors before beginning any program of study. Emphases are available in the following areas:

- Art
- Business
- Economics
- English and Literature
- Foreign Languages:
  - French
  - German
  - Spanish
- History
- Humanities
- Musical Theatre
- Philosophy
- Political Science
- Psychology
- Sociology
- Speech Communication
- Theatre Arts

Associate of Science Transfer Degree, University Parallel

The associate of science degree (60 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. To earn the associate of science degree, students must first complete the core curriculum requirements for a total of 33 semester credits. Students are encouraged to meet with their faculty advisors before beginning any program of study. Emphases are available in the following areas:

- Biology
- Biotechnology
- Chemistry
- Computer Science
- Pre-engineering
- Geology
- Mathematics
- Pre-nursing
- Physics

Flex Learning Opportunities

Red Rocks offers courses outside of the traditional class room designed for the learner who is constrained by work, distance, time, family, etc. called Flex Learning. Courses offered are via television, self-directed, weekends only, online only and hybrid (courses offered both online and in class). You choose which option works best for you.

Online Courses (RRCC Online and CCCOnline)

Courses through both RRCC Online and CCCOnline are taken by anyone, anytime, anywhere at your convenience. Courses begin at various times throughout the year. Both offer regular communication with faculty and fellow students, who may be anywhere in the world. At the same time, you learn to use the Internet, chat rooms, and threaded discussions to enhance your learning experience.

You register, pay, order books, attend class and use library services online. If you do not have access to a computer, you may come to the Learning and Resource Center (LARC) on the Red Rocks Lakewood campus or to the Arvada Campus Learning and Resource Center. For more information, call: **303.914.6705**. Most course descriptions are included in this Catalog under "Course Descriptions."

Computer Specifications

If you have access to a 200MhZ Pentium computer or faster with Windows 95 or newer, or a Macintosh with MacOS 7.5.5 or later, 16MB of RAM, a 28.8 Kbps modem, sound card and speakers, an e-mail account and access to an online Internet service provider, you never have to come to a campus.

RRCC Online Courses

RRCC Online courses are offered exclusively through Red Rocks Community College, (labeled with a 400 series section number (450, 460, 470, 480, etc.), and are available in a wide variety of subjects that meet degree and certificate program requirements. They are offered online only or as hybrid courses (online and classroom-based). Tuition costs are the same as any other RRCC course. Instructors are located at RRCC. If you are unable to find the online course you need at RRCC Online, try CCCOnline. (See information below).

CCCOnline Courses

The Colorado Community College System Online provides a centralized Web site where you can tke classes, earn a certificate or even complete an associate of arts or associate of sciences degree online from the community college of your choice. See an advisor for transfer details. Tuition cost is 128.45 per credit. Instructors are located at the various 13 member colleges.

All courses taken through CCCOnline are transferred to the college of your choice within the system and read as such on your transcript. Choose Red Rocks as your home college. All courses transfer to any public four-year institution.

AA/AS degrees and certificates are offered in many areas including: accounting, agricultural business, building code enforcement, business, computer networking, construction technology, criminal justice, early childhood, emergency management, library technician, Microsoft certification, occupational safety, public administration, telecommunication, and travel agent. Please see current schedule for a list of available courses.

Information: www.ccconline.org or **303.914.6702**.

Self-Directed/Self-Paced Study

These courses are available on the Lakewood and Arvada campuses, and at the Mountain Center. The objectives and content of self-paced courses are the same as those of classroom courses and are accredited and transferable. Attend an orientation at one of our 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-directed courses are open entry (except for ENG and MAT courses); you may register at any time and have 15 weeks to complete the course work, 10 weeks in summer.
Information: **303.914.6700**

Weekend College

Weekend College offers a variety of courses from one to three credits that students can complete in a short series of weekends. Some courses are offered as hybrids (half online-half in class). For a complete listing of weekend classes, see the last few pages of the schedule.

Information: **303.924.6317**.

Graduation Requirements

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. No diplomas will be issued until all financial obligations to the college have been met. This includes tuition and fees, police tickets and library fines.

Associate of General Studies—Specialist Articulated Transfer Degree

The associate of general studies-specialist degree (60 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
Multimedia Technology
- Graphics and Animation Technology
- Production and Design Technology

***Certificates are also available for each area)**

Associate of General Studies—Generalist Career-Oriented Degree

The Associate of General Studies-Generalist degree **(60 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 Degree

The associate of applied science degree **(60-75 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 may be considered for transfer on an individual basis by the receiving four-year college or university.

1. A minimum of 60 credits is required for the associate of applied science degree. Some degrees require more than 60 credits. These must include 45 credits in specific program courses and 15 credits in general education courses.
(Please see your advisor.)

2. You must earn a cumulative grade point average of 2.0 **(C average)**. Some programs may require you to earn at least a C in specific coursework.

3. If you are planning to transfer to a four-year college or university, you should meet with an advisor for assistance in planning your program of study. **(Advisors can be seen in the Advising Center 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 Center)**.

5. You must complete a minimum of 15 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 Schedule** for that term. **(Apply in Admissions or the Records Office.)** You must apply to graduate within one year after completing requirements.

7. No more than six credits of independent study course work may be applied toward an associate degree program.

8. There is no limit on special-topics courses allowed to count toward a degree. In individual cases, the limit will be determined by the program area. 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. 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, up to three credits of cooperative education may count toward a degree. **(Some AAS degrees will require cooperative education credits.)**

12. Students are encouraged to meet with their **faculty advisors** before beginning any program of study.

Associate of Applied Science Programs

Emphases are available in the following career areas:

Auto Collision Technology*
(In cooperation with and taught at Warren Tech)
Automotive Technology*
(In cooperation with and taught at Warren Tech)
Business Programs:
- Accounting* with emphases in:
  - Accounting Paraprofessional
  - Accounting Technician
- Business (offered through CCCOnline)
- Business Administration with emphases in:
  - Management and Supervision*
  - Real Estate*
  - Interdisciplinary
  - E-business*

Business Technology with emphasis in:
- Administrative Assistant

Computer Information Systems* with emphases in;
- PC Application Specialist*
- Web Development*
- Web Design*
- Multimedia Software Developer*
- Computer Support Technician*
- Network Systems Engineer MCSE*
- Network Associate Cisco*
- Programming*
- Internet Programming Specialist*

Construction Technology with emphases in:
- Air Conditioning, Heating and Refrigeration*
  - Refrigeration*
  - Residential Air Conditioning*
  - Residential Heating, Ventilation, Air Conditioning
- Building Code Enforcement*
- Building Maintenance Technician*
- Carpentry *
- Construction Management*
- Construction Technology Technician*
- Electrical
  - Construction Electrician* (offered through CCCOnline)
  - Electro Mechanical Industrial Maintenance Tech
  - IEBW/NECA Construction Technician
  - Maintenance Electrician*
  - Power Technology (offered through CCCOnline)
  - Data Communication Technician
  - Data Communication Designer
- Fine Woodworking*
- Plumbing
  - United Association of Plumbing and Pipefitting
- Solar Construction*
  - Active
  - Passive
- Apprentice-Related Technology with emphases in:
  (In partnership with the CITC)
  - Carpentry*
  - Drywall Applicator*
  - Electrical*
  - Ironworker*
  - Masonry *
  - Painting*
  - Plumbing*
  - Sheetmetal*

Criminal Justice* with emphases in:
- Corrections
- Law Enforcement
- Victim Assistance Direct Service*

Emergency Management and Planning* (offered through CCCOnline)
Engineering Graphics Technology with emphases in:
- Architecture*
- Mechanical*

Medical Assisting*
Medical Office*
Multimedia Technology with emphases in:
- Graphics/Animation Technology*
- Motion Graphics Animation*
- Production and Design Technology*

Occupational Safety Technology*
(In cooperation with Trinidad State Junior College)
Paramedicine
- Physical Education
- Outdoor Education

Park Ranger Technology*
Public Administration (offered through CCCOnline)
Radiologic Technology
Theatre Technology*
Water Quality Management Technology

*** Certificate is also available.**

Certificates

- Basic Law Enforcement Training Academy
- Business:
  - Accounting Clerk
  - Bookkeeping Clerk
  - Clerical Assistant
  - E-Business
  - Management and Supervision
  - Office Assistant
  - Small Business Management
  - Real Estate
- Computer Information Systems:
  - PC application Specialist
  - Web Development Specialist
  - Web Design Specialist
  - Multimedia Software Specialist
  - Computer Support Technician
  - Network Engineer - MCSE
  - Network Associate - Cisco
  - Programming Specialist
  - Internet Programming Specialist
- Construction Technology:
  - Basic Plumbing and Heating Maintenance
  - Building Code
  - Building Code Enforcement
  - Building Maintenance Technician
  - Carpentry
  - Colorado Plumbing Code Test Preparation
  - Colorado Test Prep
  - Commercial Refrigeration Apprentice
  - Comprehensive Residential Heating Construction
  - Construction Electrician
  - Construction Fundamentals
  - Construction Management
  - Construction Technology Technician
  - Electrical Installation
  - Facility Maintenance I
  - Fine Woodworking
  - HVAC Apprenticeship
  - Journey Level Plumbing
  - Level I Refrigeration
  - Master Craftsman
  - Master Craftsman - Woodworking
  - Maintenance
  - Maintenance Electrician
  - Maintenance Technology
  - National Electrical Code
  - Residential Plumbing Codes
  - Refrigeration
  - Residential Air Conditioning
  - Residential Construction Electrician
  - Residential Forced Air Heating
  - Residential HVAC
  - Residential Hydronic Heating
  - Residential Plumbing
  - Residential Plumbing and Heating
  - Solar Construction Technology
  - Apprentice-Related:
    - Carpentry (ARC)
    - Drywall Applicator (ARD)
    - Electrical (ARE)
    - Ironworker (ARI)
    - Masonry (ARM)
    - Painting (ARB)
    - Plumbing (ARP)
    - Sheet Metal Worker (ARS)
    - Skilled Laborer (ARL)
  - Post-Degree Specialization:
    - Advanced Construction Electrician
    - Advanced Maintenance Electrician
    - Master Craftsman in Fine Woodworking
- Criminal Justice:
  - Basic Law Enforcement Training Academy
  - Investigations
  - Victim Assistance Administration
  - Victim Assistance Direct Service
- Early Childhood Professions:
  - Certificate of Early Childhood Professions
  - Infant/Toddler Group Leader
  - Preschool Group Leader
- Emergency Management and Planning:
- Emergency Medical Services
  - Emergency Medical Technician Certificate I
  - Emergency Medical Technician Certificate II
- Engineering Graphics:
  - Architectural
  - Mechanical
  - Industry Up-Grade
- Fire Science:
  - Code and Ordinance
  - Emergency Medical Services/Paramedic
  - Fire Investigations
  - Hazardous Materials Technology
  - Wildland Management
  - Officer Development
- Health Careers:
  - Holistic Health/Holistic Nursing
  - Medical Assisting
  - Medical Office
  - Nurse Aide
  - R.N. Refresher
  - Physician Assistant
- Multimedia Technology:
  - Graphics and Animation Technology
  - Production and Design
  - Motion Graphics Animation
  - Web Page Design
- Park Ranger Technology:
  - Law Enforcement
  - Outdoor Recreation
  - Public Safety
  - Resource Interpretation Concentration
- Physical Education/Outdoor Education:
  - Ski Area Safety
  - Colorado River Guide
- Public Safety Communications
- Theatre:
  - Stage Carpentry
  - Costume and Fashion Design

Not all programs are available each semester.

Courses numbered below 100 will not count toward any degree.

Noncredit Programs

Independent Study may be taken an unlimited number of times, but no more than six 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**

ROCKY MOUNTAIN EDUCATION CENTER

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

Information: **303.914.6420**

The Red Rocks Training Institute

The Red Rocks Training Institute (RRTI) is a division of Red Rocks Community College that specializes in training and consulting to businesses and organizations in the public and private sector. Training and consulting is customized and individualized to meet the needs of each client.

In addition to customized training, RRTI offers open enrollment courses that include: Beginning and Intermediate Business Spanish, International Finance, E-Marketing/E-Commerce, Gaming Courses, Motorcycle Education and Computer Skills.

Information: **303.914.6767**

Red Rocks Small Business Development Center

The Red Rocks Small Business Development Center (SBDC) provides counseling, training, and information on research assistance to small businesses in all stages of development. The SBDC is sponsored jointly by the college and U.S. Small Business Administration.

Information: **303.277.1840**

The Colorado Environmental Training Center

The Colorado Environmental Training Center has been in existence for more than 10 years, and prior to joining the RMEC, has trained more than 6,000 students. The Colorado Environmental Center offers a diverse selection of courses including entry level, certification upgrades and renewels for supervisors and managers.

Information: **303.914.6420**

Mine Safety Training Center

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

Information: **303.914.6420**

"The City of Lakewood and Red Rocks Community College have an excellent and productive working relationship. Improving of the quality of life of the community is a goal that we both have in common. The programs and classes provide life-long education, which is within reach of all people, regardless of race, income, or gender. I would highly recommend the college. "

Steve Burkholder
Mayor City of Lakewood

Associate of Arts (AA) Degree

2002-2003 Student Evaluation Worksheet

Student _____ **Emphasis in** _____

Social Security No. _____ **Advisor** _____ **Date**

Evaluator _____ **Vice President** _____

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	Public Speaking—(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	160	College Algebra—(4)	❑
MAT	171	Survey of Calculus—(4)	❑
MAT	175	Introduction to Statistics—(3)	❑
MAT	201	Calculus I—(5)	❑
MAT	202	Calculus II—(5)	❑

Social and Behavioral Sciences (9 credits)

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 credits)

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 and Course Number		Course Prefix and Course Number	
_____	❑	_____	❑
_____	❑	_____	❑
_____	❑	_____	❑
_____	❑	_____	❑
_____	❑	_____	❑
_____	❑	_____	❑
_____	❑	_____	❑

Total Credits (60 Credits Required) _____

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

Accounting	ACC	121 and 122
Anthropology	ANT	All courses
Art	ART	All courses
Astronomy	AST	All courses
Biology	BIO	All courses
Business	BUS	115, 216, 217 and 226 (See AA degree, emphasis in business)
Chemistry	CHE	All courses
Computer Info. Systems	CIS	115, 116, 118, 240, 270
Computer Science	CSC	160, 161, 165, 225, 230, 231, 255
Early Childhood Profession	ECP	101, 214, 215 and 227 (formerly ECE)
Economics	ECO	All courses
English	ENG	121, 122, 131, 221and 222
Environmental Science	ENV	101
Foreign Language	FRE, GER, SPA, FOL-	All courses except 101, 102
Geography	GEO	All courses
Geology	GEY	All courses
History	HIS	All courses
Humanities	HUM	All courses
Literature	LIT	All courses
Management	MAN	226 (See AA degree, emphasis in business)
Marketing	MAR	216 (See AA degree, emphasis in business)
Mathematics	MAT	All courses 160 and above
Music	MUS	All courses
Nutrition	NUT	100
Philosophy	PHI	All courses
Physical Education	PHE	All courses (Maximum of three credits apply toward degree)
Physics	PHY	All courses
Political Science	POS	All courses
Psychology	PSY	101, 102, 205, 215, 217, 226 227, 235, 238, 239 and 249
Sociology	SOC	101, 102, 205, 215, 218, 226, 237 and 255
Speech	SPE	All courses
Theatre	THE	All courses

Other (AA) Degree Requirements

1. A minimum of 60 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 above in approved electives.
2. You must complete 26 semester elective credits. These must be college-level transfer courses and may include no more than three credits in physical education (PHE)—see approved electives above. 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, four of those five credits can be applied toward the core requirement. Fewer electives would be required since the remaining one credit can be applied as an elective credit.
3. You must earn a cumulative grade point average of 2.0 (C average) in order to graduate. To receive a core stamp, all core coursework must have a grade C or higher.
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 Center 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 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 Schedule for that term. (Apply in Admissions or the Records Office.) You must apply to graduate within one year of completing requirements
8. No more than six credits of independent study course work may be applied toward an associate degree program.
9. There is no limit on special-topics courses allowed to count toward a degree. In individual cases, the limit will be determined by the program area. 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. 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. Transferability of Cooperative Education/Internship college credit is contingent on approval of the receiving institutions. General education internship credit has been formally articulated for transfer to University of Colorado - Denver and Colorado State University. Transfer to other four-year institutions in the metro area is forthcoming.

Associate of Science (AS) Degree

2002-2003 Student Evaluation Worksheet

Student _____ **Emphasis in** _____

Social Security No. _____ **Advisor** _____ **Date**

Evaluator _____ **Vice President** _____

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 I I—(3)	❑
SPE	115	Public Speaking—(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	212	Art History II—(3)	❑
XXX	111+	Foreign Language I—(5)	❑
XXX	112+	Foreign Language II—(5)	❑
XXX	111+	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—(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	160	College Algebra—(4)	❑
MAT	171	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 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 elective

Course Prefix and Course Number		Course Prefix and Course Number	
_____	❑	_____	❑
_____	❑	_____	❑
_____	❑	_____	❑
_____	❑	_____	❑

Electives (9 Semester Credits—See Next Page)

Course Prefix and Course Number		Course Prefix and Course Number	
_____	❑	_____	❑
_____	❑	_____	❑

Total Credits (60 Credits Required) _____

Additional 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 re - admission 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 or universities in Colorado. All courses will count toward the AS degree. However, transferability depends on the four-year institution. Additional courses may be transferable to one or more of the public four-year colleges or universities in Colorado. For specific information, please consult an advisor in the Advising Center.

Accounting	ACC	121 and 122
Anthropology	ANT	All courses
Art	ART	All courses
Astronomy AST		All courses
Biology	BIO	All courses
Business	BUS	115, 216, 217 and 226 (See AA degree, emphasis in business)
Chemistry CHE		All courses
Computer Info. Sys. (generally transferable)	CIS	115, 116, 118, 240, 270
Computer Science (generally transferable)	CSC	160, 161,165, 225, 230, 231, 255
Early Childhood Profession (formerly ECE)	ECP	101, 214, 215 and 227
Economics ECO		All courses
English	ENG	121, 122, 131, 221, and 222
Environmental Science	ENV	101
Foreign Language	FRE, GER, SPA, FOL-	All courses except 101 and 102
Geography GEO		All courses
Geology	GEY	All courses
History	HIS	All courses
HumanitiesHUM		All courses
Literature	LIT	All courses
Management	MAN	226 (See AA degree, emphasis in business)
Marketing	MAR	216 (See AA degree, emphasis in business)
Mathematics*	MAT	All courses 160 and above except MAT 175
Music	MUS	All courses
Nutrition	NUT	100
Philosophy	PHI	All courses
Physical Education	PHE	All courses (Maximum of three credits applies toward degree)
Physics*	PHY	All courses
Political Science	POS	All courses
Psychology	PSY	101, 102, 205, 215, 217, 226 227, 235,238, 239 and 249
Sociology	SOC	101, 102, 205, 215, 218, 226, 237and 255
Speech	SPE	All courses
Theatre	THE	All courses

Other (AS) Degree Requirements

1. A minimum of 60 credits is required for the associate of science degree. These must include 34 credits in core transfer courses, 18 approved elective credits in the asterisk (*) areas specified above and nine elective credits from those listed above.
2. You must complete an additional 18 credits in any of the science or asterisk (*) disciplines listed above. 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 and 112), 5 credits each], to satisfy the humanities requirement in the core curriculum, six of those 10 credits can be applied toward the core requirement. Fewer electives would be required since the remaining four credits can be applied as elective credits.
3. You must earn a cumulative grade point average of 2.0 (C average) in order to graduate. To receive a core stamp, all core coursework must have a grade C or higher.
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 Center 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 Center).
6. You must complete a minimum of 15 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 Schedule for that term. (Apply in Admissions or the Records Office.) You must apply to graduate within one year of completing requirements
8. No more than six 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. 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. Transferability of cooperative education/internship college credit is contingent on approval of the receiving institutions. **General education** internship credit has been formally articulated for transfer to University of Colorado - Denver and Colorado State University. Transfer to other four-year institutions in the metro area is forthcoming.

Associate of General Studies - Generalist- Degree

2002-2003 Student Evaluation Worksheet

Student _____ **Emphasis in** _____

Social Security No. _____ **Advisor** _____ **Date**

Evaluator _____ **Vice President** _____

General Education Requirements (18 Semester Credits)

Communication (6 Credit Hours)

Complete 2 of the 3 courses **Credits**

ENG	121	English Composition I	(3)	❑
ENG	122	English Composition II	(3)	❑
		or		
SPE	115	Public Speaking	(3)	❑

Arts and Humanities (3 Credit Hours)

Select 1 course

ART	____		(3)	❑
XXX	____	Foreign Language I or higher	(5)	❑
HUM	____		(3)	❑
LIT	____		(3)	❑
MUS	____		(3)	❑
PHI	____		(3)	❑
THE	____		(3)	❑

Mathematics (3 Credit Hours)

Credits

Select 1 course MAT 160 or above

MAT	____	(3-4)	❑

Social and Behavioral Sciences (3 Credit Hours)

Select 1 course. **Credits**

ANT	( )	❑
ECO	( )	❑
GEO	( )	❑
HIS	( )	❑
POS	( )	❑
PSY	( )	❑
SOC	( )	❑

Science (3 Credit Hours)

Select 1 course.

AST	( )	❑
BIO	( )	❑
CHE	( )	❑
GEY	( )	❑
PHY	( )	❑

College Level Electives—(10 Semester Credits)

Select from any of the above courses.

Course Prefix and Number	Course Prefix and Number	Course Prefix and Number

Professional Electives—(9 Semester Credits)

Selected from professional area courses generally recognized as transferable.

Course Prefix and Number	Course Prefix and Number	Course Prefix and Number

General Electives—(23 Semester Credits)

Select from occupationally prefixed courses (applied arts and sciences) and/or general electives. Electives must be courses numbered 121 and above in ENG, 121 and above in MAT, and 100 and above in all other areas. PHE is limited to three credits as is cooperative education numbered 297.

Course Prefix and Number	Course Prefix and Number	Course Prefix and Number

Total Credits (60 Credits Required) _____

Additional 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 numbered below 100 will not count toward any degree.

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 Center.

1. A minimum of 60 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) in order to graduate.
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 Center 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 Center) .
5. You must complete a minimum of 15 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 Schedule for that term. (Apply in Admissions or the Records office.) You must apply to graduate within one year of completing requirements
7. No more than 6 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 three credits of Cooperative Education may count toward a degree.

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 Center.

Accounting	ACC	121 and 122
Anthropology	ANT	All courses
Art	ART	All courses
Astronomy	AST	All courses
Biology	BIO	All courses
Business	BUS	115, 216, 217 and 226 (See AA degree, emphasis in Business)
Chemistry	CHE	All courses
Computer Info. Sys. (generally transferable)	CIS	115, 116, 118, 240, 270 261, 276
Computer Science* (generally transferable)	CSC	160, 161, 165, 225, 230, 231, 255
Early Childhood Profession	ECP	101, 214, 215 and 227 (formerly ECE)
Economics	ECO	All courses
English	ENG	121, 122, 131, 221 and 222
Environmental Sci.	ENV	101
Foreign Language	FRE, GER, SPA, FOL-	All courses except 101 and 102
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	All courses 160 and above
Music	MUS	All courses
Nutrition	NUT	100
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, 205, 215, 217, 226 227, 235, 238, 239, 249 and 250
Sociology	SOC	101, 102, 205, 215, 218, 226, 237and 255
Speech	SPE	All courses
Theatre	THE	All courses

Associate of General Studies (AGS-Specialist) Degree

2002-2003 Student Evaluation Worksheet

Student _____ **Emphasis in** _____

Social Security No. _____ **Advisor** _____ **Date**

Evaluator _____ **Vice President** _____

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	Public Speaking—(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	160	College Algebra—(4)	❑
MAT	171	Survey of Calculus—(4)	❑
MAT	175	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)	❑

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

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

Course Prefix and Course Number		Course Prefix and Course Number	
_____	❑	_____	❑
_____	❑	_____	❑
_____	❑	_____	❑
_____	❑	_____	❑
_____	❑	_____	❑
_____	❑	_____	❑
_____	❑	_____	❑

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 corecourse 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.

Additional 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 re-admission 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.

Other (AGS-Specialist) Degree Requirements

1. A minimum of 60 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 three 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 corecurriculum, four of those five credits can be applied toward the core requirement. Fewer electives would be required since the remaining one credit can be applied as an elective credit.
3. You must earn a cumulative grade point average of 2.0 (C average) in order to graduate. To receive a core stamp, all core coursework must have a grade C or better.
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 Center 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 Center) .
6. You must complete a minimum of 15 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 Schedule for that term. (Apply in Admissions or the Records office.) You must apply to graduate within one year of completing requirements
8. No more than six 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 three credits of cooperative education may count toward a degree.

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

Accounting	ACC	121 and 122
Anthropology	ANT	All courses
Art	ART	All courses
Astronomy	AST	All courses
Biology	BIO	All courses
Business	BUS	115, 216, 217 and 226 (See AA degree, emphasis in business)
Chemistry	CHE	All courses
Computer Info. Sys. (generally transferable)	CIS	115, 116, 118, 240, 270
Computer Science (generally transferable)	CSC	160, 161, 165, 225, 230, 231, 255
Early Childhood Profession	ECP	101, 214, 215 and 227 (formerly ECE)
Economics	ECO	All courses
English	ENG	121, 122, 131, 221 and 222
Environmental Sci.	ENV	101
Foreign Language	FRE, GER, SPA, FOL-	All courses except 101 and 102
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	All courses 160 and above
Music	MUS	All courses
Nutrition	NUT	100
Philosophy	PHI	All courses
Physical Education	PHE	All courses (Maximum of three credits apply toward degree)
Physics	PHY	All courses
Political Science	POS	All courses
Psychology	PSY	101, 102, 205, 215, 217, 226 227, 235, 238, 239 and 249
Sociology	SOC	101, 102, 205, 215, 218, 226, 237and 255
Speech	SPE	All courses
Theatre	THE	All courses

Associate of Applied Science (AAS) Degree

2002-2003 Student Evaluation Worksheet

Name _____ Emphasis _____

Social Security No. _____ Advisor _____

Proposed Term of Graduation _____ Catalog Year _____

*****Please flag all courses in progress required for graduation*****

Degree Requirements

Specific Program Requirements	Credits
Substituted Courses (form required)	
Total Specific Requirements (45 required)	

Specific Program Requirements	Credits
Communications (ENG, SPE)	3
Mathematics (MAT 100 and above)	3
Credit from any 2 of the following 3 areas:	**6**
Arts and Humanities (ART, FRE, GER, HUM, LIT, MUS, PHI, SPE, SPA,THE)	
Science (AST, BIO, CHE, GEY, PHY)	
Social Science (ANT, ECO, HIS, POS, PSY, SOC)	
Note: Individual departments may specify particular courses for general education.	
Electives from any of the above subjects:	3
Total General Education Credits (15 required)	

Grand Total _____

Authorized Personnel

Comments

_____

_____

_____

_____

Approved _____ Advisor's Signature _____

Denied _____ Vice President's Signature _____

Associate of Applied Science (AAS) Degree

2002-2003 Student Evaluation Worksheet

(See specific program advisor for student worksheet)

Additional 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 numbered below 100 will not count toward any degree.

Other (AAS) Degree Requirements

1. A minimum of 60 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 earn a cumulative grade point average of 2.0 (C average) in order to graduate.
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 Center 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 Center) .
5. You must complete a minimum of 15 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 Schedule for that term. (Apply in Admissions or the Records Office.) You must apply to graduate within one year of completing requirements
7. No more than six 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 three credits of cooperative education may count toward a degree. (Some AAS degrees will require cooperative education credits.)

Instructional Programs

Register online at:
www.rrcc.edu

opportunities, options, excellence

Course numbers and descriptions are subject to change. The Colorado Community College System has begun a project to set common course numbers and common competency throughout the system. This will make it easier for students to transfer and ensure curriculum quality across our system. The project will not jeopardize student credit and transfer. Check the Web site at www.rightchoice.com for updated informatkion on course numbers and course competencies.

Accounting

Degree:
Accounting Paraprofessional
Accounting Technician

Certificate:
Bookkeeping Clerk
Accounting Clerk

Red Rocks Community 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 the college to explore all your educational options.

Degree Area of Emphasis:
Accounting Paraprofessional

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

Required Accounting Courses

ACC	121	Accounting Principles I	4
ACC	122	Accounting Principles II	4
ACC	125	Computerized Accounting and Lab	4
ACC	135	Spreadsheet App. for Acct. and Lab	4
ACC	138	Payroll and Sales Tax	3
ACC	131	Income Tax I	3
ACC	211	Intermediate Accounting I	4
ACC	226	Cost Accounting	3

Required Business Courses

BTE	108	Ten-Key by Touch and Lab	1.3
*or elective with approval of advisor			
BUS	115	Introduction to Business	3
BUS	216	Legal Environment of Business	3
BUS	217	Business Comm./Report Writing	3
CIS	118	Intro to PC Applications and Lab	4
*Choose from accounting, business or Computer electives with advisor approval.			3

Required General Education Courses

SPE	125	Interpersonal Communication	3
	or		
SPE	105	Communication in the Workplace	
ENG	121	English Composition I	3
MAT	1XX		
Any MAT course numbered 100 or higher			3
Credit from two of the following three areas:			
Social Science (ANT, ECO, GEO, HIS, POS, PSY, SOC)			
Arts and Humanities (ART, SPA, FRE,GER, HUM, LIT, MUS, PHI, THE)			
Science (AST, BIO, CHE, GEY, PHY)			6
Total Required Credits			**61.3**

*See faculty advisor for approval; you must have C or better in all ACC courses to graduate. For a sequential course scheduling plan, please see an accounting faculty advisor. Also see an advisor if you plan to transfer.

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 Accounting Courses

ACC	101*	Fundamentals of Accounting	3
ACC	121	Accounting Principles I	4
ACC	122	Accounting Principles II	4
ACC	125	Computerized Accounting and Lab	4
ACC	135	Spreadsheet App. for Accounting and Lab	4
ACC	138	Payroll and Sales Tax	3

Required Business Courses

BTE	108	Ten-Key by Touch and Lab	1.3
		or *elective with approval of advisor	
BUS	115	Introduction to Business	3
BUS	216	Legal Environment of Business	3
BUS	217	Business Comm./Report Writing	3
CIS	118	Intro. to PC Applications and Lab	4
CIS	135	Complete PC Word Processing	4

*Choose from Accounting, Business or Computer electives with advisor approval. 6

Required General Education Courses

SPE	125	Interpersonal Communication	3
	or		
SPE	105	Communication in the Workplace	
ENG	121	English Composition I	3
MAT	1XX	Any MAT course numbered 100 or higher	3
Credit from two of the following three areas			6
Social Science (ANT, ECO, GEO, HIS, POS,PSY, SOC)			
Arts and Humanities (ART, SPA, FRE, GER, HUM, LIT, MUS, PHI, THE)			
Science (AST, BIO, CHE, GEY, PHY)			
Total Required Credits			**61.3**

*See faculty advisor for approval; you must have C or better in all ACC courses to graduate. For a sequential course scheduling plan, please see an accounting faculty advisor. Also see an advisor if you plan to transfer.

Certificate: Bookkeeping Clerk

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

Required Courses:

ACC	101*	Fundamentals of Accounting	3
ACC	138	Payroll and Sales Tax	3
BTE	100*	Touch Keyboarding and Lab	3-4
	and		
BTE	108*	Ten-Key by Touch and Lab	
		or *elective with approval of advisor	
CIS	118	Intro. to PC Applications and Lab	4
		Total Required Credits	**13**

*See faculty advisor for approval; you must have C or better in all ACC courses to graduate. For a sequential course scheduling plan, please see an accounting faculty advisor. Also see an advisor if you plan to transfer.

Certificate: Accounting Clerk

Upon successful completion of this program you should possess the skills and knowledge to perform a variety of functions in an accounting system. Examples include bookkeeper, inventory clerk, payroll clerk, accounts payable clerk, accounts receivable clerk and fixed assets clerk.

Required Courses

ACC	101*	Fundamentals of Accounting	3
ACC	121	Accounting Principles I	4
ACC	125	Computerized Accounting and Lab	4
ACC	135	Spreadsheet Applications	4
		for Acct and Lab	
ACC	138	Payroll and Sales Tax	3
BTE	100*	Touch Keyboarding and Lab	3-4
	and		
BTE	108*	Ten-Key by Touch and Lab	
		or *elective with approval of advisor	
BUS	115	Introduction to Business	3
CIS	118	Intro. to PC Applications and Lab	4
SPE	125	Interpersonal Communications	3
	or		
SPE	105	Communications in the Workplace	
		Total Required Credits	**31**

*See faculty advisor for approval; you must have "C" or better in all ACC courses to graduate. For a sequential course scheduling plan, please see an accounting faculty advisor. Also see an advisor if you plan to transfer.

Air Conditioning Apprenticeships

(See Construction Technology)

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	216	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	Public Speaking	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 160, 171, 175, 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,
9
201, 202; POS 105,115; 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

Auto Collision Technology

(In cooperation with and taught 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 46 ACT credits. 15 general education areas of instruction are required for the AAS degree. Some of the courses may transfer to a bachelor's degree in automotive management.

It is imperative that all students comply with personal and environmental safety practices associated with clothing, respiratory protection, eye protection, hand tools, power tools power equipment proper ventilation and the handling, storage and disposal of chemicals/materials in accordance with local state and federal safety and environmental regulations.

Associate of Applied Science

NATEF Areas	**Credits**
Non-Structural Analysis and Damage Repair	2-34
Painting and Refinishing	1-46
Plastic Repair 1-20	
Structural Analysis and Damage Repair	1-34
Mechanical and Electrical Components	1-39
Insurance	1-20
General Education Requirements	
English/Speech (COM, ENG, SPE—any level)	3
Mathematics (100 or above)	3
Credit from any two of the following three areas:	**9**
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 Credits	**61**

For the following certificates please check with the instructor/advisor or the course description section or this catalog for prerequisites.

Non-Structural Analysis/Damage Repair

			Credits
ACT	111	Metal Welding and Cutting I	3
ACT	121	Non-Structural Repair Preparation	3
ACT	122	Panel Repl. and Alignment	3
ACT	123	Metal Finishing and Body Filling	3
ACT	211	Metal Welding and Cutting II (co-requisite)	2
ACT	217	Auto Collision Technology Lab	1-9
ACT	219	Metal Welding and Cutting Internship	1-9
ACT	221	Moveable glass and Hardware	2

Painting and Refinishing

			Credits
ACT	141	Refinishing Safety	1
ACT	142	Surface Preparation I	2
ACT	143	Spray Equipment Operation	2
ACT	144	Refinishing I	2
ACT	241	Finish Defects, Causes and Cures	3
ACT	242	Surface Preparation II	3
ACT	243	Refinishing II	2
ACT	244	Final Detail	2
ACT	247	Auto Collision Tech Lab Experience	1-9
ACT	249	Painting and Refinishing Internship	1-20

Plastic Repair

			Credits
ACT	151	Plastics and Adhesives I	1
ACT	251	Plastics and Adhesives II	1
ACT	257	Auto Collision Tech Lab Experience	1-9
ACT	259	Plastics and Adhesives Internship	1-9

Structural Analysis and Damage Repair

			Credits
ACT	111	Metal Welding and Cutting I (Co-requisite)	3
ACT	131	Structural Damage Diagnosis	3
ACT	211	Metal Welding and Cutting II (co-requisite)	3
ACT	231	Advanced Structural Damage Diagnosis and Repair	3
ACT	232	Fixed Glass	4
ACT	237	Auto Collision Tech Lab Experience	1-9
ACT	239	Strucutural Analysis and Damage Repair Internship	1-9

Mechanical and Electrical Components

			Credits
ACT	161	Suspension I Steering	2
ACT	162	Heating and Air Conditioning	2
ACT	163	Brakes	2
ACT	164	Fuel, Intake and Exhaust Systems	1
ACT	165	Drive Train	1
ACT	166	Electrical	2
ACT	167	Cooling Systems	2
ACT	266	Restraint Systems	1
ACT	267	Auto Collision Tech Lab Experience	1-9
ACT	269	Mechanical and Electrical Components Internship	1-9

Insurance

			Credits
ACT	279	Insurance Internship	1-20

Automotive Technology

(In cooperation with and taught at Warren Tech)

Degree: Associate of Applied Science

Certificates: Awarded upon completion of at least one NATEF specialty area and at least 60 AUM credits

Master Technician: Completion of all eight 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.

Degree: Associate of Applied Science

The Associate of Applied Science degree (60—66 credits), requires a minimum of 15 credits of academic general education courses and a minimum of 45 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 credits
Mathematics (MAT 100 or above) minimum 3 credits
Take a minimum of 9 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 (Required course for all students new to the program)	1

NATEF Specialty Area Certificates:

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	2
		Total Required Credits	**10**

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
AUM	**134**	**Auto Parts Specialist**	**7**
		Total Required Credits	**8**

Other Electives

AUM 297 Cooperative Education	1 - 3
AUM 299 Independent Study	1 - 3

No more than five 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 semester.

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 requirements for that specialty area. Successful completion of all AUM courses in all eight of the NATEF specialty areas results in a 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.

Recommended Courses (at least 39 credits)

			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	160	College Algebra (Core)	4
PHY	111	Physics: Algebra-based I (Core)	5
BIO	201	Human Anatomy and Physiology I	4
BIO	202	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 (Core)	4

Core Curriculum Requirements

English/Speech

ENG	121	English Composition I	3
ENG	122	English Composition II	3
SPE	115	Public Speaking	3

Humanities (any two courses from the following) 6
ART 110, 211, 212; Foreign Language 111, 112, 211, 212; HUM 121, 122, 123; LIT 115, 201, 202; MUS 120, 221, 222; 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, 115; 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	202	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	160	College Algebra (Core)	4
BIO	211	Cellular Biology	4
BIO	212	Molecular Biology	4

Core Curriculum Requirements

English/Speech

ENG	121	English Composition I	3
ENG	122	English Composition II	3
SPE	115	Public Speaking	3

Humanities (any two courses from the following) 6
ART 110, 111, 112; Foreign Language 111, 112, 211, 212; HUM 121, 122, 123; LIT 115, 201, 202; MUS 120, 221, 222; 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, 115; PSY 101, 102; SOC 101, 102 6

Total Required Credits 60

Blueprints
Building Codes
Building Maintenance

(See Construction Technology)

Business Administration

Degree: Associate of Applied Science
Certificates: Variable

Business organizations are 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.

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.

The associate of applied science degree in business administration is available with an emphasis in the following areas:

- E-Business
- Interdisciplinary
- Management and Supervision
- Real Estate

Certificates are also available in the following areas:

- E-Business
- Management and Supervision
- Real Estate
- Small Business Management

See also Business - Associate of Applied Science section for information regarding an AAS in business delivered entirely over the Internet.

Please contact your business administration faculty advisor for choice of electives and general education courses, program planning, and transfer information. Please see your advisor if you plan to transfer.

Business Core: (Required for all areas of emphasis)

ACC	121	Accounting Principles I	4
ACC	122	Accounting Principles II	4
BUS	115	Introduction to Business	3
BUS	205	Introduction to E-Business	3
BUS	216	Legal Environment of Business	3
BUS	219	Business Contract Law	1
BUS	217	Business Communication and Report Writing	3
MAN	226	Principles of Management	3
MAR	216	Principles of Marketing	3
		Total Business Core Credits	**27**

General Education Courses:
(Required for all areas of emphasis)

ENG	121	English Composition I	3
MAT	1XX	Any MAT course 100 or higher	3
ECO	201	Principles of Macroeconomics	3
PHI	112	Ethics	3
XXX	XXX	Elective (see advisor for approval)	3
		Total General Education Core Credits	**15**

Area of Emphasis: E-Business

Business Core	27
General Education Core	15

Additional Required Courses

BUS	210	E-Commerce	3
BUS	215	Global E-Commerce	3
MAR	220	E-Marketing	3
CIS	XXX	CIS Elective	3
XXX	XXX	Electives (see advisor for approval)	
Choose from ACC, BUS, CIS, MAN, MAR, SBM			9
			21
		Total Required Credits	**63**

Area of Emphasis: Interdisciplinary

This area of emphasis is for students who have started or completed vocational programs like construction technology or fire science and who would like to supplement their trade knowledge with business and management knowledge.

Business Core			27
General Education Core			15
Additional Required Courses			
XXX	XXX	Interdisciplinary Credits*	15
XXX	XXX	Electives (see advisor for approval)	
Choose from ACC, BUS, CIS, MAN, MAR, SBM			6
			21
		Total Required Credits	**63**

*****At least 15 credits in 100-level courses (or higher) in one vocational program within the Community Colleges of Colorado
Or
The equivalent of the 15 credits (mentioned above) through an articulation agreement with the particular educational institution (see business administration advisor for approval)

*General Educational courses already taken through a Community Colleges of Colorado vocational program may be accepted for these requirements (see business administration advisor).

Area of Emphasis: Management and Supervision

Business Core			27
General Education Core			15
Additional Required Courses			
CIS	118	Introduction to PC Applications	4
MAN	116	Principles of Supervision	3
MAN	117	Time Management (Fall only)	1
XXX	XXX	Electives (see advisor for approval)	
Choose from ACC, BUS, CIS, MAN, MAR, SBM			12
			20
		Total Required Credits	**62**

Area of Emphasis: Real Estate

Business Core			27
General Education Core			15
Additional Required Courses			
REE	100	Real Estate Broker's Course	11
CIS	118	Introduction to PC Applications	4
MAN	116	Principles of Supervision	3
XXX	XXX	Electives (see advisor for approval)	
Choose from ACC, BUS, CIS, MAN, MAR, SBM			3
			21
		Total Required Credits	**63**

Certificate: E-Business*

BUS	205	Introduction to E-Business	3
BUS	210	E-Commerce	3
BUS	215	Global E-Commerce	3
MAR	220	E-Marketing	3
XXX	XXX	CIS Elective or Cooperative Education (see advisor for approval)	3
		Total Required Credit	**15**

Students in the E-Business Certificate Program must achieve a grade of C or better in all classes to graduate.

*This certificate is designed for students who either have taken prior business courses or have extensive business experience.

Certificate: Management and Supervision

ACC	121	Accounting Principles I	4
BUS	115	Introduction to Business	3
BUS	216	Legal Environment of Business	3
BUS	219	Business Contract Law	1
BUS	217	Business Comm. and Report Writing	3
CIS	118	Introduction to PC Applications	4
MAN	116	Principles of Supervision	3
MAN	226*	Principles of Management	3
MAR	216*	Principles of Marketing	3
XXX	XXX	Business Elective (see advisor for approval)	3
		Total Required Credits	**30**

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

Certificate: Real Estate

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	103	Legal Aspects of a Small Business	1
SBM	106	Recordkeeping for a Small Business	1
SBM	108	Marketing for a Small Business	1
SBM	110	Managing a Small Business	1
SBM	112	Financing a Small Business	1
SBM	120	Writing a Business Plan	1
Elective Courses: (select 1 credit from the following)			
MAN	117	Time Management (Fall only)	1
SBM	290	Special Topics (Spring only)	1
XXX	XXX	See your Faculty Advisor	_
		Total Required Credits	**8**

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 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 most of the public four-year colleges and universities in the state. Please see a faculty advisor or the Advising Office for more specific information.

Required Business Courses

ACC	121	Accounting Principles I	4
ACC	122	Accounting Principles II	4
BUS	115	Introduction to Business	3
BUS	216	Legal Environment of Business	3
BUS	217	Business Comm./Report Writing	3
BUS	226	Business Statistics	3
CIS	118	Intro. To PC Applications	4
MAN	226*	Principles of Management	3
MAR	216*	Principles of Marketing	3
		Required Business Courses	**30**

Required Core Curriculum

English/Speech

ENG	121	English Composition I	3
ENG	122	English Composition II	3
SPE	115	Public Speaking	3

Humanities
(courses from at least 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 105, 211, 212 — 9

Mathematics (Mathematics requirements vary at four-year schools. See advisor.)

MAT	160	College Algebra	
	OR		
MAT	171	Survey of Calculus	4

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

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

(Any course from the following; see advisor)
ANT 101, 111; GEO 105; HIS 101, 101, 201, 202; POS 105, 115; PSY 101, 102; SOC 101, 102 — 3

Required Core Curriculum — **35**

Total Required Credits — **65**

*Must complete ACC 121, ACC 122, BUS 226 and either ECO 201 or ECO 202 and have sophomore standing before enrolling in MAN 226 or MAR 216.

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 business, governmental agencies and other institutions which employ persons in office occupations. If you aspire to advanced work placement, you should expect to have several years of work experience in addition to the degree.

BTE 111 and BTE 112 may be waived or challenged with a validated typing speed of 65 wpm for five minutes with five or fewer errors. Please see your BTE faculty advisor for choice of elective 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

			Credits
ACC	101	Fundamentals of Accounting	3
BTE	102	Keyboarding Applications I	3
BTE	111	Keyboarding Skillbuilding I	2
BTE	112	Keyboarding Skillbuilding II	3
BTE	225	Administrative Office Management	3
BTE	201	Office Simulating I	4
BTE	166	Business Editing Skills	3
BTE	125	Records Management	3
CIS	145	Electronic Filing	4
BTE	202	Office Simulations II	4
BTE	297	Cooperative Education/Internship	3
CIS	118	Introduction to PC Applications	4
CIS	135	Complete PC Word Processing	4
CWB	100	Introduction to the Internet	1.33
CIS	155	Complete PC Spreadsheet	4
ENG	121	English Composition I	3
MAT	160	College Algebra	4
General Education Courses			9
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)			
		Total Required Credits	**64.33**

Certificate: Clerical Assistant

			Credits
BTE	102	Keyboarding Applications I	3
BTE	166	Business Editing Skills	3
BTE	125	Filing and Records Management	3
BTE	297	Cooperative Education/Internship	3
BUS	110	Mathematics for Business/ Personal Finance	3
CIS	118	Introduction to PC Applications	4
ENG	115	Technical English	3
Elective		CIS 135, CIS 155, BTE 201, BTE 225, CIS 145, BTE 140	5-8
		Total Required Credits	**27-30**

Certificate: Office Assistant

			Credits
BTE	100	Computer Keyboarding	2
BTE	102	Keyboarding Applications I	3
BTE	111	Keyboarding Skillbuilding I	2
BTE	225	Administrative Office Management	3
BTE	201	Office Simulations I	4
BTE	166	Business Editing Skills	3
BTE	125	Records Management	3
BTE	162	Electronic Filing	4
BTE	297	Cooperative Education/Internship	3
BUS	110	Mathematics for Business/Personal Finance	3
CIS	118	Introduction to PC Applications	4
CIS	135	Complete PC Word Processing	4
CIS	100	Introduction to the Internet	1.33
CIS	155	Complete PC Spreadsheet	4
ENG	115	Technical English	3
		Career Math	3
		Total Required Credits	**46.33**

Business

Degree: Associate of Applied Science (offered through CCCOnline)

For more information go to www.ccconline.org

Required Major Courses

ACC	121	Accounting Principles I	4
ACC	122	Accounting Principles II	4
BUS	115	Introduction to Business	3
BUS	158	Human Resource Management	3
BUS	216	Legal Environment of Business	3
BUS	217	Business Communication and Report Writing	3
BUS	226	Business Statistics	3
MAN	216	Small Business Management	3
MAN	226	Principles of Management	3
MAR	111	Principles of Sales	3
MAR	216	Principles of Marketing	3
CIS	115	Introduction to Computer Systems	4
CIS	118	Introduction to PC Applications	4
CIS	155	Complete PC Spreadsheets	4

General Education Courses

ECO	201	Principles of Macroeconomics	3
ECO	202	Principles of Microeconomics	3
ENG	121	English Composition l	3
ENG	122	English Composition ll	3
MAT	160	College Algebra	4
SPE	115	Public Speaking	3
		Total Required Credits	**66**

Carpentry

(See Construction Technology)

Chemistry

Degree: Associate of Science

The completion of the following courses is appropriate for those planning 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
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	Public Speaking	3

Humanities* (any two courses from the following) 6
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

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, 115; PSY 101, 102; SOC 101, 102

Total Required Credits 60

*You are encouraged to complete GER 111 and 112 to satisfy the arts and humanities requirement.

Codes

(See Construction Technology)

Communication

(See Speech Communication)

Computer Information Systems

Degree: Associate of Applied Science
Certificates: Variable Credits

Course numbers, degrees and certificates are being revised. More information at: **www.rrcc-online.com/comptech/fix/~comtech**

The computer information systems associate of applied science degree is designed to prepare you for entry-level positions in all of the areas of emphasis that are listed following the core requirements.

Core Curriculum Requirements for all Areas of Emphasis			**Credits**
ACC	121	Accounting Principles I	4
		or	
		Faculty advisor approved business course	3
ENG	121	English Composition I	3
ENG	122	English Composition II	3
		or	
ENG	131	Technical Writing I	3
MAT	160	College Algebra (or higher)	4
SPE	115	Principles of Speech Communication	3
CIS	270	System Analysis and Design	5
CIS	280	Project Development	4
CIS	281	Ethics in Computer Technology	1
Credit from any two of the following three areas:			
Humanities (ART, FRE, GER, HUM, LIT, PHI, SPA, THE)			
Science (AST, BIO, CHE, GEY, PHY)			
Social and Behavioral Science			
(ANT, ECO, GEO, HIS, POS, PSY, SOC)			6
		Total Required Core Credits	**32-33**

Area of Emphasis: Web Development

This area of emphasis is designed to prepare you for an entry-level position in Internet Web development with a focus on the programming and database aspects of Web sites. Course offerings provide a mix of programming and applications that examine both the client and server aspects of Web sites. Creation of dynamic Web pages involving databases is explored.

			Credits
CWB	175*	Complete Web Authoring: HTML	4
CIS	145	Complete PC Database (Access)	4
CWB	262*	ColdFusion	4
CIS	240	Database Management Systems (Oracle or Microsoft SQL Server)	4
CSC	160*	Computer Science I	5
CWB	210*	CGI and Perl	4
Faculty Advisor approved electives			8
Minimum Required Credits for Area of Emphasis			33
Core Curriculum Requirements			32-33
Total Required Credits for Associate of Applied Science Degree			**65-66**

*These course numbers are going to change for the Fall 2002 semester to CNT 200 and CNT 201.

Area of Emphasis: Web Design

This area of emphasis is designed to prepare you for an entry-level position in Internet Web design. You will learn necessary skills using a variety of our current programs, all focusing on page design and implementation.

			Credits
CIS	115	Introduction to Computer Information Systems	4
		and	
CIS	116	Logic and Program Design	3
		or	
CSC	160*	Computer Science I	5
CWB	175*	Complete Web Authoring: HTML	4
CWB	110	Web Layout and Design Concepts	4
CWB	135*	Complete Web Editing Tools (Dreamweaver 4.0)	4
CWB	161	Image Editing I (Adobe Photoshop)	4
CWB	235*	Complete Web Animation (Flash)	4
CWB	205	Complete Web Scripting (JavaScript)	4
Faculty advisor approved electives			4
Minimum Required Credits for Area of Emphasis			33-35
Core Curriculum Requirements			32-33
		Total Required Credits	**65-68**

*Course(s) taken to complete one degree or certificate, but offered in another degree/certificate, count for only one degree or certificate. Faculty advisor approved elective(s) may be used to replace the duplicated course(s).

**Ethics (CIS 281) is required for only the first degree or certificate pursued by a student. A faculty advisor approved elective may be used to replace CIS 281 in subsequent degrees or certificates.

Area of Emphasis: PC Applications Specialist

This area of emphasis is designed to prepare you as an entry-level microcomputer specialist with an emphasis in applications. Upon completion of the course work, you will be prepared to sit for the Microsoft Office Users Specialist (MOUS) examinations for MOUS certification.

			Credits
CIS	115	Introduction to Computer Information Systems	4
		and	
CIS	116	Logic and Program Design	3
		or	
CSC	160	Computer Science I	5
CIS	118	Introduction to PC Applications or equivalent CIS 122, CIS 130, CIS 140 and CIS 150	4
CIS	123	Advanced Windows	1.33
CIS	131	Intermediate PC Word Processing	1.33
		and	
CIS	132	Advanced PC Word Processing or equivalent CIS 135 Complete PC Word Processing	1.33 4
CIS	141	Intermediate PC Database	1.33
		and	
CIS	142	Advanced PC Database or equivalent CIS 145 Complete PC Database	1.33 4
CIS	151	Intermediate PC Spreadsheet	1.33
		and	
CIS	152	Advanced PC Spreadsheet or equivalent CIS 155 Complete PC Spreadsheet	1.33 4
CIS	165	Complete Presentation Graphics	4
CNT	200	Introduction to Networking	4
Faculty Advisor approved electives			4
Minimum Required Credits for Area of Emphasis			30.33
Core Curriculum Requirements			32-33
		Total Required Credits	**62.33-65.33**

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.

			Credits
CIS	115	Introduction to Computer Information Systems	4
		and	
CIS	116	Logic and Program Design	3
		or	
CSC	160	Computer Science I	5
CWB	140	Introduction to Multimedia	4
CWB	141	Multimedia Software Modeling (Director)	4
CWB	142	Multimedia Software Authorship (Authorware)	4
CWB	143	Multimedia Software Design/Development	4
CWB	161	Image Editing I (Adobe Photoshop)	4
Faculty Advisor approved Database course			4
Faculty Advisor approved electives			8
Minimum Required Credits for Area of Emphasis			37-39
Core Curriculum Requirements			32-33
		Total Required Credits	**69-72**

Area of Emphasis: Computer Support Technician

This area of emphasis is designed to provide both hardware and operating systems experience needed to work as a support person for both local and wide area network environments.

			Credits
CNT	100*	Networking Hardware I: A+	5
CNT	101*	Networking Hardware II: A+	5
CNT	210**	Networking I: Net+	5
CNT	211**	Networking II: Net+	5
CWB	175	Complete Web Authoring: HTML	
		or	
Faculty Advisor approved course			4
Faculty Advisor approved electives			8
Minimum Required Credits for Area of Emphasis			32
Core Curriculum Requirements			32-33
		Total Required Credits	**64-65**

*These course numbers are going to change for the Fall 2002 semester to CNT 200 and CNT 201.
**These courses are not available until the Fall 2002 semester.

Area of Emphasis: Network System Engineer MCSE

This area of emphasis is designed to prepare you for the Microsoft Certified System Engineer Windows 2000 certification.

			Credits
CIS	115	Introduction to Computer Information Systems	4
		and	
CIS	116	Logic and Program Design	3
		or	
CSC	160	Computer Science I	5
CNT	231	MCSE I: Windows 2000 Network and Operating Essentials	4
CNT	232	MCSE II: Implementing Windows 2000 Professional and Server	4
CNT	233	MCSE III: Implementing a Windows 2000 Network Infrastructure	4
CNT	234	MCSE IV: Implementing and Administering Windows 2000 Directory Services	4
CNT	241	MCSE V: Designing a Windows 2000 Directory Service Infrastructure	4
Electives (Choose two from the following four courses with faculty advice.)			
CNT	242	MCSE VI: Designing a Windows 2000 Secure Network	
CNT	243	MCSE VII: Designing a Windows 2000 Network Infrastructure	
CNT	235	MCSE: Administering a SQL Server Database	
CNT	244	MCSE: Implementing and Managing MS Exchange 2000	8

Minimum Required Credits for Area of Emphasis	33-35
Core Curriculum Requirements	32-33
Total Required Credits for Associate of Applied Science Degree	**65-68**

Area of Emphasis: Cisco Network Associate

This area of emphasis is designed to prepare you for the Cisco Certified Network Associate certification. You will learn about networking principles, setup and configuration of internetworking devices, and local area and wide area network planning and design.

			Credits
CIS	115	Introduction to Computer Information Systems	4
CNT	100	Networking Hardware I: A+	5
		Or	
CNT	220	Unix	4
CNT	260	Cisco Network Associate I	6
CNT	261	Cisco Network Associate II	6
CNT	262	Cisco Network Associate III	6
CNT	263	Cisco Network Associate IV	6
Minimum Required Credits for Area of Emphasis			32-33
Core Curriculum Requirements			32-33
		Total Required Credits	**65-68**

Area of Emphasis: Programming

This area is designed to prepare you as an entry-level programmer. Upon completion of this program, you will have written a minimum of 30 programs ranging from simple business programs to the design and completion of a complex business system.

			Credits
CIS	115	Introduction to Computer Information Systems	4
		and	
CIS	116	Logic and Program Design	3
		or	
CSC	160	Computer Science I	5
CIS	220	UNIX	4
CIS	221	Advanced UNIX	4
CSC	Two programming languages with at least one second semester course		8
Electives above CSC 130, CIS 240, CWB 160, or CNT 100 with faculty advisor approval			8
Minimum Required Credits for Area of Emphasis			29-31
Core Curriculum Requirements			32-33
		Total Required Credits	**61-64**

Certificate: Internet Programming Specialist

This area of emphasis is designed to prepare you as an entry-level programmer, with an emphasis on programming for the Internet. Upon completion of this program, you will have written a minimum of 60 programs in a range of programming languages. The program includes general-purpose applications, client-side programs, and server-side programs.

			Credits
CSC	160	Computer Science I	5
CSC	161	Computer Science II	5
CSC	240	Java Programming	4
CIS	220	UNIX	4
CIS	221	Advanced UNIX	4
		or	
CWB	210	CGI and Perl	4
CWB	175	Complete Web Authoring: HTML	4
CNT	200	Introduction to Networking	4
Minimum Required Credits for Area of Emphasis			30
Core Curriculum Requirements			32-33
		Total Required Credits	**62-63**

Certificate: Web Development Specialist

The recipient of this certificate should be prepared for an entry-level position in Internet Web development with a focus on the programming and database aspects of Web sites. Course offerings provide a mix of programming and applications that examine both the client and server aspects of Web sites. Creation of dynamic Web pages involving databases is explored.

			Credits
CWB	175	Complete Web Authoring: HTML	4
CIS	145	Complete PC Database (Access)	4
CWB	262	ColdFusion	4
CIS	240	Database Management Systems (Oracle or Microsoft SQL Server)	4
CWB	210	CGI and Perl	4
CSC	160	Computer Science I	5
CIS	281	Ethics in Computer Technology	1
Faculty Advisor approved electives			8
Minimum Required Credits			**34**

Certificate: Web Design Specialist

This certificate is designed to prepare you for an entry-level position in Internet Web development. You will learn necessary skills using a variety of current programs all focusing on page design and implementation.

			Credits
CIS	115	Introduction to Computer Information Systems	4
		and	
CIS	116	Logic and Program Design	3
		or	
CSC	160*	Computer Science I	5
CWB	175*	Complete Web Authoring: HTML	4
CWB	110	Web Layout and Design Concepts	4

CWB	135*	Complete Web Editing Tools (Dreamweaver 4.0)	4
CWB	161	Image Editing I (Adobe Photoshop)	4
CWB	235*	Complete Web Animation (Flash)	4
CWB	205	Complete Web Scripting (JavaScript)	4
CIS	281**	Ethics in Computer Technology	1
Faculty Advisor approved electives			4
Minimum Required Credits			**34-36**

*Course(s) taken to complete one degree or certificate, but offered in another degree/certificate, count for only one degree or certificate. Faculty advisor approved elective(s) may be used to replace the duplicated course(s).

**Ethics (CIS 281) is required for only the first degree or certificate pursued by a student. A faculty advisor approved elective may be used to replace CIS 281 in subsequent degrees or certificates.

Certificate: PC Applications Specialist

This certificate program is designed to prepare you as an entry-level microcomputer specialist with an emphasis in applications. Upon completion of the course work, you will be prepared to sit for the Microsoft Office Users Specialist (MOUS) examinations for MOUS certification.

			Credits
CIS	115	Introduction to Computer Information Systems	4
		and	
CIS	116	Logic and Program Design	3
		or	
CSC	160	Computer Science I	5
CIS	118	Introduction to PC Applications	
		or	
equivalent CIS 122, CIS 130, CIS 140 and CIS 150			4
CIS	123	Advanced Windows	1.33
CIS	131	Intermediate PC Word Processing	1.33
		and	
CIS	132	Advanced PC Word Processing	1.33
		or	
equivalent CIS 135 Complete PC Word Processing			4
CIS	141	Intermediate PC Database	1.33
		and	
CIS	142	Advanced PC Database	1.33
		or	
equivalent CIS 145 Complete PC Database			4
CIS	151	Intermediate PC Spreadsheet	1.33
		and	
CIS	152	Advanced PC Spreadsheet	1.33
		or	
equivalent CIS 155 Complete PC Spreadsheet			4
CIS	165	Complete Presentation Graphics	4
CIS**	281	Ethics in Computer Technology	1
CNT	200	Introduction to Networking	4
Faculty advisor approved electives			4
Total Required Credits			**31.33-33.33**

**Ethics (CIS 281) is required for only the first degree or certificate pursued by a student. A faculty advisor approved elective may be used to replace CIS 281 in subsequent degrees or certificates.

Certificate: Network Specialist – NACSE/NSNS

This certificate 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.

			Credits
CIS	115	Introduction to Computer Information Systems	4
		and	
CIS	116	Logic and Program Design	3
		or	
CSC	160	Computer Science I	5
CWB	140	Introduction to Multimedia	4
CWB	141	Multimedia Software Modeling (Director)	4
CWB	142	Multimedia Software	4
		Authorship (Authorware)	
CWB	143	Multimedia Software Design/Development	4
CWB	161	mage Editing I (Adobe Photoshop)	4
Faculty Advisor approved Database course			4
CIS**	281	Ethics in Computer Technology	1
Faculty Advisor approved electives			8
		Total Required Credits	**38-40**

Certificate: Computer Support Technician

This area of emphasis is designed to provide both hardware and operating systems experience needed to work as a support person for both local and wide area network environments.

			Credits
CNT	100*	Networking Hardware I: A+	5
CNT	101*	Networking Hardware II: A+	5
CNT	210**	Networking I: Net+	5
CNT	211**	Networking II: Net+	5
CWB	175	Complete Web Authoring: HTML	
		or	
		Faculty Advisor approved course	4
CIS	281	Ethics in Computer Technology	1
Faculty advisor approved electives			8
		Minimum Required Credits	**33**

*These course numbers are going to change for the Fall 2002 semester to CNT 200 and CNT 201.

**These courses are not available until the Fall 2002 semester.

Certificate: Network Associate – Cisco

This area of emphasis is designed to prepare you for the Cisco Certified Network Associate certification. You will learn about networking principles, setup and configuration of internetworking devices, and local area and wide area network planning and design.

			Credits
CNT	260	CISCO Network Associate I	6
CNT	261	CISCO Network Associate II	6
CNT	262	CISCO Network Associate III	6
CNT	263	CISCO Network Associate IV	6
CIS	281	Ethics in Computer Technology	1
		Total Required Credits	**25**

Certificate: Network Engineer – MCSE

This certificate is designed to prepare you for the Microsoft Certified System Engineer Windows 2000 certification.

			Credits
CNT	231	MCSE I: Windows 2000 Network and Operating Essentials	4
CNT	232	MCSE II: Implementing Windows 2000 Professional and Server	4
CNT	233	MCSE III: Implementing a Windows 2000 Network Infrastructure	4
CNT	234	MCSE IV: Implementing and Administering Windows 2000 Directory Services	4
CNT	241	MCSE V: Designing a Windows 2000 Directory Service Infrastructure	4
Electives (Choose two from the following four courses with faculty advice.)			
CNT	242	MCSE VI: Designing a Windows 2000 Secure Network	8
CNT	243	MCSE VII: Designing a Windows 2000 Network Infrastructure	
CNT	235	MCSE: Administering a SQL Server Database	
CNT	244	MCSE: Implementing and Managing MS Exchange 2000	
CIS	281	** Ethics in Computer Technology	1
		Total Required Credits	**29**

**Ethics (CIS 281) is required for only the first degree or certificate pursued by a student. A faculty advisor approved elective may be used to replace CIS 281 in subsequent degrees or certificates.

Certificate: Programming Specialist

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

			Credits
CIS	115	Introduction to Computer Information Systems and	4
CIS	116	Logic and Program Design or	3
CSC	160	Computer Science I	5
CIS	220	UNIX	4
CIS	221	Advanced UNIX	4
CIS	281	Ethics in Computer Technology	1
CSC Two programming languages with at least one second semester course			8
Faculty Advisor approved electives			8
		Total Required Credits	**30-32**

**Ethics (CIS 281) is required for only the first degree or certificate pursued by a student. A faculty advisor approved elective may be used to replace CIS 281 in subsequent degrees or certificates.

Computer Science

Important Note:

Please refer to the CIS department Web site: www.rrcc-online.com/~comptech or talk to your faculty advisor for the most current course, degree, and certificate information.

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. Students are urged to consult a faculty advisor before beginning any program.

Recommended Courses

			Credits
CSC	160	Computer Science I (Required Lab)	
CSC	161	Computer Science II (Required Lab)	
CSC	165	Discrete Structures	
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	Public Speaking	3

Humanities (any two courses from the following) 6
ART 110, 111, 112; Foreign Language 111 ,112, 211, 212; HUM 121, 122, 123; LIT 115, 201, 202; MUS 111, 112; 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, 115; 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 and Refrigeration (AHR)

Degree	Certificate
• Air Conditioning, Heating and Refrigeration	• Comm. Res. Heating
• Refrigeration	• Level I Refrigeration
• Residential Air Conditioning	• Refrigeration
• Residential Hydronic Heating	• Residential Air Conditioning
• Residential Heating	• Residential Forced Air Heating
• HVAC Apprenticeship	• Heating, Ventilation,Residential HVAC Air Conditioning
	• Comm. Refrig. Apprentice
	• Level 2 Refrigeration
	• HVAC Controls Technician
	• Controls Systems Technician

Carpentry (CAR)

Degree	Certificate
• Carpentry	• Carpentry

Construction Technology (CON)

Degree	Certificate
• Construction Technology Technician	• Construction Technology Technician
• Building Maintenance Technician	• Building Maintenance Technician
• Trades Degree	• Construction Fundamentals
• Construction Management	• Construction Management

Electrical (EIC)

Degree	Certificate
• Construction Electrician	• Construction
• Maintenance Electrician	• Electrical Installation
• IBEW/NECA Construction Electrician	• Maintenance
	• Residential Construction
• Power Technology	• National Electrical Code
• Electro Mechanical Industrial Maintenance Tech	• Post-degree Specializations:
	• Advanced Construction
• Data Communication Designer	• Advanced Maintenance
• Data Communication Technician	• Controls Systems Technician
	• Data Communication

Facility Maintenance (FMS)

Certificate

•Facility Maintenance

Fine Woodworking (FIW)

Degree	Certificate
• Fine Woodworking	• Fine Woodworking
	• Post-degree Specialization:
• Master Craftsman	

Manufacturing Technology

• Electro- Mechanical Industrial Maintenance Technology option

Plumbing (PLU)

Degree	Certificate
• Plumbing	• Colorado Plumbing Code Test Preparation
• United Association of Plumbing and Pipefitting	• Residential Plumbing
	• Residential Plumbing and Heating
	• Journey-Level Plumbing

Solar Construction Technology (ENT)

Degree	Certificate
• Active	• Solar Construction Technology
• Passive	

Apprentice-Related Technology

(In conjunction with the Construction Industry Training Council*)

Degree	Certificate
• Carpentry	• Carpentry (ARC)
• Drywall Applicator	• Drywall Applicator (ARD)
• Electrical	• Electrical (ARE)
• Ironworker	• Ironworker (ARI)
• Masonry	• Masonry (ARM)
• Painting	• Painting (ARB)
• Plumbing	• Plumbing (ARP)
• Sheet Metal	• Sheet Metal Worker (ARS)
	• Skilled Laborer (ARL)

*Permission of Construction Technology Department chair required.

Information: **303.914.6511**

Interdisciplinary Certificates

Degree	Certificate
• Building Code Enforcement (*in conjunction with BOCA.)	• Building Code Certificate
	• Basic Plumbing and Heating Maintenance Certificate
	• Building Code Enforcement*

Fire Protection Technology EIC)

Degree	Certificate
• Fire Alarm Systems Technician	• Fire Alarm and Detection
	• Fire CodeTools: Hand/Power Tools

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

General Education Requirements	
English/Speech (ENG, SPE)	3
Mathematics (MAT 114)	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

Construction Technology Requirements			
CON	100	Computers for Construction	2
CON	105	Blueprint Reading	4
CON	151	Construction Process	4
			10
Required Major Courses			**36**
See individual areas of emphasis for specific requirements			
Total Required Credits (Minimum)			**61**

Degrees: Associate of Applied Science (All Emphases)

Certificates: Variable Credits

The Construction Technology Program is the most comprehensive 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 a construction technology advisor.

Information: **303.914.6511**

Degree: Associate of Applied Science Construction Management

You must complete a total of 36 credits in a variety of areas. Meet with your construction technology advisor to predesign an educational plan. This customized degree may include but is not limited to the following areas of study: business, management, supervision, accounting, foreign language skills, estimating, building codes, OSHA training and professional trade skills.

General Education Requirements	15
Construction Technology Requirements	10
	25
Required Major Courses	36
Total Required Credits	**61**

Certificate: Construction Management

Construction Technology requirements and electives must be pre-approved by your construction technology advisor with course selections similar to the degree requirements.

Construction Technology Requirements	10
Required Major Courses	20
Total Required Credits	**30**

Degree: Associate of Applied Science Construction Technology Technician

You must complete a total of **36** credits in a variety of areas. Meet with your construction technology advisor to pre-design an educational plan.

General Education Requirements	15
Construction Technology Requirements	10
	25
Required Major Courses	36
Total Required Credits	**61**

Certificate: Construction Technology Technician

Construction technology requirements and electives must be pre-approved by your Construction technology advisor.

Construction Technology Requirements	10
Required Major Courses	20
Total Required Credits	**30**

Certificate: Construction Technology Fundamentals

Construction technology requirements and electives must be pre-approved by your construction technology advisor.

Construction Technology Requirements	10
Additional Construction Technology Electives	4
Total Required Credits	**14**

Degree: Associate of Applied Science Trades Degree

The trades AAS degree program consists of a maximum of 58 credit hours of trade-specific credits. Students may earn these credits via apprenticeship training (classroom and on-the-job hours) or technical education course work and training, plus a maximum of 20 credit hours of core general education courses at RRCC. For those registered apprentices who complete a three-year registered apprenticeship program, 20 RRCC credit hours will be required. For those completing a four-year or five-year apprenticeship program, 17 RRCC general education credits will be required. This program is offered jointly by RRCC, Emily Griffith Opportunity School and the Joint Apprenticeship Training Committee.

Degree: Associate of Applied Science Building Maintenance Technician

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

General Education Requirements	15
Construction Technology Requirements	10
	25
Required Major Courses	36
Total Required Credits	**61**

Certificate: Building Maintenance Technician

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

Construction Technology Requirements	10
Required Major Courses	36
Total Required Credits	**46**

Building Maintenance Technician

Air Conditioning, Heating, Refrigeration and Ventilation

AHR	103	Fundamentals of Gas Heating	4
AHR	105	Electricity for HVAC/R	4
AHR	110	Refrigeration Fundamentals	4
AHR	122	Air Conditioning Systems	4
AHR	132	Air Conditioning and Refrigeration Controls	4
AHR	162	Heating Controls	4

Carpentry

CAR	151	Tools: Hand/Power, Portable /Stationary	4
CAR	202	Exterior Finishes	1-4
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
EIC	180	Electrical Maintenance Techniques	4

Plumbing

PLU	101	Introduction to Plumbing	4
PLU	105	Piping Skills	4
PLU	118	Plumbing Service	4
PLU	206	Hot Water Heating Systems	4
PLU	232	Commercial Plumbing Service	4

Interdisciplinary Certificates

Certificate: Building Codes

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: Basic Plumbing/Heating Maintenance

PLU	101	Introduction to Plumbing	4
PLU	118	Plumbing Service	4
AHR	103	Fundamentals of Gas Heating	4
AHR	142	Servicing Forced Air Systems	4
AHR	206	Hot Water Heating Systems	4
		Total Required Credits	**20**

Certificate: Building Code Enforcement

A partnership with BOCA (Building Officials Code Administrators). All courses available through CCCOnline

Required Major Courses			**Credits**
CON	220	Basic Code Enforcement	3
CON	221	Overview of the International Codes	3
CON	222	Residential and Nonresidential Plan Review	3
EMP	101	Principles of Emergency Management	3
EMP	240	Leadership and Influence	3
EMP	241	Decision Making and Problem Solving	3
EMP	242	Effective Communications	3
EMP	244	Developing Volunteer Resources	3
EMP	291	Public Information Officer	3
ECO	290	Principles of Macroeconomics	3
		Total	**30**

Associate of Applied Science Degree with an emphasis in Building Code Enforcement

A partnership with BOCA (Building Officials Code Administrators). All courses available through CCCOnline.

Required Major Courses			**Credits**
CON	220	Basic Code Enforcement	3
CON	221	Overview of the International Codes	3
CON	222	Residential and Non-Residential Plan Review	3
EMP	101	Principles of Emergency Management	3
EMP	240	Leadership and Influence	3
EMP	241	Decision Making and Problem Solving	3
EMP	242	Effective Communications	3
EMP	244	Developing Volunteer Resources	3
EMP	291	Public Information Officer	3

General Education Requirements: 15

ENG	131	Technical Writing	3
MAT	109	Survey of Algebra	3
PSY	101	General Psychology I	3
SOC	101	Introduction to Sociology I	3
GEY	235	Introduction to Geographic Information Systems	3

Elective Course Requirement: 15-20

ENV	101	Introduction to environmental Science	3
FST	201	Instructional Methodology (Fire Instructor I,II)	3
MAN	116	Principles of Supervision	3
MAN	226	Principles of Management	3
ECO	201	Principles of Macroeconomics	3
SPE	125	Interpersonal Communication	3
		Total	**60**

Facility Maintenance (FMS)

This course of study involves the maintenance of commercial and industrial facilities. Please see a Construction Technology advisor, **303.914.6511**.

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	4
MAN	117	Time Management	1
PLU	116	Plumbing Repair	4
		Total Required Credits	**25**

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. Please see a construction technology Advisor. **303.914.6511**

Graduates of the HVAC/R Program may articulate with Ferris State University to pursue a baccalaureate degree.

Construction Technology AAS Degree with Heating, Ventilation and Air Conditioning Emphasis

			Credits
General Education Requirements			15
Construction Technology Curriculum Requirements			10
			25
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	Applied Occupational Math	3
			15
Required Major Courses			
Second Session			
AHR	132	Refrigeration and Air Conditioning Controls	4
AHR	120	Air Conditioning Systems	6
AHR	125	Refrigerant Recovery Certification Training	1
English Credit			3
			14
Required Major Courses			
Third Session			
AHR	162	Heating Controls	4
AHR	142	Servicing Forced Air Systems	4
AHR	206	Hot Water Heating Systems	4
Science or Humanities or Social Science Course			3
			16
Required Major Courses			
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	**64**

Degree: Associate of Applied Science Air Conditioning, Heating/Refrigeration

			Credits
General Education Requirements			**15**
Construction Technology Requirements			**10**
			25
Required Major Courses			
AHR	103	Fundamentals of Gas Heating	4
AHR	105	Electricity for HVAC/R	4
AHR	110	Refrigeration Fundamentals	4
AHR	122	Air Conditioning Systems	4
AHR	125	Refrigerant Recovery Certification Training	1
AHR	132	Refrigeration and Air Conditioning Controls	4
AHR	142	Servicing Residential Forced Air Systems	4
AHR	162	Heating Controls	4
AHR	206	Hot Water Heating Systems	4
AHR	216	Uniform Mechanical Code	4
AHR	278	Advanced Refrigeration Lab	2
		Total Required Credits	**64**

Degree: Associate of Applied Science Refrigeration

			Credits
General Education Requirements			**15**
Construction Technology Requirements			**10**
			25
Required Major Courses			
AHR	105	Electricity for HVAC/R	4
AHR	110	Refrigeration Fundamentals	4
AHR	125	Refrigerant Recovery Certification Training	1
AHR	132	Refrigeration and Air Conditioning Controls	4
PLU	105	Piping Skills	4
AHR	202	Pneumatic Controls	4
AHR	217	Refrigeration Operator	4
AHR	222	Evaporative Cooling Systems and Water Treatment	4
AHR	230	Commercial Refrigeration	4
AHR	XXX	AHR Electives	4
		Total Required Credits	**62**

Degree: Associate of Applied Science Residential Air Conditioning

			Credits
General Education Requirements			15
Construction Technology Requirements			10
			25
Required Major Courses			
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	Refrigerant Recovery Certification Training	1
AHR	132	Air Conditioning/Refrigeration Controls	4
AHR	140	Residential Sheet Metal	4
AHR	190	Air Conditioning Systems Service and Repair	4
AHR	216	Uniform Mechanical Code	4
AHR	260	Estimating Residential HVAC Systems	4
		Total Required Credits	**62**

Degree: Associate of Applied Science Residential Heating

			Credits
General Education Requirements			15
Construction Technology Requirements			10
			25
Required Major Courses			
AHR	104	Sizing: Heat., Vent./Comb. Air Systems	4
AHR	103	Fundamentals of Gas Heating	4
AHR	105	Electricity for HVAC/R	4
PLU	105	Piping Skills	4
AHR	140	Residential Sheet Metal	4
AHR	145	Sizing Residential Forced Air Systems	4
AHR	162	Heating Controls	4
AHR	206	Hot Water Heating Systems	4
AHR	216	Uniform Mechanical Code	4
		Total Required Credits	**61**

Certificate: Level I Refrigeration

Required Major Courses			**Credits**
AHR	105	Electricity for HVAC/R	4
AHR	110	Refrigeration Fundamentals	4
AHR	125	Refrigerant Recovery Certificate	1
		Total Required Credits	**9**

Certificate: HVAC Controls Technician

Required Major Courses			**Credits**
AHR	105	Electricity for HVAC/R	
AHR	132	Air Conditioning/Refrigeration Controls	4
AHR	162	Heating Controls	4
AHR	202	Pneumatic Controls	4
		Total Required Credits	**16**

Certificate: Control Systems Technician

Required Major Courses			**Credits**
AHR	132	Air Conditioning/Refrigeration Controls	4
AHR	162	Heating Controls	4
AHR	202	Pneumatic Controls	4
EIC	220	Industrial Electrical Controls	4
EIC	225	Programmable Controls	4
EIC	240	Fire Alarm Fundamentals	4
		Total Required Credits	**24**

Certificate: Refrigeration Level 2

Required Major Courses			**Credits**
AHR	105	Electricity for HVAC/R	4
AHR	110	Refrigeration fundamentals	4
AHR	125	Refrigeration recovery certificate	1
AHR	132	Air Conditioning/Refrigeration Controls	4
AHR	190	A/C Systems Service and repair	4
		or	
AHR	235	Advanced Refrigeration	
		Total Required Credits	**17**

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	4
CON	151	Construction Process	4
AHR	260	Estimating Residential HVAC Systems	4
		Total Required Credits	**62**

Certificate: Refrigeration

equired 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
PLU	105	Piping Skills	4
AHR	216	Uniform Mechanical Code	4
AHR	XXX	AHR Electives	4
AHR	230	Commercial Refrigeration	4
		Total Required Credits	**29**

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	4
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
		Total Required Credits	**33**

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
		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**

Certificate: Air Conditioning, Heating/Refrigeration Apprenticeship Program

Required Major Courses			
AHR	105	Basic Electricity	4
AHR	110	Refrigeration Fundamentals	4
AHR	125	EPA Refrigeration Certification	1
AHR	103	Heating Fundamentals	4
AHR	104	Sizing: Heating, Venting, Combustion	4
AHR	132	Air Conditioning Controls	4
AHR	140	Sheet Metal (Residential)	4
AHR	162	Heating Controls	4
AHR	216	Uniform Mechanical Code OR	
CON	105	Blueprint Reading	4
		Total Required Credits	**33**

Certificate: Commercial Refrigeration Apprenticeship Program

Required Major Courses			
AHR	105	Basic Electricity	4
AHR	110	Refrigeration Fundamentals	4
AHR	125	EPA Refrigeration Certification	1
AHR	132	Air Conditioning Controls	4
AHR	230	Commercial Refrigeration 1	4
PLU	105	Piping Skills	4
AHR	216	Uniform Mechanical Code	4
CON	100	Computers for Construction or	
CON	105	Blueprint Reading	4
AHR	278	Advanced Refrigeration Lab	4
		Total Required Credits	**33**

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-time 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. Please see a construction technology advisor, **303.914.6511**.

Degree: Associate of Applied Science Carpentry

			Credits
General Education Requirements			15
Construction Technology Requirements			10
			25
Required Major Courses			
CAR	152	Tools	4
CAR	XXX	Carpentry Class from Structure Category	4
CAR	XXX	Carpentry Class from Structure Category	4
CAR	XXX	Carpentry Class from Specialities Category	4
CAR	XXX	Carpentry Class from Trade Skills Category	4
CAR	XXX	Carpentry Class from Exterior Finishes Category	4
CAR	232	Carpentry Lab or	
CAR	233	Technical Project	4
CAR	XXX	Carpentry Class from Specialties Category	4
		Total Required Credits	**57**

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	**28**

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 and 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	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 in the electrical industry. A thorough treatment of DC, AC, and polyphase electric circuits and solid state power devices minimizes the possibility of technological obsolescence. Motor controls and programmable controllers let you design and build control systems. The electrical installation courses use the latest techniques according to the National Electrical Code. The electrical code and fire alarm classes are especially useful as preparation for state license and NICET certification examinations. This program is excellent for electricians, engineers, firefigthers, building department inspectors, and maintenance personnel. This program uses an extensive lab environment for important hands-on experience in electrical classes. Please see a construction ttechnology advisor **303.914.6511**.

Degree: Associate of Applied Science Maintenance Electrician

			Credits
General Education Requirements			15
Construction Technology Requirements			10
			25
Required Major Courses			
EIC	100	Electrical Construction and Planning	4
EIC	105	Basics AC and DC Electricity	4

EIC	120	Electrical Installations II	4
EIC	155	AC Circuit Fundamentals	4
EIC	170*	Solid State Circuits and Devices	4
EIC	210	Advanced National Electrical Code	4
EIC	220	Industrial Electrical Controls	4
EIC	225	Programmable Controllers	4
EIC	230*	AC/DC Machines: Theory and Applications	4
EIC	235*	Transformers and Power Distribution	4
EIC	240*	Fire Alarm Fundamentals	4

Degree: Associate of Applied Science: Construction Electrician

*Take two of four classes marked.

Total Required Credits **69**

		Credits
General Education Requirements		15
Construction Technology Requirements		10
		25
Required Major Courses		
EIC	100	Electrical Construction and Planning 4
EIC	105	Basics AC and DC Electricity 4
EIC	110	Electrical Installations I 4
EIC	120*	Electrical Installations II 4
EIC	130	National Electrical Code I 4
EIC	135	National Electrical Code II 4
EIC	150	DC Circuit Fundamentals 4
EIC	155	AC Circuit Fundamentals 4
EIC	190*	Electrical Code Calculations 4
EIC	240*	Fire Alarm Fundamentals 4
		Total Required Credits **65**

*Take two of the four classes marked.

Certificate: Construction Electrician

Required Major Courses			**Credits**
CON	105	Blueprint Reading	4
CON	151	Construction Process	3
EIC	100	Electrical Construction and Planning	4
EIC	105	Basics of AC and DC Electricity	4
EIC	120	Electrical Installations I	4
EIC	130	National Electric Code I	4
EIC	135	National Electric Code II	4
EIC	190	Electrical Code Calculation	4
EIC	240	FIre Alarm Fundmentals	4
		Total Required Credits	**35**

Certificate: Advanced Construction Electrician*

Required Major Courses			**Credits**
CON	105	Blueprint Reading	4
EIC	120	Electrical Installation II	4
EIC	130	National Electrical Code I	4
EIC	135	National Electrical Code II	4
EIC	150	DC Circuit Fundamentals	4
EIC	155	AC Circuit Fundamentals	4
EIC	190	Electrical Code Calculations	4
EIC	205	Advanced Electrical Planning	4
		Total Required Credits	**32**

*Requires Construction Electrician Certificate or instructor's approval

Certificate: Electrical Installation

Required Major Courses			**Credits**
EIC	100	Electrical Construction and Planning	4
EIC	110	Electrical Installations I	4
EIC	120	Electrical Installations II	4
EIC	130	National Electric Code I	4
		Total Required Credits	**16**

Certificate: National Electrical Code Certificate

Required Major Courses			**Credits**
EIC	130	National Electrical Code I	4
EIC	135	National Electrical Code II	4
EIC	190	Electrical Code Calculations	4
		Total Required Credits	**12**

Certificate: Control Systems Technician

Required Major Courses			**Credits**
AHR	132	Air Conditioning/Refrigeration Controls	4
AHR	162	Heating Controls	4
AHR	202	Pneumatic Controls	4
EIC	220	Industrial Electrical Controls	4
EIC	225	Programmable Controls	4
EIC	240	Fire Alarm Fundamentals	4
		Total Required Credits	**24**

Certificate: Residential Construction Electrician

Required Major Courses			**Credits**
CON	105	Blueprint Reading	4
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	**20**

Degree: Associate of Applied Science Construction Technology with an Emphasis in IBEW/NECA

Construction Electrician via CCCOnline

Greg Morey, academic advisor – **303.914.6242** – greg.morey@rrcc.cccoes.edu

Rich Thatcher: Electrical Program faculty – rich.thatcher@rrcc.cccoes.edu

You can earn an associate of applied science degree in construction technology with an emphasis in IBEW/NECA construction electrician. Utilize your four or five years of apprenticeship schooling and combine it with an articulation agreement between IBEW/NECA and Red Rocks Community College.

The objective of the program is to allow members having served their apprenticeship program through the National Joint apprenticeship (NJATC) to earn an associate's degree. This program allows you to combine your excellent trade skills with your academic skills.

After completing the IBEW/NECA NJATC apprenticeship program, Red Rocks Community College will grant 43 credits toward the degree. You will need to complete 18 hours of general education requirements at Red Rocks Community College offered through CCCOnline to complete the degree.

IBEW/NECA Members Graduation Requirements and Policy

1. Proof of completion of IBEW/NECA Wireman or Outside Lineman NJATC programs.
2. A cumulative grade point average of 2.0 (a C average)
3. Eighteen approved credit hours must be earned through RRCC and/or CCCOnline.
4. File an Application for Graduation before completing your last class.
5. Resolve all financial obligations to the college and return all college-owned materials.

Degree: Associate of Applied Science Construction

Required Major Courses	**Credits**
Technology with an emphasis in IBEW/NECA	
English or Speech	3
Mathematics	3
Credit from any two of the following three areas;	6
Area 1 - Humanities, (art, foreign language, literature, music, philosophy, theater)	
Area 2 - Science Astronomy, biology, chemistry, geology, physics)	
Area 3 - Social and Behavioral Sciences (Anthropology, economics, geography, history, political science, psychology, sociology)	
Electives from any of the above subjects;	3
Computer Science	3
Total Required Credits	**18**

Degree: Associate of Applied Science in Construction Technology with an Emphasis in Power Technology

Via CCCOnline
Greg Morey, academic advisor, **303.914.6242**, greg.morey@rrcc.edu

Rich Thatcher: electrical program faculty, rich.thatcher@rrcc.edu

Line Technician	Substation Electrician
Meter Specialist	Apparatus Electrician
Instrument and Control Specialist	Electrician Specialist
Mechanic Specialist	Power Plant Operator
Field Engineering Specialis*t	Relay and Contrl Spec.*
Utility Engineering Standards Specialist Tech. *	

* Upon program approval by the Department of Labor.

Articulation Agreement Construction Technology with Emphasis in Power Technology

An associate of applied science degree is available for those currently enrolled or who have completed their apprenticeship. RRCC's Construction Technology Electrical Program will grant 43 college credits toward an AAS degree. The degree requires a total of 61 credits, of which 18 must be taken at RRCC or through RRCC via CCCOnline.

By utilizing your apprentice training and just six additional classes, you may obtain a degree online, at home and at times of your choosing. All AAS degrees will articulate with a variety of colleges and universities if you elect to pursue a baccalaureate degree.

Graduation Requirements and Policy

1. Proof of completion above listed programs.
2. A cumulative grade point average of 2.0 (a C average)
3. Eighteen approved credit hours must be earned through RRCC and CCCOnline.
4. File an Application for Graduation before completing your last class.
5. Resolve all financial obligations to the college and return all college-owned materials.

Degree Requirements:

Credit for your apprenticeship will be granted after completion of your apprenticeship and a minimum of 18 credits from the options below, and upon application for graduation, which must be made at the start of the last semester of classes through RRCC.

Power Technology Apprenticeship	43
English/Speech/Communications (choose one)	3
Mathematics (choose one)	3
Computer Science (choose one)	3
Two classes from the following three areas: Humanities Science Social and Behavioral Sciences	6
General Education Electives (choose one)	3
Minimum Total Credits	**61**

Certificate: Maintenance Electrician

Required Major Courses			**Credits**
CON	100	Computers for Construction	2
CON	105	Blueprint Reading	4
EIC	105	Basics of AC and DC Electricity	4
EIC	120	Electrical Installations II	4
EIC	130	National Electric Code I	4
EIC	135	National Electric Code II	4
EIC	230	AC/DC Machines: Theory and Applications	4
EIC	220	Industrial Electrical Controls I	4
EIC	240	Fire Alarm Fundamentals	4
		Total Required Credits	**34**

Certificate: Advanced Maintenance Electrician*

Required Major Courses			**Credits**
CON	105	Blueprint Reading	4
EIC	105	Basics of AC and DC Electricity	4
EIC	100	Electrical Maintenance Techniques	4
EIC	160	Electrical Instruments and Measurements	4
EIC	210	Advanced National Electrical Code	4
EIC	215	Advanced Code Calculations	4
EIC	225	Programmable Controllers	4
EIC	230	AC/DC Machines: Theory and Applications	4
EIC	235	Transformers and Power Distribution	4
		Total Required Credits	**36**

*Requires Certificate for Maintenance or instructor's approval.

Certificate: Post-Degree Specialization for Advanced Construction Electrician*

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

*Prerequisite: AAS degree construction electrician emphasis 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	225	Programmable Controllers	4
EIC	235	Power Transformers and Distribution	4
		Total Required Credits	**16**

*Prerequisite: AAS degree maintenance electrician emphasis or instructor's approval.

Degree: Associate of Applied Science Emphasis in Data Communication Technician

General Education Requirements

English/Speech (ENG, SPE)	3
Mathematics (MAT 114)	3
Credit from any two of the following three areas: Humanities (ART, FRE, GET, HUM, LIT, MUS, PHI, SPA, THE)Science (AST, BIO, CHE, GEY, PHY)Social and Behavioral Sciences (ANT, ECO, GEO, HIS, POS, PSY, SOC)	6
General Education Electives	3
Total	**15**

CON	105	Blueprint Reading	4
EIC	100	Electrical Construction and Planning	4
EIC	105	Basics of AC and DC Electricity	4
EIC	120	Electrical Installations II	4
EIC	130	National Electrical Code I	4
EIC	135	National Electrical Code II	4
EIC	280*	Fiber Optic Levels 1, 2 and 3	2
EIC	281*	Electrical Considerations for Telecommunications	.5
EIC	282*	Electrical Estimating	1
EIC	283*	Structured Cabling Systems Distribution Certification	.5
EIC	284*	Certification for Residential Voice/Data and Systems Networks	1.5
EIC	285*	Voice/Data Cat Rated Cabling Distribution	1
EIC	286*	LAN Troubleshooting, Repair and Certifying	1
EIC	287*	NICET Levels 1 and 2 Exam Preparation	2
EIC	288*	RCDD Pre-study Course (Condensed)	1.5
EIC	289*	RCDD Pre-study Course	2
EIC	291*	Estimating for Voice/Data Low Voltage Integration and Systems	1.5
EIC	292*	Project Management	1
EIC	293*	Voice/Data Engineering Design	2
EIC	294*	Specifications Analysis	.5
EIC	295*	Specifications Writing for Engineers	1
EIC	296*	Grounding and Bonding	1
EIC	298*	Conest Software Telecommunications Estimating	1
		Total	**60**

*Courses have special pricing in partnership with NMFOTC

Degree: Associate of Applied Science Emphasis in Data Communication Designer

General Education Requirements

English/Speech (ENG, SPE)	3
Mathematics (MAT 114)	3
Credit from any two of the following three areas:	6
Humanities	
(ART, FRE, GET, HUM, LIT, MUS, PHI, SPA, THE)	
Science	
(AST, BIO, CHE, GEY, PHY)	
Social and Behavioral Sciences	
(ANT, ECO, GEO, HIS, POS, PSY, SOC)	
CNT 293 Voice/Data Engineering Design	2
CNT 295 Specifications Writing for Engineers	1
Total Required Credits	**15**

CON	105	Blueprint Reading	4
CON	228	Construction Estimating	3
EGT	120	Intermediate CADD Applications	3
EIC	100	Electrical Construction and Planning	4
EIC	105	Basics of AC and DC Electricity	4
EIC	130	National Electrical Code I	4
EIC	135	National Electrical Code II	4
EIC	280*	Fiber Optic Levels 1, 2 and 3	2
EIC	281*	Electrical Considerations for Telecommunications	.5
EIC	283*	Structured Cabling Systems Distribution Certification	.5
EIC	282*	Electrical Estimating	1
EIC	284*	Certification for Residential Voice/Data and Systems Networks	1.5
EIC	285*	Voice/Data Cat Rated Cabling Distribution	1
EIC	286*	LAN Troubleshooting, Repair and Certifying	1
EIC	287*	NICET Levels 1 and 2 Exam Preparation	2
EIC	288*	RCDD Pre-study Course (Condensed)	1.5
EIC	289*	RCDD Pre-study Course	2
EIC	291*	Estimating for Voice/Data Low Voltage Integration and Systems	1.5
EIC	292*	Project Management	1
EIC	294*	Specifications Analysis	.5
EIC	296*	Grounding and Bonding	1
EIC	298*	Conest Software Telecommunications Estimating	1
		Total Required Credits	**59**

*Courses have special pricing in partnership with NMFOTC

Certificate: Data Communications

EIC	280*	Fiber Optic Levels 1, 2 and 3	2
EIC	281*	Electrical Considerations for Telecommunications	.5
EIC	282*	Electrical Estimating	1
EIC	283*	Structured Cabling Systems Distribution Certification	.5
EIC	284*	Certification for Residential Voice/Data and Systems Networks	1.5
EIC	285*	Voice/Data Cat Rated Cabling Distribution	1
EIC	286*	LAN Troubleshooting, Repair and Certifying	1
EIC	287*	NICET Levels 1 and 2 Exam Preparation	2
EIC	288*	RCDD Pre-study Course (Condensed)	1.5
EIC	289*	RCDD Pre-study Course	2
EIC	291*	Estimating for Voice/Data Low Voltage Integration and Systems	1.5
EIC	292*	Project Management	1
EIC	293*	Voice/Data Engineering Design	2
EIC	294*	Specifications Analysis	.5
EIC	295*	Specifications Writing for Engineers	1
EIC	296*	Grounding and Bonding	1
EIC	298*	Conest Software Telecommunications Estimating	1
		Total	**21**

*Courses have special pricing in partnership with NMFOTC

Manufacturing Technology

Associate of Applied Science

Competitive Colorado manufacturing must bring quality products to state, national and international markets in the shortest possible time. To do so, Colorado manufacturing firms require employees with knowledge and skills in technology application, engineering and design, production processes planning and control, equipment maintenance, communication, and data manipulation and file exchange.

Increasingly, complex automated industrial environments require maintenance, diagnosis, and troubleshooting of modern systems, in tandem with preventive maintenance techniques and competency for job safety. In Colorado, these sophisticated environments necessitate knowledge and skills from basic electrical and mechanical capabilities to integration of electromechanical systems.

Electro-Mechanical Industrial Maintenance Technology Option

			Credits
General Education Requirements			
PHY	105	Physics	4
ENG	131	Technical Writing or SPE 105	3
MAT	114	Career Mathematics	4
SPE	105	Communication in the Workplace	3
			18
CIS	118	Microcomputer Applications	4
OSH	200	Hazardous Material Control	2
EIC	105	Basic AC/DC	4
EIC	160	Electrical Instruments and Measurements	4
			10
Technical Core Curriculum: Electrical			
EIC	120	Electrical Installations II	4
EIC	170	Solid State Devices and Circuits	4
EIC	210	National Electric Code	4
EIC	220	Industrial Electrical Controls I	4
EIC	225	Programmable Controllers	4
CON	105	Print Reading	4
EIC	230	AC/DC Machines: Theory and Applications	4
			28
Industrial Maintenance Technology: Certificate			
MAT	114	Career Mathematics	4
PHY	105	Physics	4
CIS	118	Microcomputer Applications	4
ENG	131	Technical Writing	3
MTR	104	Statistical Process Control	3
SPE	105	Communication in the Workplace	3
EIC	105	DC and AC Circuits	4
EIC	120		4
EIC	220		4
EIC	225		4
		Industrial Maintenance Certificate	**39**

Semiconductor Manufacturing Technology Option

Degree: Associate of Applied Science Applied Technology

Offered in conjunction with National Technology Transfer and CCCOnline.

Associate of Applied Science Degree Requirements			
BUS	158	Human Resource Management	3
BUS	217	Business Communication and Report Writing	3
CIS	118	Introduction to Microcomputer Applications	3
MAN	216	Small Business Management	3
MAN	226	Principles Of Management	3
OSH	134	Construction Standards	3
OSH	196	Safety Program Planning	3
OSH	202	Accident Prevention	3
POS	221	Community Planning and Development	3
		Core Courses	**27**
General Education Requirements			
ENG	121	English Composition I	3
MAT	121	College Algebra	4
POS	215	State and Local Politics	3
ECO	202	Principles Of Microeconomics	3
PHI	112	Ethics	3
		General Education	**16**
Elective Courses Requirements: Select minimum 17 credit hours from below or National Technology Transfer courses (see list of approved classes)			
EIC-	124	Elec. Safety Requirements and Procedures	1
EIC-	234	High Voltage Electrical Safety	1
AHR-	114	Centrifugal Pumps	1.5
AHR-	124	Refrigeration and Air Conditioning	1.5
AHR-	126	Refrigerant Retrofit Training	1.5
AHR-	134	Chillers	1.5
AHR-	194	Fundamentals Of Pneumatic Comfort Controls	1.5
AHR-	203	Hydraulics Training	1.5
AHR-	204	Boilers: An Operators Workshop	1.5
EIC-	102	Electrical Drawings	1
EIC-	104	Basics of Industrial Electricity	1.5
EIC-	124	Electrical Safety Requirements and Procedures	1
EIC-	134	Life Safety Code (NFPA 101)	1
EIC-	144	Grounding and Bonding	1.5
EIC-	164	Introduction to Industrial Electronics	1.5
EIC-	174	Tuning DDC/Process Control Loops	1
EIC-	184	Maintenance Management	1
EIC-	221	Trouble Shooting Electrical Control Circuits	1.5
EIC-	222	Introduction to Instrumentation and Process Control	1.5
EIC-	224	Understanding Programmable Logic Controllers	1.5 / Variable 2
EIC-	226	Understanding Programmable Logic Controllers Advanced	1.5 / Variable 2
EIC-	227	Mechanical Drives	1.5
EIC-	229	AC and DC Variable Speed Drive Technology	1.5
EIC-	231	Electro-Pneumatics Training	1.5
EIC-	233	Electric Motors	1.5
EIC-	234	High Voltage Electrical Safety	1
EIC-	250	Fiber Optics Training	1.5
EIC-	251	Fiber Optics Training Advanced	1.5
EIC-	254	Telephony	1.5
EIC-	131	National Electrical Code	1.5
EIC-	239	Fire Alarms	1.5
IMP	110	Introduction to Quality Systems	2
BUS	216	Legal Environment of Business	3
OSH	112	Fire Protection and Analysis	3
OSH	131	General Industry Standards	5
ECO	201	Principles of Macroeconomics	3
SPE	115	Speech Communications	3
MAR	216	Principles of Marketing	
ACC	121	Principles of Accounting I	4
		Elective Courses	**17**
		Total Required	**60**

Low Voltage Technician's Certificate

EIC-	124	Electrical Safety Requirements and Procedures	1.5
EIC-	104	Basics of Industrial Electricity	1.5
EIC-	239	Fire Alarms	1.5
EIC-	250	Fiber Optics Training	1.5
EIC-	251	Fiber Optics Training Advanced	1.5
EIC-	254	Telephony	1.5
EIC-	236	NICET I and II	1.5
EIC-	237	NICET III	1.5
EIC-	238	NICET IV	1.5
		Core Courses	**27**

Industrial Electrical Technician's Certificate

9 credit hours required for certificate

EIC-	124	Electrical Safety Requirements and Procedures	1.5
EIC-	234	High Voltage Electrical Safety	1.5
EIC-	102	Electrical Drawings	1
EIC-	104	Basics of Industrial Electricity	1.5
EIC-	144	Grounding and Bonding	1.5
EIC-	164	Introduction to Industrial Electronics	1.5
EIC-	174	Tuning DDC/Process Control Loops	1
EIC-	221	Trouble Shooting Electrical Control Circuits	1.5
EIC-	222	Introduction to Instrumentation and Process Control	1.5
EIC-	224	Understanding Programmable Logic Controllers	1.5 / Variable 2
EIC-	226	Understanding Programmable Logic Controllers Advanced	1.5 / Variable 2
EIC-	229	AC and DC Variable Speed Drive Technology	1.5
EIC-	233	Electric Motors	1.5
EIC-	234	High Voltage Electrical Safety	1
EIC-	131	National Electrical Code	1.5

Code and Standards Certification

7.5 credit hours required for certificate

EIC-	124	Electrical Safety Requirements and Procedures	1.5
EIC-	234	High Voltage Electrical Safety	1.5
EIC-	124	Electrical Safety Requirements and Procedures	1
EIC-	134	Life Safety Code (NFPA 101)	1
EIC-	131	National Electrical Code	1.5
EIC-	236	NICET I and II	1.5
EIC-	237	NICET III	1.5
EIC-	238	NICET IV	1.5
EIC-	144	Grounding and Bonding	1.5
EIC-	234	High Voltage Electrical Safety	1
EIC-	132	Building Inspection	1

Commercial/Industrial Heating and Cooling Certificate

7.5 credit hours required for certificate

AHR-	124	Refrigeration and Air Conditioning	1.5
AHR-	126	Refrigerant Retrofit Training	1.5
AHR-	134	Chillers	1.5
AHR-	194	Fundamentals Of Pneumatic Comfort Controls	1.5
AHR-	204	Boilers: An Operators Workshop	1.5
EIC-	174	Tuning DDC/Process Control Loops	1
EIC-	222	Introduction to Instrumentation and Process Control	1.5
AHR-	114	Centrifugal Pumps	1.5
		Total Required	**60**

Electro-Mechanical Technicians Certificate

9 Credit hours required for certificate

EIC-	124	Electrical Safety Requirements and Procedures	1.5
EIC-	234	High Voltage Electrical Safety	1.5
EIC-	102	Electrical Drawings	1
EIC-	104	Basics of Industrial Electricity	1.5
EIC-	124	Electrical Safety Requirements and Procedures	1
EIC-	144	Grounding and Bonding	1.5
EIC-	164	Introduction to Industrial Electronics	1.5
EIC-	174	Tuning DDC/Process Control Loops	1
EIC-	221	Trouble Shooting Electrical Control Circuits	1.5
EIC-	222	Introduction to Instrumentation and Process Control	1.5
EIC-	224	Understanding Programmable Logic Controllers	1.5 / Variable 2
EIC-	226	Understanding Programmable Logic Controllers Advanced	1.5 / Variable 2
EIC-	229	AC and DC Variable Speed Drive Technology	1.5
AHR-	114	Centrifugal Pumps	1.5
AHR-	124	Refrigeration and Air Conditioning	1.5
AHR-	126	Refrigerant Retrofit Training	1.5
EIC-	144	Grounding and Bonding	1.5
EIC-	174	Tuning DDC/Process Control Loops	1
EIC-	221	Trouble Shooting Electrical Control Circuits	1.5
EIC-	222	Introduction to Instrumentation and Process Control	1.5
EIC-	224	Understanding Programmable Logic Controllers	1.5 / Variable 2
EIC-	226	Understanding Programmable Logic Controllers Advanced	1.5 / Variable 2
EIC-	227	Mechanical Drives	1.5
EIC-	229	AC and DC Variable Speed Drive Technology	1.5
EIC-	231	Electro-Pneumatics Training	1.5
EIC-	233	Electric Motors	1.5
EIC-	234	High Voltage Electrical Safety	1

Fine Woodworking (FIW)

(See Carpentry)

This program provides theory and hands-on training for entry skills through craftsman-level competencies. Day and evening classes for part-time 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.

Please see a construction technology advisor, **303.914.6511**.

Degree: Associate of Applied Science:

Fine Woodworking

Credits

General Education Requirements	15
Construction Technology Requirements	10
	25

Required Major Courses

FIW	100	Fundamentals of Woodworking	4
FIW	125	Finishing Wood	4
FIW	201	Joinery	4
FIW	208	Furniture Repairs	4
FIW	209	Cabinetmaking	4
FIW	215	Advanced Joinery	4
FIW	XXX	Elective	4
FIW	220	Advanced Furniture and Cabinet Construction	4
FIW	XXX	Elective	4
		Total Required Credits	**61**

Certificate: Fine Woodworking

Required Major Courses			**Credits**
FIW	100	Fundamentals of Woodworking	4
FIW	125	Finishing Wood	4
FIW	201	Joinery	4
FIW	208	Furniture Repairs	4
FIW	209	Cabinetmaking	4
FIW	215	Advanced Joinery	4
FIW	220	Advanced Furniture/Cabinet Construction	4

Electives

FIW/CAR	Electives (must have approval of your advisor)	4
	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 set up 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 and 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.

Fire Protection Technology Degree: Associate of Applied Science

This degree prepares the student for entry into a career in fire alarm systems design, a fire alarm systems technician, or fire sprinkler systems design. This degree is also useful for anyone working for building or fire departments doing plan review or inspections. Emphasis is placed on the latest technologies in accordance with national and local fire codes. Preparation for NICET (National Institute for Certification in Engineering Technologies) certification in fire alarm systems levels I, II, III and IV is included in the program.

AAS Degree with an Emphasis in Fire Alarm and Detection

			Credits
FST	102	Intro to Fire Science and Suppression	3
EIC	105	AC/DC Circuit Fundamentals	4
FST	104	Fire Protection Systems	3
CON	105	Blueprint Reading	4
EIC	240	Fire Alarm Fundamentals	4
EIC	241	Advanced Fire Alarm Systems	4
FST	204	Fire Codes and Ordinances	3
EGT	120	Intermediate CADD Applications	3
EIC	242	National Fire Alarm Code	4
EIC	243	National Fire Alarm Code Calculations	4
EIC	287	NICET I and II	1
EIC	130	National Electrical Code I	4
EIC	135	National Electrical Code II	4
		General Education Classes	**15**
		Total	**60**

Fire Code Certificate

FST	204	Fire Codes and Ordinances	3
EIC	242	National Fire Alarm Code	4
EIC	130	National Electrical Code I	4
EIC	135	National Electrical Code II	4
EIC	287	NICET I, II	1
EIC	278	NICET III	1
EIC	270	NICET IV	1
		Total	**18**

Fire Alarm and Detection Technician Certificate

FST	102	Intro to Fire Science and Suppression	3
EIC	150	DC Circuit Fundamentals	4
EIC	155	AC Circuit Fundamentals	4
FST	104	Fire Protection Systems	3
CON	105	Blueprint Reading	4
EIC	240	Fire Alarm Fundamentals	4
EIC	241	Advanced Fire Alarm Systems	4
FST	204	Fire Codes and Ordinances	3
EIC	242	National Fire Alarm Code	4
EGT	120	Intermediate CADD Appications	3
		Total	**36**

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 all of the State Plumbing Exams. Please see a Construction Technology advisor, **303.915.6511**.

Degree: Associated Applied Science Emphasis in Construction Technology Plumbing

			Credits
General Education Requirements			15
Construction Technology Requirements			10
			25
Required Major Courses			
PLU	101	Introduction to Plumbing	4
PLU	105	Piping Skills	4
PLU	110	Waste and Vent Code Requirements	4
PLU	112	Residential Plumbing	4
PLU	118	Plumbing Service	4
PLU	200	Backflow Prevention Certification	3
PLU	212	Commercial and Multi-Story Projects	4
PLU	216	Uniform Plumbing Code	4
CON	100	Computers for Construction	2
PLU	255	Medical Gas	2
PLU	260	Estimating Plumbing Costs	4
		Total Degree Requirements	**64**

Certificate: Colorado Plumbing Code Test Preparation

			Credits
PLU	116	Soldering and Brazing Skills	.5
PLU	216	Uniform Plumbing Code	4
		Total Required Credits	**4.5**

Certificate: Residential Plumbing

			Credits
PLU	101	Introduction to Plumbing	4
PLU	105	Piping Skills	4
PLU	110	Waste and Vent Code Requirements	4
PLU	112	Residential Plumbing	4
PLU	114	Piping Lab	2
PLU	118	Plumbing Service	4
PLU	216	Uniform Plumbing Code	4
CON	105	Blueprint Reading	4
		Total Required Credits	**30**

Associate of Applied Science in Construction Technology in Partnership with United Association of Plumbing and Pipefitting Emphasis

Degree: RRCC/UA Plumber/Pipefitter

Through this program, UA members can earn an associate of applied science degree after completing their UA apprenticeship.

	Credits
Credits from Articulated Apprenticeship Program	43
General Education Requirements	15
Computer Skills	2
Total	**60**

Certificate: Journey-Level Plumbing

			Credits
CON	151	Construction Process	4
PLU	200	Backflow Prevention Certificate	3
PLU	260	Estimating Plumbing Costs	4
PLU	212	Commercial and Multi-Story Project	4
PLU	225	Technical Project	3
PLU	232	Commercial Plumbing Service	2
PLU	255	Medical Gas	2
		Residential Certificate Credits	**22**
		Journey Level Course Credits	**28**
		Total Required Credits	**50**

Certificate: Residential Plumbing and Heating

Required Major Courses			**Credits**
PLU	101	Introduction to Plumbing	4
PLU	105	Piping Skills	4
PLU	110	Waste and Vent Code Requirements	4
PLU	112	Residential Plumbing	4
PLU	118	Plumbing Service	4
PLU	206	Hot Water Heating Systems	4
CON	105	Blueprint Reading	4
PLU	216	Uniform Plumbing Code	4
AHR	103	Fundamentals of Gas Heating	4
AHR	104	Sizing: Venting, Comb. Air and Heat Systems	4
AHR	105	Electricity for HVAC/R	4
AHR	140	Residential Sheet Metal	4
AHR	142	Servicing Forced Air Systems	4
AHR	162	Heating Controls	4
AHR	216	Uniform Mechanical Code	4
		Total Required Credits	**60**

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			10
			25
Required Major Courses			
PLU	101	Introduction to Plumbing	4
PLU	114	Piping Lab	2
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	103	Fundamentals of Gas Heating	4
AHR	142	Servicing Residential Forced Air Systems	4
		Total Required Credits	**63**

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			10
			25
Required Major Courses			
PLU	207	Basic Solar Energy	3
ENT	141	Passive Solar Systems I	3
BRI	120	Construction Elective	3
ENT	145	Passive Solar Retrofit	3
AHR	103	Fundamentals of Gas Heating	4
EGT	110	Basic CADD	6
EGT	120	Intermediate CADD	3
EGT	121	intermediate CADD: Architectural	3
EGT	130	Three Dimensional CADD	3
EGT	131	Three Dimensional CADD: Architectural	3
ENT	298	Solar Lab	3
		Total Required Credits	**62**

Certificate: Solar Construction

Required Major Courses			**Credits**
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	103	Fundamentals of Gas Heating	4
AHR	142	Servicing Forced Air Systems	4
PLU	101	Introduction to Plumbing	4
PLU	114	Piping Lab	2
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. Apprentice classes require 1,000 hours of on-the-job training in conjunction with each class. You must have the approval of the chair of Construction Technology, **303.914.6511**.

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

	Credits
General Education Requirements	15
Construction Technology Requirements	10
Apprentice Trade-Related Certificate	16-40
Construction Technology Electives (see CT Advisor)	4-20
Total Required Credits	**45-85**

Certificate: Apprentice-Related Carpentry

			Credits
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

This degree requires additional electives (see advisor).

			Credits
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**

Certificate: Apprentice-Related Electrical

			Credits
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

			Credits
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

Complete six of the eight courses

ARL	104	Basic Measuring and Layout	.5
ARL	105	Crane Setup, Rigging and Signaling	.5
ARL	107	Scaffold Setup and Safety Certification	.5
ARL	112	Basic Blueprint Reading	.5
ARL	113	Concrete Consolidation, Finishing and Tie Hole Patching	.5
ARL	114	Forklift and Bobcat Training	.5
ARL	115	Scissor Lift and Boom Lift Training	.5
ARL	116	Hand, Power and Pneumatic Tools and Compaction Operations	.5
		Total Required Credits	**3**

*Required course

Certificate: Apprentice-Related Masonry

			Credits
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 Painting

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

Certificate: Apprentice-Related Plumbing

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
		Total Required Credits	**32**

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. CRJ 290 Criminal Justice Seminar (one credit) must be taken the semester you plan to graduate (If you will graudate in the summer,enroll during the spring semester.).

Degree: 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	230	Criminology	3
CRJ	290	Criminal Justice Seminar	1
		Total Required Credits	**28**

General Education Requirements			
English/Speech			
ENG	121	English Composition I	3
SPE	115	Public Speaking	3
		or	
SPE	125	Interpersonal Communication	3
MAT (100 or above)			3
PHI	112	Ethics	3
Credit from one of the following two areas:			3
Science (AST, BIO, CHE, GEY, PHY)			
Social and Behavioral Sciences (ANT, ECO, GEO, HIS, POS, PSY, SOC)			
Total General Education Credits			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 three credits in CRJ 297 Internship.

Total Required Credits **64**

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
		or	
Required Courses for Juvenile Corrections			
CRJ	216	Juvenile Law	3
CRJ	235	Delinquent Behavior	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 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**

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 enforcement.

Degree: 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	Public Speaking	3
Humanities (courses from two different disciplines) (Must include PHI 112) ART 110, 111, 112; Foreign Language 111, 112, 211, 212; HUM 121, 122, 123; LIT 115, 201, 202; MUS 220, 121, 122; PHI 111, 112, 113; THE 211, 212			9
Mathematics (any course from the following) MAT 160, 171, 175, 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, 115, 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, 115; 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
CRJ	230	Criminology	3
CRJ	290	Criminal Justice Seminar	1
			28
		Total Required Credits	**62**

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 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 prerequisites 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**

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 Nonprofit Organizations	2
ACC	121	Accounting Principles I	5
MAN	200	Human Resources Management	3
MAN	226	Principles of Management	3
MAR	216	Principles of Marketing	3
		Total Required Credits	**25**

Drywall

(See Construction Technology)

Early Childhood Education Program

Information: **303.914.6533**.

Red Rocks Community College provides four possible alternatives for students desiring training in the early childhood education field. These alternatives are:

Preschool Group Leader Certificate-minimum 16 credits
Infant/Toddler Group Leader Certificate-minimum 16 credits
Director's Certificate-minimum 25 credits
AGS Degree in Early Childhood Education-minimum 60 credits

The AGS degree and certificates in early childhood education (ECE) at Red Rocks Community College provide comprehensive training in both the underlying theories of early childhood education and application of quality practices in early childhood care and learning environments. The program reflects an emphasis on:

1) Practices that nourish and facilitate relationships between caregivers, children and families

2) The concepts and applications of play-based, child centered, curriculum approaches

3) Professional advocacy and participation in the organizations and early childhood issues in Colorado

4) Meeting the diverse needs of families and children in a multicultural community

5) Nurturing readiness in literacy, math and science, promoting social and emotional development.

Designed to meet the needs of students currently working in the field, ECE classes are offered nights, weekends, and Monday afternoons. Red Rocks Community College offers core classes for the AGS degree during the day, evenings or weekends. Self-paced and online options are available for many courses. Please contact the Early Childhood Education Program coordinator for advising before or soon after enrollment. Some financial assistance may be available for indi- viduals already employed in the field.

Certificate: Group Leader

This program prepares graduates for group leader positions in early childhood care and education settings. A grade of C or better is required in all classes leading to a certificate or degree. Upon completion of these classes, students receive a Colorado Group Leader Certificate from Red Rocks Community College.

In addition to the academic requirements, the Colorado Department of Human Services requires nine months (1,302 hours) of work experience. Group leaders must be at least 18 years old.

All courses leading toward the Group Leader Certificate apply toward the requirements of the AGS degree with an emphasis in early childhood education.

Successful (80%) development and completion of the capstone course portfolio is required for graduation. Any student not completing the capstone portfolio must complete a portfolio before approval for graduation.

Program admission requirements:
All students enrolling in the Group Leader Certification Program must meet the minimum assessment scores required by the college, or prerequisite required by the program.

Choose one of the following two group leader options:

Certificate: Preschool Group Leader

Required Courses			**Credits**
ECE	101	Introduction to Early Childhood Professions	3
ECE	236	Child Growth and Development	4
ECE	103	Guidance Strategies for Children	3
ECE	220	Curriculum Development: Methods and Techniques	3
ECE	102	Early Childhood Lab Techniques (Capstone)	3
		Total Required Credits	**16**

Certificate: Infant/Toddler Group Leader

Required Courses			**Credits**
ECE	101	Introduction to Early Childhood Professions	3
ECE	236	Child Growth and Development	4
ECE	111	Infant and Toddler Theory and Practice	3
ECE	103	Guidance Strategies for Children	3
ECE	112	Infant and Toddler Lab Techniques (Capstone)	3
		Total Required Credits	**16**

Certificate: Director Early Childhood Education

This program prepares students for director-qualified positions in early childhood care and education programs. A grade of C or better is required in all classes leading to a certificate or degree. Upon completion of these classes, students will have met requirements for a Colorado Group Leader Certificate from Red Rocks Community College and an Early Childhood Director Certificate. This certificate meets director requirements for the Colorado Department of Human Services.

In addition to the academic requirements, the Colorado Department of Human Services requires 24 months (3,640 hours) of work experience. Directors must be at least 21 years old.

Successful (80%) development and completion of the capstone course portfolio is required for graduation. Any student not completing the capstone portfolio must complete a portfolio before approval for graduation.

All courses leading toward the Director Certificate apply toward the requirements of the AGS degree with an emphasis in early childhood education.

Program admission requirements:
All students enrolling in the director certification Program must meet the minimum assessment scores required by the college or prerequisite required by the program.

Required Courses			**Credits**
ECE	101	Introduction to Early Childhood Professions	3
ECE	236	Child Growth and Development	4
ECE	103	Guidance Strategies for Children	3
ECE	102	Early Childhood Lab Techniques	3
ECE	220	Curriculum Development: Methods and Techniques	3
ECE	205	Nutrition for the Young Child	3
ECE	240	Administration of Early Child Care and Education Programs (Capstone)	3
ECE	241	Human Relations for Early Child Professionals	3
		Total Required Credits	**25**

Degree: Associate of General Studies Early Childhood Education

The following courses meet the requirements for a two-year associate of general studies in early childhood education at Red Rocks Community College. A grade of C or better is required in all degree classes. Students completing degree requirements will have met the requirements for Preschool Group Leader Certificate, Infant/Toddler Group Leader Certificate, and Early Childhood Education Director Certificate.

Successful (80%) development and completion of the capstone course portfolio is required for graduation. Any student not completing the capstone portfolio must complete a portfolio before approval for graduation.

Program admission requirements:
All students enrolling in the Director Certification Program must meet the minimum assessment scores required by the college or prerequisite required by the program.

Core Curriculum Requirements			**Credits**
English/Speech	6		
ENG	121		
SPE	115		
Humanities			3
Select any two of the following			
ART	110, 111, 112		
SPA*	101, 102, 111, 112		
LIT	115, 201, 202		
MUS	120, 121, 122		
THE	105, 211, 212		

*** Recommended**

Mathematics/Business/ Computer Information Systems			3-5
Select any one of the following			
MAT	114, 171, 175, 201, 202		
BUS	110		
CIS	118		
Science			4-5
Select one of the following			
AST	101,102		
BIO	105,111,112		
CHE	101,102,111,112		
GEY	111,121		
PHY	111,112,211,212		

Required Major Courses			**Credits**
ECE	101	Introduction to Early Childhood Professions	3
ECE	102	Early Childhood Lab Techniques	3
ECE	103	Guidance Strategies for Children	3
ECE	236	Child Growth and Development	4
ECE	205	Nutrition for the Young Child	3
ECE	220	Curriculum Development: Methods and Techniques	3
ECE	240	Administration of Early Child Care and Education Programs (Capstone)	3
ECE	241	Administration for ECE	3
Electives (any seven courses from below)			
ECE	111	Infant and Toddler Theory and Practice	3
ECE	179	Special Topics	3
ECE	206	Child, Family and Community	3
ECE	207	Children's Literature	3
ECE	225	Language and Cognition	3
ECE	226	Creativity and the Young Child	3
ECE	237	Theories and Techniques Supporting Social and Emotional Growth of the Young Child	3
ECE	260	The Exceptional Child	3
ECE	279	Nurturing Language and Literacy	3
		Total Required Credits	**62-65**

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	3
ECO	101	Economics of Social Issues	3
HIS	101	Western Civilization I (Core)	3
HIS	102	Western Civilization II (Core)	3
HIS	137	Contemporary World History	3
Any other economics class offered			3
Required Courses			
ECO	201	Principles of Macroeconomics (Core)	3
ECO	202	Principles of Microeconomics (Core)	3

Core Curriculum Requirements

English/Speech

ENG	121	English Composition I	3
ENG	122	English Composition II	3
SPE	115	Public Speaking	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 (any course from the following) 3
MAT 160, 171, 175, 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 **60**

Education

Degree: Associate of Arts or Science

The emphasis would be for the student who intends to transfer to a four year college or university and enter a program to earn licensure in elementary, secondary or special education. Red Rocks is currently negotiating articulation agreements with various public and private universities. For more information contact Colleen Jorgensen, dean of instruction, at **303.914.6344**.

Electrical

(See Construction Technology)

Emergency Management and Planning

Degree: Associate of Applied Science

(Offered through CCCOnline)
Completion of this curriculum prepares you for:
• Entry into a career in emergency management and planning
• Promotion within an emergency management agency or the private sector.
• Advancement to a four-year college in pursuit of a bachelor of science degree in public administration, with emphasis in emergency management and planning.

Emphasis is placed on modern emergency management and planning techniques as currently practiced by the public and private sectors. The ability to perform essential work in a disaster requires unique skills and knowledge of emergency management and planning. These skills are covered in depth. The Federal Emergency Management Agency (FEMA) recognizes this program as one of the pioneering programs in the country. The emergency management and planning courses are available over the Internet, providing access flexibility and avoiding lengthy and costly travel. Registration for the program is accomplished over the Internet at **www.ccconline.org**. (Pick Red Rocks, then Emergency Management and Planning).
Information: **303.914.6462**.

Major Courses			**Credits**
EMP	101	Principles of Emergency Management	3
EMP	105	Emergency Planning	3
EMP	106	Exercise Design and Evaluation	3
EMP	107	Emergency Operations Center and Communications	3
EMP	109	Incident Command System	3
EMP	240	Leadership and Influence	3
EMP	241/247	Decision Making and Problem Solving or Decision Making in a Crisis	3

EMP	242	Effective Communications	3
EMP	244	Developing Volunteer Resources	3
EMP	291	Public Information Officer	3
			30

General Education Requirements

ENG	131	Technical Writing or English Composition I	3
or ENG	122	English Composition II	(3)
MAT	175	Introduction to Statistics	3
PSY	101	General Psychology or 3, one credit. PSY classes	3
SOC	101	Introduction to Sociology	3
CIS	118	Introduction to Microcomputer Applications	3
HUM	121	Survey of Humanities	3
			18

Elective Classes (Not on the Internet)

ENV	101	Intro to Environmental Science	3
FST	107	Hazardous Materials Awareness and Operations	3
FST	201	Instructional Methodology	3
MAN	116	Principles of Supervision	3
MAN	226	Principles of Management (on the internet)	3
EMP	108	Mass Casualty Response	3
EMP	297	Internship	1-6
EMP	299	Independent Study	1-6
POS	121/211	Intro to Public Administration (offered on the Internet) or Public Finance	3
			12-15
		Total AAS Degree Credits	**60**

Certificate: Emergency Management and Planning

The certificate program is geared toward current emergency management practitioners who want to upgrade their skills. The certificate program requires the completion of 30 hours of coursework. All courses except the internship and independent study courses are available over the Internet.

Major Courses			**Credits**
EMP	101	Principles of Emergency Management	3
EMP	105	Emergency Planning	3
EMP	106	Exercise Design and Evaluation	3
EMP	107	Emergency Operations Center and Communications	3
EMP	109	Incident Command System	3
EMP	240	Leadership and Influence	3
EMP	241	Decision Making and Problem Solving	3
EMP	242/247	Effective Communications or Decision Making in a Crisis	3
EMP	244	Developing Volunteer Resources	3
EMP	291	Public Information Officer	3
			30

Emergency Medical Services (EMS)

Meet with the emergency medical services faculty advisor before beginning any program of study.

Emergency Medical Technician Certificate I

To apply for a job as an EMT-Basic, one needs to pass the Colorado state certification exam. This college certificate program includes the courses needed to qualify to sit for the state exam.

EMS	124	Emergency Medical Technician Basic Clinical	1
EMS	125	Emergency Medical Technician Basic	9
		Total Required Credits	**10**

Emergency Medical Technician Certificate II

Prerequisites for application include approximately one year of field experience as an EMT-Basic along with several EMS courses. This college certificate program includes those courses needed to qualify to apply into most Denver Metro paramedic training courses.

EMS	124	Emergency Medical Technician Basic Clinical	1
EMS	125	Emergency Medical Technician Basic	9
EMS	130	Pre-hospital Intravenous Therapy	2
EMS	147	Basic EKG Interpretation	2
BIO	201	Human Anatomy and Physiology	4
BIO	202	Human Anatomy and Physiology	4
		Total Required Credits	**22**

Degree: Associate of Applied Science in Paramedicine

In order to work as a paramedic in Colorado, one needs to complete a state-approved paramedic course. Most EMS require managerial candidates to have at least an associate's degree. This program offers those already certified as a paramedic an opportunity to obtain a higher education degree.

Required Major Courses			**Credits**
EMS	225	Paramedicine I	14
EMS	226	Paramedicine II	13
EMS	279	Paramedicine III	8
BIO	201	Anatomy/Physiology I	4
BIO	202	Anatomy/Physiology II	4

General Education Requirements			**Credits**
ENG	131	Technical Writing	3
MAT	100	or higher	3
PSY	101	Intro to Psychology	3
SOC	101	Intro to Sociology	3
SPE	125	Interpersonal Commun.	3

Electives (any two courses from below)			Credits
ANT	101	Cultural Anthropology	3
ENG	121	English Composition	3
MAN	116	Principles of Supervision	3
MAN	226	Principles of Management	3
		Credits Required for Graduation	**64**

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 School of Mines, University of Colorado at Denver, Colorado State University, and the University of Colorado at Boulder. 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.

You are urged to consult with a Red Rocks Pre-Engineering/ Mathematics faculty advisor before beginning any program of study. Some courses might not be offered each semester.

Required Courses			Credits
CHE	111	General College Chemistry I (Core)	5
CHE	111	General College Chemistry I Lab	
CHE	112	General College Chemistry I (Core)	5
CHE	112	General College Chemistry I Lab	
PHY	211	Physics: Calculus-based I (Core)	5
PHY	211	Physics: Calculus-based I Lab	
PHY	212	Physics: Calculus-based II (Core)	5
PHY	212	Physics: Calculus-based II Lab	
MAT	201	Calculus I (Core)	5
MAT	202	Calculus II (Core)	5
MAT	204	Calculus III	5
MAT	261	Differential Equations	4

Core Curriculum Requirements

English/Speech			
ENG	122	English Composition II (Core)	3
ENG	121	English Composition I (Core)	3
SPE	115	Public Speaking	3

Arts and Humanities **6**

Select two courses from one or two disciplines

ART 110, 111,112; Foreign Languages 111, 112, 211, 212; HUM 121, 122, 123; LIT 115, 201, 202; MUS 121, 122; PHI 111, 112, 113; THE 211, 212

Social and Behavioral Sciences **6**

Select two courses from one or two disciplines

ANT 101,111; ECO 201, 202; GEO 105; HIS 101, 102, 201, 202; POS 105; 115; PSY 101, 102; SOC 101,102

Total Required Credits **60**

Engineering Graphics 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 a design drafter.

If you are seeking to upgrade or advance your current drafting and design 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. Consult with an engineering graphics technology faculty advisor before beginning any program of study: 303.914.6385

Area of Emphasis: Architectural

Along with the engineering graphics course work, 15 general education 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.

Recommended Courses			Credits
Select Minimum 15 Per Semester			
EGT	100	Technical Drawing	6
EGT	110	Basic CADD (Computer-Aided Design Drafting)	6
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
EGT*	200	Communication and Teamwork for Industry	3
EGA	207	Framing Methods	3
EGT	265	Presentation Graphics	3
EGA	231	Architectural Design/Drafting I	6
EGA	241	Architectural Design/Drafting II	6
EGA	209	Roof Design	3
			15
		Total Required Credits	**60**

*General Education Requirement

Area of Emphasis: Mechanical

Along with the Engineering Graphics course work, 15 general education 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.

Recommended Courses

Select minimum of 15 credits per semester			**Credits**
EGT	100*	Technical Drawing	6
EGT	110*	Basic CADD (Computer-Aided Design Drafting)	6
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
EGT	200*	Community and Teamwork for Industry	3
EGM	205	Assembly and Detail	3
EGT	265	Presentation Graphics	3
EGM	231	Mechanical Design/Drafting I	6
General Education Requirement*			
EGM	241	Mechanical Design/Drafting II	6
EGM	215	Mechanisms and Drives	3
			15
		Total Required Credits	**60**

***** Required for AAS

Certificate: Architectural

Recommended Courses

Select minimum of 15 credits per semester

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.

			Credits
EGT	100	Technical Drawing	6
EGT	110	Basic CADD (Computer-Aided Design Drafting)	6
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
EGT	200	Community and Teamwork for Industry	3
		Total Required Credits	**27**

Certificate: Mechanical

Recommended Courses

Select minimum of 15 credits per semester

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.

			Credits
EGT	100	Technical Drawing	6
EGT	110	Basic CADD (Computer-Aided Design Drafting)	6
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
EGT	200	Community and Teamwork for Industry	3
		Total Required Credits	**27**

Industry Upgrade Auto CAD

EGT	100	Technical Drawing	6
EGT	110	Basic CADD	6
EGT	120	Intermediate CADD	3
EGA	121	Intermediate CADD (ARCH)	3
EGM	121	Intermediate CADD (MECH)	3
EGT	130	Three-Dimensional CADD	3
EGA	131	Three-Dimensional CADD (ARCH)	3
EGA	131	Three-Dimensional CADD (MECH)	3
EGT	265	3D Studio Basic	3
EGT	266	3D Studio Advanced	3

Industry Upgrade Pro-Engineer

EGM	250	Pro/Engineer Basic Part and Assembly Design
EGM	251	Pro/Engineer Drawing/Detail Fundamentals
EGM	252	Pro/Engineer Fundamentals of Design
EGM	253	Pro/Engineer Advanced Applications
EGM	254	Pro/Engineer/Sheet Metal
EGM	260	Pro/Engineer Industry Upgrade

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			
ENG	125	Advanced Grammar	3
ENG	131	Technical Writing I	3
ENG	215	Playwriting	3
ENG	217	Business Communication and Report Writing	3
ENG	221	Creative Writing I	3
ENG	222	Creative Writing II	3
ENG	225	Advanced Topics in Composition	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
LIT	225	Introduction to Shakespeare	3
LIT	145	Literature of Women	3

Core Curriculum Requirements

English/Speech

ENG	121	English Composition I	3
ENG	122	English Composition II	3
SPE	115	Public Speaking	3

Humanities (courses from two different disciplines) 9
ART 110, 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 160, 171, 175, 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, 115; 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**

Entrepreneurship

E-Business

(See Business Administration)

Estimating Facility Maintenance

(See Construction Technology)

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.
Information: **303.914.6333**

Required Major Courses			**Credits**
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	107	Hazardous Materials I/Awareness and Operations	3
FST	152	Wildland Firefighter	3
FST	201	Instructional Methodology	3
FST	202	Firefighting Strategy and Tactics	3

FST	204	Codes and Ordinances	3
FST	205	Fire Cause Determination	3
PHE	100	Physical Education (or as approved by advisor)	2
			41

General Education Requirements

Science elective		CHE, BIO, PHY, AST or GEY	4-5
ENG	121	English Composition I	3
MAT	114	Career Math (or higher)	4
Humanities or Liberal Arts Course			3
Social and Behavioral Sciences Course			3
			17-18

Elective Courses **11**

EMS	125	EMT Basic	(10)
FST	259	Chemistry of Hazardous Materials I	4
EMS	237	Emergency Medical Technician—Paramedic	35
FST	101	Fire Academy (Firefighter II)	3
FST	110	Job Assessment	3
FST	111	Private Fire Protection Systems	3
FST	112	Fire Service Planning	3
FST	113	Introduction to Fire Prevention Awareness	3
FST	121	Rope Rescue	4
FST	131	Heavy Rescue Rope	2
FST	132	Structural Collapse	2
FST	133	Trench Rescue	2
FST	134	Confined Space	2
FST	135	Ice Rescue	2
FST	136	Swift Water Rescue	2
FST	137	Vehicle Extrication	2
CRJ	225	Crisis Intervention	3
CRJ	239	Managing Emergency Worker Stress	3
FST	150	Public Fire Prevention and Education (Public Fire Education)	3
FST	201	Instructional Methodology	3
FST	203	Fire Hydraulics	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 or EMP 109(internet)	3
FST	254	Hazardous Materials II (Technician Level)	6
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	2
FST	260	Intermediate Fire Behavior S-290	2
FST	261	Fire Operation in the Urban Interface	2
FST	262	Advanced Wildland Firefighter S-131	1
FST	263	Powersaws S-212	2
FST	264	Helicopter Crew S-217	2
FST	265	Ignition Operations S-234	2
FST	270	Basic Air Operations S-270	1
FST	290	Advanced Topics	1-3
FST	297	Cooperative Education Internship	1-6
FST	299	Independent Study and Analysis	1-3

** Required if you are not currently employed in the fire service, prerequisites FST 102, 103

Certificates: Fire Science Technology

Certificates may be obtained upon completion of the following. Please submit a written application to the director of fire science technology. Certificates can be applied to the required major courses for a fire science degree.

Certificate for Fire Officer I, II, and III will be offered completely online beginning Fall 2002. See below.

Certificate: Fire Fighter I (Online)

			Credits
FST	100	Essentials of Firefighting	5
FST	297	Fire Academy	4
PHE	100	Physical Fitness	1
		Total Required Credits	**10**

Certificate: Fire Officer I (Online)

			Credits
FST	201	Instructional Methodology	3
FST	202	Strategy and Tactics I	3
FST	204	Codes and Ordinances I	3
FST	205	Fire Cause Determination	3
FST	206	Supervision and Leadership	3
ENG	121	English Composition I	3
		Total Required Credits	**18**

Certificate: Fire Officer II (Online)

Required: Completion of Fire Officer I or permission of director fire science

			Credits
FST	253	Incident Command or EMP 109 (online)	3
FST	255	Fire Service Management	3
FST	207	Strategy and Tactics II	3
		Total Required Credits	**9**

Certificate: Fire Officer III (Online)

Required: Completion of Fire Officer I and II or permission of director of fire science

			Credits
FST	251	Fire Service and The Law	3
FST	256	Fire Administration	3
		Total Required Credits	**6**

Certificate: Hazardous Materials

			Credits
FST	107	Hazardous Materials Operations	3
FST	253	Incident Command	3
FST	254	Hazardous Materials Technician	6
FST	259	Chemistry of Hazardous Materials	4
		Total Required Credits	**16**

Certificate: Wildland Management

			Credits
FST	152	Wildland Fire fighting	3
FST	253	Incident Command or EMP 109 (online)	3
FST	261	Operations in Wildland Interface	3
		Total Required Credits	**9**

Certificate: Fire Inspector

			Credits
FST	105	Building Plans and Construction	3
FST	106	Inspection Practices	3
FST	204	Codes and Ordinances I	3
FST	208	Codes and Ordinances II	3
		Total Required Credits	**12**

Certificate: Fire Investigator

			Credits
FST	205	Fire Cause Determination	3
FST	252	Arson Investigations	3
FST	259	Chemistry of Hazardous Materials	4
CRJ	240	Criminal Investigations	3
FST	299	Independent Study- Fire Analysis	3
		Total Required Credits	**16**

Certificate: Driver Operator

			Credits
FST	151	Driver Operator	3
FST	203	Fire Hydraulics	3
		Total Required Credits	**6**

Certificate: Fire Instructor

			Credits
FST	201	Instructional Methodology	3
SPE	115	Public Speaking	3
		Total Required Credits	**6**

Certificate: Technical Heavy Rescue

			Credits
FST	121	Rope Rescue	4
FST	132	Structural Collapse	2
FST	133	Trench Rescue	2
FST	134	Confined Space	2
FST	137	Vehicle Extrication	2
		Total Required Credits	**12**

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 (FRE, GER, SPA)			
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	Public Speaking (Core)	3

Humanities (any course from the following) 3
ART 110, 111, 112; HUM 121, 122, 123; LIT 115, 201, 202; MUS 120, 121, 122; PHI 111, 112, 113; THE 105, 211, 212

Mathematics (any course from the following) 3-5
MAT 160, 171, 175, 201, 202

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, 115, 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, 115; PSY 101, 102; SOC 101, 102
9

Electives **15**
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	160	College Algebra (Core)	4
MAT	161	College Trigonometry	3

Core Curriculum Requirements

English/Speech

ENG	121	English Composition I	3
ENG	122	English Composition II	3
SPE	115	Public Speaking	3

Humanities (any two courses from the following) 6
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

Social and Behavioral Sciences (courses from two different disciplines)
ANT 101, 111; ECO 201, 202; GEO 105; HIS 101, 102, 201, 202; POS 105, 115; 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)

Heating

(See Construction Technology)

History

Degree: Associate of Arts Degree

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 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
GEO	105	World Regional Geography (Core)	3
HIS	101	Western Civilization I (Core)	3
HIS	102	Western Civilization II (Core)	3
HIS	137	Contemporary World History	3
HIS	201	U.S. History I (Core)	3
HIS	202	U.S. History II (Core)	3
POS	115	American Government (Core)	3
SOC	101	Introduction to Sociology I (Core)	3
			30

Core Curriculum Requirements

English/Speech

ENG	121	English Composition I	3
ENG	122	English Composition II	3
SPE	115	Public Speaking	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, 221, 222; PHI 111, 112, 113; THE 211, 212

Mathematics (any course from the following) 3
MAT 160, 171, 175, 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 **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**

Holistic Health and Continuing Education

Certificates: 15 Credits
Holistic Health
Holistic Nursing

This program was originally created for nurses and is now open to all interested persons who are ready to expand their knowledge and skills in holistic care. The program is intended to enhance health-care practice as well as to prepare one to be a facilitator in the redesigning of the new health care system. Courses are offered to integrate healing on all levels - physical, emotional, mental, and spiritual. To ensure enrollment, register no later than 10 days before class. The required courses are:

Required Courses			Credits
HHP	244	HOLISTIC NURSING I	1
HHP	254	HOLISTIC NURSING II	2
HHP	256	HOLISTIC NURSING III	2
(13 credits must be completed before participating in Holistic III)			
		Total Required Credits	**5**

Choose an additional 10 credit hours from the list below to complete the requirements for the certificate. It is recommended that at least one course be chosen from each of the four sub-categories. Courses are added frequently; please call the Health Careers Center at **303.914.6621** for a current brochure.

Course			Credits
Physical:			
HHP	115	Traceless Way	0.5
HHP	122	Qigong	1
HHP	125	Feldenkrais	0.5
HHP	130	First Degree Reiki	0.5
HHP	170	Reflexology	1
HHP	190	Crystals and Mineral use in Healthcare	0.5
HHP	202	Aromatherapy	0.5
HHP	205	Herbology	0.5
HHP	221	High Level Wellness	1
HHP	224	Massage Therapy	1
HHP	235	Nutritional Therapy and Health	0.5
HHP	236	Dance Therapy and Healing	0.5
HHP	242	Healing Touch, Level 1	1
HHP	245	Bridging to Hospice Nursing	0.5
HHP	246	Second Degree Reiki	1
HHP	252	Menopause: Natural and Traditional Approaches	0.5
Emotional:			
HHP	215	The Role of Art in Healing	1
HHP	216	Humor Playshops	0.5
HHP	249	Journaling, the Healing Journey	1
HHP	267	Living Without Limits	0.5
HHP	276	Creating Healthy Relationships	1
HHP	285	Stress Management	0.5
Mental:			
HHP	100	Exploring Complimentary Healing Methods	1
HHP	110	Neurolinguistic Programming I	0.5
HHP	212	Neurolinguistic Programming II	0.5
HHP	214	Exploring Your Dreams	1
HHP	222	Self-Hypnosis: The Basics	1
HHP	223	Hypnosis for Medical Professionals	1
HHP	227	Communication Skills	0.5
HHP	229	Wellness Counseling	1
HHP	265	Personal Power - Gift of Self-Esteem	1
HHP	283	Psychoneuroimmunology	0.5
HHP	287	Creating a Holistic Practice	0.5
Spiritual:			
HHP	104	The Healing Mind	0.5
HHP	135	Assessing Inner Resources – 1	1
HHP	140	Assessing Inner Resources – 2	1
HHP	160	Learn to Meditate	0.5
HHP	180	Turaya Meditation	1
HHP	213	Spiritual Role in Health Care	0.5
HHP	241	Healing Imagery: Body, Mind, Spirit	0.5
HHP	258	Journaling The Spiritual Journey	1
HHP	269	Healing Presence	1

Continuing Education for Health Professionals

These courses are offered on a credit/noncredit basis.

Course			Credits
HHP	106	Case Management	0.5
HHP	107	Camp Health Care	0.5
HHP	185	Basic Life Support(BLS)	1
HHP	201	Nuts and Bolts of Law	0.5
HHP	203	Women's Holistic Health Care	0.5
HHP	207	Patient Rights	0.5
HHP	208	Basic EKG Interpretation	1
HHP	209	Spanish for Health Care Level 1	1
HHP	210	Physical Assessment of the Adult	2
HHP	217	Phlebotomy Refresher	1
HHP	218	Supervision/Delegation	0.5
HHP	220	Advanced Law and Ethics	0.5
HHP	225	Introduction to Home Health Nursing	0.5
HHP	226	Intravenous Therapy	1
HHP	230	Trauma Assessment and Intervention	1
HHP	232	Caring for the Caregiver	0.5
HHP	238	Advanced EKG Interpretation	1
HHP	239	Intravenous (IV) Certification	5
HHP	243	Teaching in Community/Home Health Nursing	0.5
HHP	247	Phlebotomy	4
HHP	248	Conflict Resolution	0.5
HHP	250	Home Health Nursing Skills Part 1	0.5
HHP	251	Music as a Therapy for Wellness	1
HHP	255	Spanish for Health Care Level II	1
HHP	257	ACLS (Advanced Cardiac Life Support)	2
HHP	259	ACLS Recertification	0.5
HHP	260	Bereavement Counseling	0.5
HHP	263	Self-Esteem and the Child	1

HHP	264	Documentation in Home Health	0.5
HHP	266	Physical Assessment for Home Health	1
HHP	271	HEP/HIV Update	0.5
HHP	281	Home Health Nursing Skills Part II	0.5
HHP	282	System Issues and Specific Legal Requirements	0.5
HHP	289	Career Alternatives Within Nursing	0.5

Certificate: R.N. Refresher Program

A current Colorado RN license, proof of immunizations, liability insurance, CPR certification, and a letter from a physician stating you are physically and mentally able to participate in this course are required prior to participating in clinicals.

Required Major Courses		**Credits**
CER 200	Registered Nurse Refresher Course	12
CEN 210	Physical Assessment	2
	Total Required Credits	**14**

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	110	Art Appreciation (Core)	3
		or	
ART	111	Art History I (Core)	
		or	
ART	112	Art History II (Core)	
HIS	137	Contemporary World History	3
HUM	121	Survey of Humanities I (Core)	3
HUM	122	Survey of Humanities II (Core)	3
HUM	123	Survey of Humanities III (Core)	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)	
			27

Core Curriculum Requirements

English/Speech

ENG	121	English Composition I	3
ENG	122	English Composition II	3
SPE	115	Public Speaking	3
			9

Mathematics (any course from the following) 3
MAT 160, 171, 175, 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, 115; 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**

HVAC/R

(See Construction Technology)

Journeyman Laborer Maintenance Masonry

(See Construction Technology)

Management/ Marketing

(See Business Administration)

Mathematics

Degree: Associate of Science

The completion of the following courses is appropriate for 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. Some courses might not be offered each semester.

Required v Courses			**Credits**
MAT	201	Calculus I (Core)	5
MAT	202	Calculus II (Core)	5
MAT	204	Calculus III	5
MAT	255	Linear Algebra	3
MAT	261	Differential Equations	4

Core Curriculum Requirements

English/Speech

ENG	121	English Composition I (Core)	3
ENG	122	English Composition II (Core)	3
SPE	115	Public Speaking	3

Arts and Humanities **6**

Select two courses from one or two disciplines

ART 110, 111,112; Foreign Languages 111, 112, 211, 212; HUM 121, 122, 123; LIT 115, 201, 202; MUS 121, 122; PHI 111, 112, 113; THE 211, 212

Social and Behavioral Sciences **6**

Select two courses from one or two disciplines

ANT 101,111; ECO 201, 202; GEO 105; HIS 101, 102, 201, 202; POS 105; 115; PSY 101, 102; SOC 101,102

Science **10**

Select two courses from one or two disciplines

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

Computer Science Elective **4**

Select one course

CSC 160, 161

Transferable Electives **3**

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**

If you are planning to major in mathematics at a four-year college or university, you will find MAT 201 Calculus I is the (lowest level) mathematics course in which the credits earned will count toward a BA or a BS 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) The credits earned in the pre-requisite course(s) will not count toward a BA or a BS degree.

Medical Office Technology

The medical office programs are designed to prepare the student for a career as an allied health professional, assisting physicians in ambulatory settings. Prior to enrollment, basic-skills assessment must be done for both AAS and certificate students. Please call the LARC to schedule a time to take this test. A minimum grade of a C must be achieved for all required courses in order to receive a certificate or degree. The TOEFL test is required for international applicants whose primary language is other than English. Proof of immunizations, a letter from a physician stating the student is physically and mentally able to participate in this program and CPR certification is required prior to participating in this program.

Medical Assisting

Certificate: 44 Credits
Degree: Associate of Applied Science 60 Credits

The Medical Assisting program is designed to prepare the student for a career as a multi-skilled professional in the allied health field performing front-and back -office procedures. The student will be trained in a full range of administrative and clinical duties. This program is accredited by the Commission on Accreditation of Allied health Education Programs (CAAHEP) and all students that successfully complete the program are eligible to sit for the national certification exam to become a Certified Medical Assistant.

Certificate: Medical Assisting

Required Major Courses			**Credits**
MOT	102	Introduction to Medical Terminology	2
MOT	104	Law and Ethics	2
MOT	105	Anatomy and Physiology for Health Professionals	4
BTE	102	Keyboarding Applications (must type 25 WPM)	4
CIS	118	Introduction to PC Applications	4
MOT	110*	Medical Office Administration	4
MOT	120*	Medical Office Financial Management	3
MOT	150*	Pharmacology Practice	3
PSY	101	General Psychology	3
MOT	136*	Introduction to Clinical Skills	2
MOT	140*	Clinical Skills	4
MOT	138*	Laboratory Skills	4
MOT	130*	Insurance and Billing	3
MOT	188	Medical Assisting Internship	5
		Total Required Credits	**47**

* These courses are only offered during specific semesters, see course description.

Degree: Associate of Applied Science

To earn an associate of applied science degree in medical assisting you must complete all the courses in the certificate program as well as the courses listed below.

General Education Requirements			Credits
ENG	121	English Composition I	3
		or	
SPE	115	Public Speaking	(3)
MAT	109	Survey of Algebra (or higher)	4

Nine credits from any two of the following three areas:

Humanities (ART, FOL, HUM, LIT, MUS, PHI, THE)	
Science (AST, BIO, CHE, GEY, PHY)	
Social and Behavioral Sciences (ANT, ECO, GEO, HIS, POS, PSY, SOC)	9
	16
Total Required Credits	**63**

Medical Office (Front Office)

Certificate: 37 Credits
Degree: Associate of Applied Science
60 Credits

The Medical Office Program is designed to prepare the student for a career as an allied health professional, assisting physicians in front-office operations. This program provides a wide range of medical office administration services.

Certificate: Medical Office

			Credits
MOT	102	Introduction to Medical Terminology	2
MOT	104	Law and Ethics	2
MOT	105	Anatomy and Physiology for Health Professionals	4
BTE	102	Keyboarding Applications (must type 25 WPM)	4
CIS	118	Introduction to PC Applications	4
MOT	110*	Medical Office Administration	4
MOT	120*	Medical Office Financial Management	3
BUS	217	Business Communications and Report Writing	3
ACC	101	Fundamentals of Accounting	3
MAN	116	Principles of Supervision	3
		or	
BUS	115	Introduction to Business	(3)
MOT	130*	Insurance and Billing	3
MOT	184**	Administrative Internship	2
		Total Required Credits	**37**

* These courses are only offered during specific semesters; see course description.

** A TB test is required prior to start of internship.

Degree: Associate of Applied Science

To earn an associate of applied science degree in medical office you must complete all the courses in the certificate program as well as the courses listed below.

			Credits
Elective			7
General Education Requirements			
ENG	121	English Composition I	3
		or	
SPE	115	Public Speaking	(3)
MAT	109	Survey of Algebra (or higher)	4
Nine (9) Credits from any two of the following three areas:			
Humanities (ART, FOL, HUM, LIT, MUS, PHI, THE)			
Science (AST, BIO, CHE, GEY, PHY)			
Social and Behavioral Sciences (ANT, ECO, GEO, HIS, POS, PSY, SOC)			9
			23
		Total Required Credits	**60**

Certificate: Phlebotomy
9 Credits

This certificate is designed to prepare individuals to gain employment as a phlebotomist in the health care industry. Students will receive an extensive and varied program of study that includes theory and practice, specimen set-up and process, medical terminology specific to the laboratory, customer service skills, regulatory issues, venipuncture and fingerstick technique and numerous other collection procedures. The student gains knowledge in problem solving, legal implications, and other duties specifically associated with the health care industry, i.e. home health care, physician offices, hospital, etc. After successful completion of this course and the phlebotomy internship, the student is eligible to apply and sit for the national AMT (American Medical Technologist) certification exam.

Required Course			Credits
HHP	247	Phlebotomy Certification	6
HHP	248	Phlebotomy Internship	3
		Total Required Credits	**9**

Multimedia Technology

Degree: Associate of Applied Science

Associate of Applied Science
Graphics and Animation Technology
Production and Design Technology
Motion Graphics Animation

Degree: Associate of General Studies

Graphics and Animation Technology
Production and Design Technology
Motion Graphics Animation

Certificates:

Graphics and Animation Technology
Production and Design Technology
Motion Graphics Animation
Web Page Design
Advanced Web Page Design

The college offers both associate degrees and certificates in multimedia through the Art Department. If you plan to transfer to a baccalaureate institution you should consider the associate of general studies. The certificate program and associate of applied science degree prepares the student to enter the workforce upon graduation.

Degree: Associated Applied Science Graphics and Animation Technology

The Graphics and Animation emphasis within the Multimedia Technology Department prepares students for work in the traditional graphic design and printing industries. Students use the computer for electronic production and basic design techniques. In addition to printed graphics, students produce Web pages, multimedia presentations exploring digital video editing, QuickTime streaming, 3-D modeling and animation, and other cutting edge technology.

Required Multimedia Courses			**Credits**
MTD	101	Intro. to Computer for Graphics	3
MTD	102	Intro. to Multimedia	3
MTD	103	Production Design	3
MTD	111	Adobe Photoshop I	3
MTD	112	Adobe Illustrator I	3
MTD	113	QuarkXPress	3
MTD	118	Digital Color Theory	3
MTD	121	Painter for Digital Media	3
MTD	152	3D Animation	3
MTD	161	Director I	3
MTD	211	Adobe Photoshop II	3
MTD	213	Electronic Prepress	3
MTD	289	Management and Production	3
Faculty Advisor Approved Electives from MTD			6

Required General Education Courses

English/Speech - (3 credits)
ENG 121, ENG 131 or SPE 115 (or above) 3

Mathematics - (3 credits)
MAT 114 or above 3

General Education Elective 3
Choose from any two of the following three areas: 6

Social and Behavioral Science - (3 credits)
ANT, ECO, GEO, HIS, POS, PSY, SOC

Humanities - (3 credits)
ART, HUM, LIT, MUS, PHI, THE

Science - (3 credits)
AST, BIO, CHE, GEY, PHY

Total Required Credits **60**

Degree: Associated Applied Science Production and Design Technology

The Production and Design emphasis within the Multimedia Technology Department prepares students for work in various multimedia arenas including; informational kiosks, corporate and educational training, interactive games and interactive CD-ROM production. Students are exposed to many other exciting aspects of multimedia production such as sound and digital editing, Web page and site design and production and motion graphics.

Required Multimedia Courses			**Credits**
MTD	101	Intro. to Computer for Graphics	3
MTD	102	Intro. to Multimedia	3
MTD	103	Production Design	3
MTD	111	Adobe Photoshop I	3
MTD	113	QuarkXPress	3
MTD	118	Digital Color Theory	3
MTD	121	Painter for Digital Media	3
MTD	161	Director I	3
MTD	163	Sound Design I	3
MTD	171	Digital Video Editing I	3
MTD	261	Director II	3
MTD	289	Management and Production	3
Faculty Advisor Approved Electives from MTD			9

Required General Education Courses

English/Speech - (3 credits)
ENG 121, ENG 131 or SPE 115 (or above) 3

Mathematics - (3 credits)
MAT 114 or above 3

General Education Elective 3
Choose from any two of the following three areas: 6

Social and Behavioral Science - (3 credits)
ANT, ECO, GEO, HIS, POS, PSY, SOC

Humanities - (3 credits)
ART, HUM, LIT, MUS, PHI, THE 3

Science - (3 credits)
AST, BIO, CHE, GEY, PHY 3

Total Required Credits **60**

Degree: Associated Applied Science Motion Graphics Animation

The Motion Graphics Animation emphasis within the Multimedia Technology Department prepares students for work in digital 3-D animation modeling environments. Students combine traditional artistic skills of drawing, design and sculpture with a touch of video, lighting and special effects training. The students mix these skills with their expertise in object modeling and computer generated animation techniques to produce complete 3-D animation projects.

Required Multimedia Courses			**Credits**
MTD	111	Adobe Photoshop I	3
MTD	112	Adobe Illustrator I	3
MTD	122	Sculpting for Digital Media (or ART 226)	3
MTD	152	3D Animation	3
MTD	153	Character Animation I	3
MTD	155	LightWave I	3
MTD	171	Digital Video Editing I	3
MTD	253	Character Animation II	3
MTD	255	LightWave II	3
MTD	287	Animation Production	3
Faculty advisor approved electives from MTD			6

Required Art Courses			**Credits**
ART	121	Drawing I	3
ART	132	3-D Design	3
ART	270	Figure Drawing	3

Required Genereal Education Courses

English/Speech - (3 credits)
ENG 121, ENG 131 or SPE 115 (or above) 3

Mathematics - (3 credits)
MAT 114 or above 3

General Education Elective 3
Choose from any two of the following three areas: 6

Social and Behavioral Science - (3 credits)
ANT, ECO, GEO, HIS, POS, PSY, SOC

Humanities - (3 credits)
ART, HUM, LIT, MUS, PHI, THE 3

Science - (3 credits)
AST, BIO, CHE, GEY, PHY 3

Total Required Credits **60**

Articulation 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.

Degree: Associate of General Studies Graphics and Animation Technology

The Graphics and Animation emphasis within the Multimedia Technology Department prepares students for work in the traditional graphic design and printing industries. Students use the computer for electronic production and basic design techniques. In addition to printed graphics, students produce Web pages, multimedia presentations exploring digital video editing, QuickTime streaming, 3-D modeling and animation, and other cutting edge technology.

Required Major Courses			**Credits**
MTD	101	Intro. to Computer for Graphics	3
MTD	103	Production Design	3
MTD	111	Adobe Photoshop I	3
MTD	112	Adobe Illustrator I	3
MTD	113	QuarkXPress	3
MTD	118	Digital Color Theory	3
MTD	289	Management and Production	3
Faculty Advisor Approved Electives from MTD			6

Required General Education Courses

English/Speech - (3 credits)

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

Mathematics - (3 credits)
MAT 114 or above 3

Social and Behavioral Science -(9 credits)
ANT, ECO, GEO, HIS, POS, PSY, SOC 9

Arts and Humanities - (9 credits)
ART, HUM, LIT, MUS, PHI, THE 9

Science - (4 - 5 credits)
AST, BIO, CHE, GEY, PHY 4

Total Required Credits **60**

Degree: Associated General Studies Production and Design Technology

The production and design emphasis within the Multimedia Technology Department prepares students for work in various multimedia arenas including; informational kiosks, corporate and educational training, interactive games and interactive CD-ROM production. Students are exposed to many other exciting aspects of multimedia production such as sound and digital editing, Web page and site design and production and motion graphics.

Required Multimedia Courses			**Credits**
MTD	101	Intro. to Computer for Graphics	3
MTD	103	Production Design	3
MTD	111	Adobe Photoshop I	3
MTD	112	Adobe Illustrator I	3

MTD	113	QuarkXpress	3
MTD	118	Digital Color Theory	3
MTD	161	Director I	3
MTD	289	Management and Production	3

Faculty Advisor Approved Electives from MTD 3

Required General Education Courses

English/Speech - (3 credits)

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

Mathematics - (3-5 credits**)**
MAT 114 or above 3

Social and Behavioral Science -(9 credits)
ANT, ECO, GEO, HIS, POS, PSY, SOC 9

Arts and Humanities - (9 credits)
ART, HUM, LIT, MUS, PHI, THE 9

Science - (3 credits)
AST, BIO, CHE, GEY, PHY 3
Total Required Credits 60

Degree: Associated of General Studies Motion Graphics Animation

The motion graphics animation emphasis within the Multimedia Technology Department prepares students for work in digital 3-D animation modeling environments. Students combine traditional artistic skills of drawing, design and sculpture with a touch of video, lighting and special effects training. The student-mix these skills with their expertise in object modeling and computer generated animation techniques to produce complete 3-D animation projects.

Required Major Courses			**Credits**
MTD	111	Adobe Photoshop I	3
MTD	112	Adobe Illustrator I	3
MTD	152	3D Animation	3
MTD	153	Character Animation I	3
MTD	155	LightWave I	3
MTD	255	LightWave II	3

Required Art Courses			**Credits**
ART	121	Drawing I	3
ART	132	3-D Design	3
ART	270	Figure Drawing	3

Required General Education Courses

English/Speech - (3 credits)

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

Mathematics - (3 - 5 credits)
MAT 114 or above 3

Social and Behavioral Science (9 credits)
ANT, ECO, GEO, HIS, POS, PSY, SOC 9

Arts and Humanities - (9 credits)
ART, HUM, LIT, MUS, PHI, THE 9

Science - (4 - 5 credits)
AST, BIO, CHE, GEY, PHY 4
Total Required Credits 60

Certificate: Graphics and Animation Technology

The graphics and animation area prepares students for careers in printing, graphic design, and Web publishing. An established industry, the printing/graphics industry has many job opportunities and exciting projects to work on in the Denver metro area.

Required Major Courses			**Credits**
MTD	101	Intro. to Computer for Graphics	3
MTD	103	Production Design	3
MTD	111	Adobe Photoshop I	3
MTD	112	Adobe Illustrator I	3
MTD	113	QuarkXPress	3
MTD	118	Digital Color Theory	3
MTD	213	Electronic Prepress	3
MTD	152	3D Animation	3
MTD	211	Adobe Photoshop II	3

Faculty advisor approved electives from MTD 3

Total Required Credits 30

Certificate: Production and Design Technology

The production design technology area prepares students for the production of CD-ROM and DVD titles. There are many ways to take advantage of this technology. The most common projects area: electronic books and magazines, informational kiosks, interactive games, and corporate training. This exciting new industry is exploding and our students will have the necessary skills.

Required Major Courses			**Credits**
MTD	101	Intro. to Computer for Graphics	3
MTD	102	Intro. to Multimedia	3
MTD	111	Adobe Photoshop I	3
MTD	112	Adobe Illustrator I	3
MTD	161	Director I	3
MTD	163	Sound Design I	3
MTD	171	Digital Video Editing I	3
MTD	172	After Effects I	3
MTD	289	Management and Production	3

Faculty Advisor Approved Electives from MTD 3

Total Required Credits 30

Certificate: Motion Graphics Animation

The motion graphics animation area prepares students for 3D animation production work. Students gain skills for entry-level jobs in the fields of TV and movie production as well as presentation design.

Required Major Courses			Credits
MTD	111	Adobe Photoshop I	3
MTD	112	Adobe Illustrator I	3
MTD	152	3D Animation	3
MTD	153	Character Animation I	3
MTD	155	LightWave I	3
MTD	172	After Effects I	3
MTD	255	LightWave II	3

Required Art Courses			Credits
ART	121	Drawing I	3
ART	132	3-D Design	3
ART	270	Figure Drawing	3
		Total Required Credits	**30**

Certificate: Web Page Design

The Web Page Design Certificate within the Multimedia Technology Department prepares students for work in various levels of Web site production. Students learn the importance of page layout and design, as well as site design.

Required Multimedia Courses			Credits
MTD	101	Intro. to Computer for Graphics	3
MTD	111	Adobe Photoshop I	3
MTD	112	Adobe Illustrator I	3
MTD	141	Web Design I	3
MTD	241	Web Design II	3
		Total Required Credits	**15**

Certificate: Advanced Web Page Design

Students evaluate the look and feel of sites and learn HTML and HTML editors. Students are exposed to pre-production, production, and post-production concepts. Motion graphic techniques, scripting and database skills will be developed.

Required Courses include above required courses in addition to the following:			Credits
MTD	143	Web Motion Graphics Design	3
MTD	145	QuickTime Technologies	3
MTD	246	Web Scripting	3
MTD	247	Web Data Base	3
MTD	288	Web Design Production	3
		Total Required Credits	**15**

The Multimedia Technology Design Department uses state-of-the-art equipment for teaching. MTD has four classroom instructional labs with 20 - 24 workstations in each, one for each student and a teaching machine. An open computer lab allows students to work outside the classroom. The machines are the fastest available, currently Macintosh G4s. Peripheral devices are also available including: color output, BandW output, flat bed scanners, slide scanner, and video capture stations.

Nurse 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 are required prior to participating in clinicals.
Information: **303.940.9690**.

Required Course			Credits
NUA	101	Nurse Aide Theory/Lab	4
NUA	102	Nurse Aide Clinical	1

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	202	Human Anatomy and Physiology II	4
BIO	205	Microbiology	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	175	Introduction to Statistics	3
NUA	101	Nurse Aide Theory/Lab	4
NUA	102	Nurse Aide Clinical	1
NUT	100	Fundamentals of 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 meet the needs of students who are employees working in an industrial setting and wish to become better prepared for a safety-related position in the industry.

Occupational Safety Care Requirements			
OSH	112	Fire Protection	3
OSH	131	General Industry Standards	5
OSH	134	Construction Industry Standards	3
OSH	196	Safety Program Planning	3
OSH	200	Hazardous Materials	2
OSH	201	Worker's Compensation Cost Containment	2
OSH	202	Accident Prevention	3
OSH	203	Ergonomics: Managing Task Stress	3
OSH	207	Industrial Hygiene	3
OSH	240	Case Study Evaluation	5
OSH	250	Safety Training Methods	3
OSH Elective			9
	Total Credits		**44**

Note: OSHElectives for the certificate program include those listed for the dergree program, as well as MOT 106, Medical Office Technology.

Certificate: Occupational Safety Technology

The Occupational Safety Technology Certificate program is designed to meet the needs of students who are employees working in an industrial setting and wish to become better prepared for a safety-related position in industry. The Safety Certificate Program is comprised of the following courses:

Required Major Courses			**Credits**
OSH	112	Fire Prevention and Analysis	3
OSH	131	General Industry Standards	5
OSH	134	Construction Standards	3
OSH	196	Safety Program Planning	3
OSH	200	Hazardous Material Control	2
OSH	202	Accident Prevention	2
OSH	240	Case Study Evaluation	5
OSH	250	Safety Training Methods	3
OSH	XXX	Elective chosen from degree program electives.	4
		Total Required Credits	**30**

Painting

(See Construction Technology)

Park Ranger Technology

The Park Ranger Technology 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.

To become a full-time professional Park Ranger most hiring agencies have three basic requirements: 1) a bachelor's degree from an accredited institution of higher learning; 2) basic park ranger knowledge and skills; 3) seasonal park ranger employment experience. The Park Ranger Technology (PRT) certificate programs of concentration are designed around all agency requirements and allow students to design a program around specific interests, career goals, and previous training or education. The PRT Certificate Program is appropriate for the following individuals:

• Students with a high school diploma, or some college, wishing to begin a program of study to prepare them for employment as a professional Park Ranger. In addition to the PRT Certificate of Concentration the PRT program advisor will help you design an appropriate 2-year Associates Degree that can be transferred to a four-year institution.

• Students seeking part-time or full-time seasonal employment as a Park Ranger with an agency (local, state, or federal) which may not require a four-year degree. Students must first consult with the PRT program advisor before beginning any program of study.

• Students who already have a four-year degree in an unrelated field and who wish to make a career change. Consult with the PRT program advisor **303.914.6238**.

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	27
PAR	102	Introduction to Park Ranger Technology	3
PAR	297	Park Ranger Internship	3
		Total Required Credits	**33**

Certificate: Outdoor Recreation

The Outdoor Recreation Certificate provides a wide choice for those wishing to become employed as guides, outdoor instructors, safety personnel or rangers with both government and private agencies.

Required Courses			Credits
PAR	102	Introduction to Park Ranger Technology	3
PAR	205	Resource Interpretation	3
PAR	297	Park Ranger Internship	3

Elective Courses

Choose 21 credits from the following courses:

PED	152	Avalanche Safety Level I	1
PED	153	Hiking	1
PED	185	Nordic Skiing	2
PED	157	Mountaineering I	3
PED	150	Basic Rock Climbing	2
PED	151	Intermediate Rock Climbing	2
PED	156	Snow and Glacier Climbing	3
PED	161	Backcountry Cooking	1
PED	163	Orienteering/Routefinding	3
PED	162	Map and Compass for the Outdoors	3
PED	154	Backpacking	3
PED	186	Snowshoeing	1
PED	289	Outdoor Leadership	2
PED	252	Outdoor Equipment and Facilities	3
PED	255	Winter Mountaineering	3
PED	250	Wilderness Ethics	3
PED	165	Wilderness Survival Skills	3
PED	257	Winter Survival Skills	3
PED	237	Paddle Sports	2
		Total Required Credits	**30**

Certificate: Public Safety

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.

Required Courses			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	3
FST	152	Intro to Wildland Firefighting	3
FST	236	Fire Operations in the Urban Interface	2
		Total Required Credits	**24**

Certificate: Resource Interpretation

The Resource Interpretation Certificate is for those working with resource interpretation, naturalist or other nature center work with the public.

Credits			
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
		Total Required Credits	**12**

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.

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 semester.

First Session			Credits
PHI	111	Introduction to Philosophy	3
ENG	121	English Composition I	3
SPE	115	Public Speaking	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	1XX	Mathematics Core Course	3
			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
			16-17

Fourth Session			
POS	105	Introduction to Political Science	3
Humanities Core Course (except Philosophy)			3
Transferable electives			8
			14

Electives

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

Total Required Credits **60**

Physical Education - Outdoor Education

Degree: Associate of Arts with an Emphasis in Outdoor Physical Education

The completion of the following recommended course of study is appropriate if you intend to transfer to the University of Northern Colorado to complete a bachelor's degree in physical education with an emphasis in outdoor education, or to prepare yourself to apply to the Professional Teacher Education Program (PTEP). Please consult with your academic advisor and the outdoor physical education faculty advisor (**303.914.6238**) before beginning this program.

The associate of arts degree with an emphasis in outdoor physical education is also designed as a stand-alone program to allow the student to enter a career as an outdoor educator, wilderness guide, or to work in the outdoor retail industry.

Required Major Courses			**Credits**
ENG	121	English Composition I	3
ENG	122	English Composition II	3
SPE	115	Public Speaking	3
PED	150*	Basic Rock Climbing	2
PED	151*	Intermediate Rock Climbing	2
PED	289	Outdoor Leadership	2
PED	165	Wilderness Survival Skills	3
PED	237	Paddle Sports	2
PED	257	Winter Survival Skills	3
PED	297	Cooperative Ed.-Internship	3
		Total Required Credits	**26**

Required General Education Courses

Mathematics (complete one course) **3**
MAT 160, 170, 171, 175, 201

Physical Activity **(complete one course)** **1**
PED 110, 104, 106, 116, 111, 109, 186

Arts and Humanities **9**
(Complete three courses from two different disciplines)
ART 110, 111, 112; MUS 120, 121, 122; LIT 201, 202, 211, 212;

PHI 111, 112; THE 105, 211, 212; Foreign Language 111, 112, 211, 212, HUM 121, 122

Social and Behavioral Sciences **9**
(Complete three courses from at least 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

Science
(Complete the following two courses)

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

(Complete one course from the following)
AST 101, 102; BIO 105, 111, 112; CHE 101, 102, 111;
PHY 105, 111, 211 4

Total Required Credits **60**

*Transfer to UNC as one course

Outdoor Education Department Certificate Programs

Certificate: Ski Area Safety

This program will prepare students for work in the ski industry. Students will train for work in all traditional areas of safety as it relates to ski areas, such as working as a ski patroller or ski instructor, lift operator, retail/rental shop, trail-setter, trail construction, in-area hospitality guide, backcountry guide, and other jobs pertaining to client safety.

Required Courses			**Credits**
PED	**289**	**Outdoor Leadership**	**2**
PED	**157**	**Basic Mountaineering**	**3**
PED	**123**	**Outdoor Emergency Care**	**2**
PED	**152**	**Avalanche Safety Level I**	**1**
PED	**110**	**Fitness Conditioning**	**1**
PED	**257**	**Winter Survival Skills**	**3**
PED	**252**	**Outdoor Equipment and Facilities**	**3**
PED	**186**	**Snowshoe Touring**	**1**
PED	**185**	**Nordic Skiing**	**2**
PED	**297**	**Ski Area Internship**	**3**
		Total Required Credits	**21**

Certificate: Colorado River Guide

This program of study and experience will prepare the student to qualify as a professional river guide in the state of Colorado. Students will train to work in the whitewater rafting industry by meeting the qualifications as required by Colorado Statute 33-32-105.5 for professional river guides. In addition to the minimum qualifications, students will also prepare to be future trip leaders by completing this certificate program, which includes course work in outdoor recreation leadership, geology, wilderness ethics, and outdoor emergency care.

Required Courses			**Credits**
PED	110	Fitness and Conditioning	1
PED	237	Paddle Sports	2
GEY	205	Geology of Colorado	2
PED	289	Outdoor Leadership	2
PED	162	Map and Compass	3
PED	240	Whitewater Rafting/Guide 2	
PED	165	Wilderness Survival I	3
PED	123	Outdoor Emergency Care 3	
PED	297	Outfitter Internship	3
		Total Required Credits	**20**

NOTE: Prior to beginning either of the above certificate programs, students will need to consult with the program coordinator. Information: **303.914.6238** .

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
MAT	201	Calculus I (Core)	5
MAT	202	Calculus II (Core)	5
MAT	204	Calculus III with special topics	5
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	Public Speaking	3

Humanities (any two courses from the following) 6
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

Social and Behavioral Sciences (courses from two different disciplines) ANT 101, 111; ECO 201, 202; GEO 105; HIS 101, 102, 6
201, 202; POS 105, 111; PSY 101, 102; SOC 101, 102

Total Required Credits 61

Physician Assistant

Certificate: 75 Credits

Master's Degree Option

Physician assistants (PAs) are healthcare providers who are authorized to practice medicine under the supervision of a licensed physician. Many PAs have already enjoyed careers as allied health personnel.

A primary mission of the Red Rocks PA Program is to prepare PAs to work in communities and patient populations deemed to be medically underserved.

The program is a rigorous, year-round, full-time, 24 - month curriculum leading to a certificate that qualifies its graduates to sit for the Physician Assistant National Certifying Examination (PANCE).

The first 12 months are devoted to classroom, laboratory and small-group work, most of which is on campus. The second 12 months are devoted to a series off-campus clinical rotations, some of which may be scheduled at sites outside of metropolitan Denver. Qualified students may seek to co-register at an affiliate institution to obtain a master's degree, to be completed at the same time as the certificate.

Program Application and Prerequisites

Candidates must submit an application through the Centralized Application Service for Physician Assistants (CASPA) and a supplemental Red Rocks PA application. A personal interview is required. The annual application deadline is Jan. 5, for admission the following August of each year.

At the time of application, candidates must have completed a minimum of 90 credit hours at a regionally accredited institution of higher education with a minimum grade point of 2.75. At the time of application, the following courses must have been completed with a grade of C or better:

Minimum Course Credits	
College algebra or higher math	4
English electives	6
Human anatomy and physiology	6
Microbiology	3
Introduction to Statistics	3
Chemistry (with either organic or biochemistry)	10
Psychology or social science electives	6

Competence in medical terminology and computer literacy must be demonstrated, either by coursework or through letters of reference.

At the time of application, candidates must have had at least 2,000 hours of direct human patient care in a formal health care setting. The many professions that meet this requirements include: pharmacist, EMT, nurse, respiratory therapist, nurse's aide, medical office assistant with direct patient care duties, x-ray or surgical technologist or exercise physiologist.

One class of 25 students is admitted in August of each year. Advanced placement and credit for prior learning are not available. Tuition is approximately $257.65/credit hour for Colorado residents and $347.35/credit hour for nonresidents. Student fees average $200 per semester for all students. Tuition and fees are subject to change.

Prior to Clinical Rotations, students must undergo health screening and produce evidence of current CPR certification, and of immunization or immunity to diphtheria, tetanus, measles, mumps, rubella, varicella and hepatitis B (positive titer or immunization series), or sign a declination form and current TB screening.

Required Courses

First Year			**Credits**
PAP	200	Biochemistry and Cell Biology	3
PAP	203	Health Care Issues	1
PAP	205	Human Anatomy and Development	3
PAP	207	Health Promotion	1
PAP	210	Human Physiology	3
PAP	212	Introduction to Emergency Medicine	1
PAP	217	Introduction to Laboratory Medicine	1
PAP	218	Eval. of the Medical Literature	1
PAP	219	Medical Interviewing Skills	1
PAP	220	Physical Examination Techniques	1
PAP	221	Clinical Medicine I	3
PAP	222	Clinical Medicine II	3
PAP	223	Pediatrics	2
PAP	224	Introduction to Surgery	1
PAP	225	Women's Health Care	1
PAP	226	Clinical Procedures	1
PAP	228	Problem-Based Learning	1
PAP	230	Pharmacology I	1
PAP	231	Pharmacology II	3
PAP	235	Human Pathology,	4
PAP	240	Behavioral Science in Primary Care	3
			39

Second Year

PAP 260 - 269 36

Clinical rotations in family medicine, internal medicine, pediatrics, emergency medicine, surgery, women's health, orthopedics, geriatrics and psychiatry.

Total Certificate Credits 75

International transcripts must be evaluated by an agency acceptable to Red Rocks. A TOEFL test with a paper-based score of at least 600 is required of international candidates whose primary language is other than English or whose transcripts reflect course work not taught in English. An essential packet of materials, including CASPA information, is available online at www.rrcc.edu, or by calling **303.914.6386**.

Pipefitting/Pipe Trade Plumbing

(See Construction Technology)

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 (Core)	3
ECO	202	Principles of Microeconomics (Core)	3
HIS	137	Contemporary World History	3
HIS	201	U. S. History I (Core)	3
HIS	202	U. S. History II (Core)	3
POS	105	Introduction to Political Science (Core)	3
POS	111	American Government (Core)	3

Core Curriculum Requirements

English/Speech

ENG	121	English Composition I	3
ENG	122	English Composition II	3
SPE	115	Public Speaking	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 (any course from the following) 3
MAT 160, 171, 175, 201, 202

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

Electives 14

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

Total Required Credits 60

Production and Design Technology

(See Multimedia Technology)

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	215	Psychology of Adjustment	3
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	Public Speaking	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 160, 171, 175, 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; SOC 101, 102, 255			3
Electives			**23**

Biology and chemistry are highly recommended for psychology majors transferring to the university level. 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**

Public Administration

Degree: Associate of Arts

(offered through CCCOnline only) For more information go to www.ccconline.org.

Required Major Courses:

ACC	121	Principles of Accounting	4
BUS	158	Human Resource Management	3
MAN	226	Principles of Management	3
POS	121	Introduction to Public Administration	3
POS	125	State and Local Government	3
POS	211	Introduction to Public Finance	3
POS	215	Current Political Issues in Government	3
POS	221	Community Development and Planning	3

General Education

ENG	121	English Composition I	3
ENG	122	English Composition II	3
MAT	160	College Algebra	4
SPE	115	Public Speaking	3
POS	105	Introduction to Political Science	3
POS	111	American Government	3
SOC	101	Introduction to Sociology	3
PHI	112	Ethics	3
		Total	**25**

Humanities (select two of the following)

ART	110	Art Appreciation	3
HUM	121	Survey of Humanities I	3
LIT	115	Introduction to Literature	3
MUS	121	Development of Music I	3
PHI	111	Introduction to Philosophy	3
SPA	111	First-Year Spanish I	5
SPA	112	First-Year Spanish II	5
		Total	**25**

Physical and Biological Sciences (select one of the following)

AST	101	Astronomy I	4
AST	102	Astronomy II	4
BIO	105	Science of Biology	4
BIO	111	General College Biology I	5
CHE	111	General College Chemistry I	5
CHE	112	General College Chemistry II	5
PHY	111	Physics: Algebra Based I	5
PHY	211	Physics: Calculus-Based I	5
		Total	**4-5**
		Total Required Credits	**60-61**

Radiologic Technology

(In cooperation with Exempla Lutheran Medical Center and Exempla St. Joseph's Hospital)

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. The radiography program is also an entry-level program for advanced imaging modalities such as ultrasound, nuclear medicine and radiation therapy.

Please note that interested students must apply directly to the radiography program to gain admission.
Information: **303.914.6624.**

Required Major Courses			**Credits**
RTE	101	Introduction to Radiology	2
RTE	121	Radiologic Procedures 1	3
RTE	141	Radiographic Equipment and Imaging 1	3
RTE	181	Clinical Internship 1	5
RTE	111	Patient Care	2
RTE	122	Radiologic Procedures 2	3
RTE	142	Radiographic Equipment and Imaging 2	3
RTE	182	Clinical Internship 2	5
RTE	183	Clinical Internship 3	7
RTE	221	Advanced Medical Imaging	3
RTE	231	Radiation Biology / Protection	2
RTE	281	Clinical Internship 4	8
RTE	282	Clinical Internship 5	11
RTE	289	Registry Review (Capstone)	3
		Total	**60**
		Clinical Contact Hours	**1640**

General Education Requirements			**Credits**
MAT	109	Survey of Algebra	4
PSY	101	General Psychology	3
		or	
SOC	101	Introduction to Sociology	3
MOT	104	Anatomy and Physiology for Health Prof.	4
		or	
BIO	201	Human Anatomy and Physiology 1	4
		and	
BIO	202	Human Anatomy and Physiology 2	4
ENG	121	English Composition 1	3
CIS	118	Introduction to PC Applications	4
		or	
CIS	122	Introduction to Windows	1.33
		Total	**15-22**

Refrigeration, Roofing, Sheet Metal, Solar

(See Construction Technology)

Sociology

Degree: Associate of Arts

Sociology is the systematic and scientific study of the cultural, institutional, and interactional forces that drive social change, give rise to social institutions, and shape the everyday lives and realities of individuals. The completion of the following courses are 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.

Required Courses			**Credits**
SOC	101	Introduction to Sociology I (Core)	3
SOC	102	Introduction to Sociology II (Core)	3
Recommended Courses			
SOC	205	Marriage and Family	3
SOC	215	Contemporary Social Problems	3
SOC	226	Social Pschology	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 160, 171, 175, 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**

Real Estate and Small Business Management

(See Business Administration)

Speech Communication

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 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**
ASL	100	Introduction to Sign Language	3
ASL	111	American Sign Language	3
ASL	112	American Sign Language II	3
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	Public Speaking	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 105, 211, 212

Mathematics (any course from the following) 3
MAT 160, 171, 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 (Core)	3
THE	111	Acting I	3
		or	
THE	116	Technical Theatre	3
THE	211	Development of Theatre I (Core)	3
		or	
THE	212	Development of Theatre II (Core)	3
Choose one course from the following for a total of 3 credits:			
THE	170	Dance and Stage Movement	3
THE	271	Dance for the Musical Theatre	3
THE	210	Singing for Actors	3
THE	215	Playwriting	3
Choose two courses from the following for a total of 6 credits:			
THE	131	Theatre Production I	3
THE	132	Theatre Production II	3
THE	231	Theatre Production III	3
THE	232	Theatre Production IV	3
or any THE course not listed above			

Core Curriculum Requirements

English/Speech			
ENG	121	English Composition I	3
ENG	122	English Composition II	3
SPE	115	Public Speaking	3

Humanities (any course from the following) 3
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
Mathematics (any course from the following)
MAT 160, 171, 175, 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**

Degree: Associate of Arts with an Emphasis in Musical Theatre

The following courses prepare students for musical stage performance and are appropriate for those who plan to transfer to a four-year college or university to complete a major in musical theatre performance. Required for the associate of arts are 28 credits in the core curriculum and eight credits in general electives. To complete the emphasis in musical theatre, 22-24 credits in theatre arts are required. These 22-24 credits are as follows:

THE	105 -	Introduction to Theatre Arts	3
THE	111 -	Acting I	3
THE	125 -	Individual Singing Lessons for Musical Theatre	3
THE	126 -	Auditioning for Musical Theatre	1
THE	135 -	Stage Makeup I	2
THE	170 -	Dance and Stage Movement	3
THE	206 -	Voice Practicum	1-3
THE	210 -	Singing for Actors	3
THE	240 -	Voice and Diction	3
THE	271 -	Dance for Musical Theatre	3

Theatre Technology

Degree: Associate of Applied Science
Certificate: Variable Credits

This program, a two-year course of study, will prepare students for entry-level employment in technical support positions within the entertainment industry. In addition, it will provide the first two years of necessary course work for students who want to pursue advanced degrees at four-year institutions in theatre design and technology.

Required Courses			**Credits**
THE	105	Introduction to Theatre Arts	3
THE	116	Technical Theatre	3
THE	130	Safety: Tools and Materials	2
THE	131	Theatre Production I	3
THE	135	Stage Makeup I	2
THE	120	Drafting for the Performing Arts	3
		or	
THE	200	Painting, Drawing, Rendering, Model Techniques	3
THE	136	Stage Makeup II	2
THE	151	Stagecraft I	3
THE	216	Theatre Lighting and Design	3
THE	211	Development of Theatre I	3
THE	152	Stage Management	3
THE	132	Theatre Production I	3
THE	221	Set Design	3
THE	212	Development of Theatre II	3
THE	241	Stage Properties	3
THE	245	Basic Costume Design and Construction	3
THE	270	Resume and Portfolio Development	1
THE	297	Theatre Technology Internship (Field Education)	1-4
General Education Requirements			15

Certificate: Costume and Fashion Design

Students who earn this certificate will be prepared for entry-level employment in costume and fashion-design careers as stitchers, wardrobe managers, costume shop managers, workers in alterations and tailoring, makeup artists, window dressers, and other fashion and entertainment-related positions. This certificate also prepares students interested in pursuing an advanced degree in costume design and in the fashion industry.

THE	105	Introduction to Theatre Arts	3
THE	106	Basic Costume and Apparel Construction	3
THE	108	Basics of Pattern Drafting	3
THE	135	Stage Makeup I	2
THE	165	The Costume and Fashion Industry	2
THE	237	History of Costumes and Fashion	3
THE	132	Theatre Production II	3
THE	136	Stage Makeup II	2
THE	245	Basic Costume Design and Construction	3
THE	230	Costume Shop Organization	2
THE	297	Theatre Technology Internship (Field Education)	1-4
		Total Required Credits	**27-30**

Certificate: Stage Carpentry

This course of study trains students for entry-level positions as backstage technicians, running crew members, shop assistants, crew leaders, properties assistants, and set builders. Related professions that students might consider after earning this certificate are carpentry, cabinet making, and careers requiring construction skills.

			Credits
THE	105	Introduction to Theatre Arts	3
THE	116	Technical Theatre	3
THE	130	Safety: Tools and Materials	3
THE	151	Stagecraft I	2
SPE	125	Interpersonal Communications	3
THE	132	Theatre Production II	3
THE	216	Theatre Lighting and Design	3
THE	221	Set Design	3
THE	241	Stage Properties	2
THE	297	Theatre Technology Internship (Field Education)	1-4
		Total Required Credits	**24-27**

Water Quality Management Technology

Degree: Associate of Applied Science

The Water Quality Management Technology Program is a comprehensive study for all levels and areas of operations in the water and wastewater industry. In the program, students who are entering the industry can be introduced to the many functions and career opportunities within the field. They can then establish an educational program that best fits their goals and interests. Students who are working in the industry can obtain higher education and skill levels for higher operator certification by attending specific courses offered. A degree in water quality management technology will give a student all the instruction necessary for supervisory and management positions. Information: **303.914.6325.**

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 Systems	4
WQM	216	Biological and Bacteriological Water Quality Analysis	4
WQM	217	Disinfection Techniques in Water Quality Systems	4
			34

General Education Requirements	
English/Speech (ENG, SPE)	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)	
Science (AST, BIO, CHE, GEY, PHY)	
Social and Behavioral Sciences (ANT, ECO, GEO, HIS, POS, PSY, SOC)	

Other Required Courses			
CIS	118	Introduction to PC Applications	4
Elective Courses			**9**

Student must take 9 credits from the following courses or other courses as approved

WQM	106	Mechanical-Physical Treatment	3
WQM	107	Biological Treatment	3
WQM	108	Sludge Treatment	3
WQM	109	Water Distribution	3
WQM	115	Water Sources and Supply	3
WQM	116	Water Pre-treatment	3
WQM	117	Domestic Water Treatment Process	3
WQM	118	Wastewater Collection Systems	3
WQM	121	Environmental Sampling and Volume Measurement	3
WQM	122	Basic Electricity for Water Quality Systems	4
WQM	124	Water Certification Review for Class C and D	2
WQM	125	Water-Wastewater Certification Review for Class C and D	2
WQM	207	Operations and Control of Activated Sludge Systems	4
WQM	208	Advanced Wastewater Treatment	3
WQM	230	Industrial Monitoring and Treatment	3
WQM	299	Independent Study	1-6
		Total Required Credits	**67**

Woodworking

(See Construction Technology)

Course Descriptions

For the most current schedule, visit us online at:

www.rrcc.edu

opportunities, options, excellence

Course numbers and descriptions are subject to changes. TheColorado Community College System launched a common course numbering and common competency project to improve student transfer and to ensure curriculum quality across our system. The project will not jeopardize student credit and transfer options. For the latest information, visit www.rightchoice.com.

Course Descriptions

Course descriptions are listed in alphabetical order by program. Please refer to the current Class 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.

Co-requisite

A co-requisite is a course that must be taken in conjunction with another course during the same semester, e.g. a laboratory is a co-requisite to some computer, math and science courses.

Prerequisite

A prerequisite is a course that must be satisfactorily completed before taking the next higher level course. The prerequisite for a course may also be permission of the 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.

AAA - ACADEMIC ACHIEVEMENT

AAA 090 Academic Achievement Strategies
3 Credits

Students will develop personalized approaches to learn and succeed as they transition into college. Topics include goal-setting, time management, textbook reading strategies, note-taking, test-taking, listening techniques, concentration and memory devices, and critical thinking for student success.

AAA 109 Advanced Academic Achievement
3 Credits

Students will examine theories and practices associated with successful learning and adopt those that enhance their college success. Critical areas for study include education and career planning, effective communication, personal management, critical and creative thinking, development of community and awareness of diversity, leadership, and techniques for successful academic performance. This course is recommended for both new and returning students.

AAA 111 CRLA Tutor Certification - Regular
1 Credit

This course introduces tutors to effective tutoring strategies. Topics include guidelines for tutoring; how to plan, conduct and evaluate a productive tutoring session; recognizing needs of students; and developing effective learning strategies with students.

AAA 112 CRLA Tutor Certification - Advanced
1 Credit
Prerequisite: AAA 111

This course is an extension of AAA 111 and continues the study of effective tutoring skills. Topics include working with a diverse student population, communication skills and developing effective learning strategies with students.

AAA 113 CRLA Tutor Certification - Master
1 Credit
Prerequisite: AAA 112

This course is an extension of AAA 112 and continues the study of effective tutoring skills. Topics include learning strategies for specific subject areas, intercultural communication and group facilitation.

ACC - ACCOUNTING

ACC Computer Lab Courses

Some accounting courses have a computer lab accompanying them. The lab is added to the credits for the related course.

ACC 101 Fundamentals of Accounting
3 Credits

This course presents the basic elements and concepts of accounting, with emphasis on the procedures used for maintaining journals, ledgers and other related records and for completion of end-of-period reports for small service and merchandising businesses.

ACC 121 Accounting Principles 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 Accounting Principles 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 125 Computerized Accounting
3 Credits (4 with lab)

Co-requisite: Computer Lab
Prerequisite: ACC 101 or 121

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 131 Income Tax I
3 Credits
Prerequisite: None, although ACC 121 is recommended

This course is the study of basic concepts of federal income taxation, including gross income, deductions, accounting periods and methods, and property transactions, with emphasis on taxation of individuals and sole proprietorships.

ACC 135 Spreadsheets/Accounting
3 Credits (4 with lab)
Co-requisite: Computer Lab
Prerequisite: ACC 101 or 121, CIS 118

This course introduces spreadsheets as an accounting tool. Using an accounting perspective, the student will apply fundamental spreadsheet concepts. The spreadsheet will be used as a problem-solving and decision-making tool.

ACC 138 Payroll and Sales Tax
3 Credits
ACC 101 or 121 or equivalent knowledge is required as either a co-requisite or a prerequisite

This course acquaints students with laws pertaining to payroll and sales taxes including recordkeeping rules. Students will prepare various federal, state and local forms for reporting payroll taxes and sales taxes. A computerized payroll simulation is included in the course.

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
4 Credits
Prerequisites: ACC 122, MAT 090 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
4 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, cash flow statements, revenue recognition, full disclosure, 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
3 Credits
Prerequisite: ACC 122, MAT 090 or equivalent

This course studies cost accumulation methods and management reports. The concepts and procedures of job order, process, standard and direct cost systems, budgeting, planning and control of costs are also covered.

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.

ACT - AUTO COLLISION TECHNOLOGY

(In cooperation with, and held at, Warren Tech)

ACT 111 Metal Welding and Cutting I
3 Credits

This course covers sheet metal oxygen-acetylene welding and welding techniques, including safety, materials, equipment and setups. Personal and vehicle protective measures prior to welding procedures will also be covered in this course.

ACT 121 Non-Structural Repair Preparation
3 Credits

This course covers the basic characteristics of automotive preparation for repair. Participants will familiarize themselves with damage analysis, extent of damage and the sequence of repair. Removal of vehicle components and protection of panels along with storage and labeling of parts will also be covered. Safety procedures and equipment use will be included.

ACT 122 Panel Repair and Replacements
3 Credits

This covers straightening techniques including tension pulls/stress relief, metal finishing, metal shrinking and the use of fillers. The student will learn the identification, handling and replacement of parts such as adjustment and alignment of bolt-on parts, fixed parts and accessories. Training covers the use of adhesives, sound deadeners and welding methods performed during repairs.

ACT 123 Metal Finishing and Body Filling
3 Credits

This course covers metal finishing, metal shrinking and the use of cosmetic fillers. Emphasis is on the use of proper tools required to perform these task, as well as use, selection and safety procedures for tools and equipment used.

ACT 131 Structural Damage Diagnoses
3 Credits

The participant will study and apply methods of frame measurement using dimension charts and service manuals. Training includes the use of self-centering gauges, mechanical measuring and electronic measuring. Terms for and definitions of vehicle structures, vehicle diagnosis will be covered, as well as identification and analysis of damage. The participant will also learn the basic hookups and safety procedures for making corrective pulls.

ACT 141 Refinishing Safety
1 Credit

The participant will study sound safety procedures used in refinishing. Proper fit and use of various types of protective equipment will be taught. The identification of tools and equipment, their uses and maintenance will also be covered along with the national guidelines for proper disposal and handling of hazardous materials.

ACT 142 Surface Preparation I
2 Credits

This course emphasizes surface preparation for refinishing including cleaning, sanding, feather edging, chemical treatment of bare metals and priming. The application of primers, including why and where to use them will be covered. In addition, the student will be trained in proper removal and storage of exterior trim and protection of adjacent panels.

ACT 143 Spray Equipment Operation
2 Credits

Participants will inspect, clean and determine condition of spray guns and related equipment. This course also includes adjusting, setting up and testing spray guns.

ACT 144 Refinishing I
2 Credits

The participant will apply automotive paint systems., including locating color codes, mixing formulas, matching and selectioning materials, using and adjusting a paint gun. In addition, the participant will study masking and detailing techniques.

ACT 151 Plastics and Adhesives I
1 Credit

This course covers state-of-the-art repair of both rigid and flexible plastic components and adhesives using the latest manufacturer's repair techniques.

ACT 161 Suspension and Steering
2 Credits

This course teaches inspection, alignment and adjusting suspension system components. Included will be inspection, removing, adjustment and replacing power steering components, identification of parts and usage.

ACT 162 Heating and Air Conditioning
2 Credits

This course covers the theory of operation and defines related terms. It identifies components, specialty tools and equipment. The student will be able to recover refrigerant and evacuate, recharge, and leak-test an automobile air conditioning system.

ACT 163 Brakes
2 Credits

This course covers inspecting, adjusting, removing and reinstalling brake drums and/or drum/hub assemblies and wheel bearings. Participants will identify and use the proper procedures for handling brake dust and electronic equipment for diagnosing.

ACT 164 Fuel, Intake and Exhaust Systems
1 Credit

This course trains the student with proper handling of exhaust systems, fuel lines and fuel EVAP control systems. Proper disposal of parts will also be covered.

ACT 165 Drive Train
1 Credit

This course covers removal and replacement of drive train components such as linkages, electronic connectors and components.

ACT 166 Electrical
2 Credits

This course covers inspection,testing and replacng electronic components. Participants will check voltages in wiring circuits, check operation of all electrical power systems and demonstrate the proper self-grounding procedures for handling electrical systems.

ACT 167 Cooling System
2 Credits

This course covers inspection,testing and replacement of the components of the cooling system. Participants will check the operation of the system and relate this learning to the collision repair process.

ACT 211 Metal Welding and Cutting II
2 Credits

This course covers procedures of seam welds, stitch welds and destructive testing, resistance spot welding, which includes two-sided spot weld, plasma cutting, safety, materials, equipment and operating procedures, with emphasis on shop safety.

ACT 217 Automotive Collision Technology Laboratory Experiences
1 to 9 Credits

This course expands competencies/skills identified in ACT-111 and ACT-211. Laboratory experiences include demonstrations and hands-on automotive collision technology experiences both on and off school/college sites. Laboratory experience credits/hours may be needed to meet NATEF requirements.

ACT 219 Metal Welding and Cutting Internship
1 to 9 Credits
Prerequisite: ACT 111

This course meets in a work-based environment. Laboratory experience credits/hours may be needed to meet NATEF requirements.

Non-Structural Analysis and Damage Repair Area
13 Credits

For every task in non-structural analysis and damage repair, the following safety requirements must be strictly enforced:

• Comply with personal and environmental safety practices associated with clothing, respiratory protection, eye protection, hand tools, power equipment and proper ventilation

• Handle, store, and dispose of chemicals/materials in accordance with local, state, and federal safety and environmental regulations

ACT 221 Movable Glass and Hardware
2 Credits

This course covers how to remove and replace electrical and mechanical door glasses,vent windows and glass mechanisms. Interior trim panels, seats and headliners will be removed and replaced, with instruction in the proper care and treatment of vehicle seat protectors. Instruction includes the proper use of tools required to perform these tasks.

ACT 227 Automotive Collision Technology Laboratory Experiences
1 to 9 Credits

This course is related to competencies/skills identified in the above courses. Laboratory experiences include demonstrations and hands-on automotive collision technology experiences both on and off school/college sites. Laboratory experience credits/hours may be needed to meet NATEF requirements.

ACT 229 Non-Structural Analysis and Damage Repair Internship
1 to 9 Credits
Prerequisite: ACT 121, ACT 122, ACT 123, ACT 221

This course meets in a work-based environment. Internship experience credits/hours may be needed to meet NATEF requirements.

ACT 231 Advanced Structural Damage Diagnosis and Repair
3 Credits

This course covers major body repair and the equipment and techniques used to straighten and align damaged frames on conventional and unibody structures. Also included will be identification and analysis of frames, hot- and cold-stress relieving, servicing and sectioning of structural frames. During this process the

student will learn the liability issues and importance of making these corrections to the manufactures recommendations and industry standards.

ACT 232 Fixed Glass
2 Credits

This course covers removing and replacing fixed glass, using manufacturer's specifications, proper tools and recommended materials. Included are the removing and replacing modular glass using manufacturer's specifications and procedures.

ACT 237 Automotive Collision Technology Laboratory Experiences
1 to 9 Credits

This course expands competencies/skills identified in the above courses. Laboratory experiences include demonstrations and hands-on automotive collision technology experiences both on and off school/college sites. Laboratory experience credits/hours may be needed to meet NATEF requirements.

ACT 239 Structural Analysis and Damage Repair Internship
1 to 9 Credits
Prerequisites: ACT 131, ACT 132 and may include ACT 231 and ACT 232

This course meets in a work-based environment. Internship experience credits/hours may be needed to meet NATEF requirements.

ACT 241 Paint Defects – Causes and Cures
3 Credits

This course covers paint defects, with emphasis on the causes of paint defects and how to cure problems during and after refinishing procedures, proper surface preparation and equipment for paint film thickness and proper temperatures for refinishing.

ACT 242 Surface Preparation II
2 Credits

This course emphasizes surface preparation for refinishing, including cleaning, sanding, feather edging, chemical treatment of bare metals and priming. The application of primers, including why and where to use them, will be covered.

ACT 243 Refinishing II
2 Credits

This advanced course teaches the necessary skills to tint and blend panels working with the latest finishes and paints. Special coatings and procedures will be covered in this course.

ACT 244 Final Detail
2 Credits

The participant will learn about detailing in vehicle paint refinishing. Transfers and tapes will be included.

ACT 247 Automotive Collision Technology Laboratory Experiences
1 to 9 Credits

This course expands competencies/skills identified in the above courses. Laboratory experiences include demonstrations and hands-on automotive collision technology experiences both on and off school/college sites. Laboratory experience credits/hours may be needed to meet NATEF requirements.

ACT 249 Painting and Refinishing Internship
1 to 9 Credits
Prerequisite: ACT 141, ACT 142, ACT 143, ACT 144 and may include ACT 241 and ACT 242

This course meets in a work-based environment. Internship experience credits/hours may be needed to meet NATEF requirements.

ACT 251 Plastics and Adhesives II
1 Credit

This advanced course covers state-of-the-art repair of both rigid and flexible plastic components using the latest manufacturer's techniques. Sheet-molded compound procedures and the use of proper adhesives will be covered.

Plastics and Adhesives Area
2 Credits plus lab

For every task in plastics and adhesives, the following safety requirements must be strictly enforced:

• Comply with personal and environmental safety practices associated with clothing, respiratory protection, eye protection, hand tools, power equipment and proper ventilation

• Handle, store and dispose of chemicals/materials in accordance with local, state, and federal safety and environmental regulations

ACT 257 Automotive Collision Technology Laboratory Experiences
1 to 9 Credits

This course expands competencies/skills identified in the above courses. Laboratory experiences include demonstrations and hands-on automotive collision technology experiences both on and off school/college sites. Laboratory experience credits/hours may be needed to meet NATEF requirements.

ACT 259 Plastics and Adhesives Internship
1 to 9 Credits
Prerequisite: ACT-151and may include ACT-251

This course meets in a work-based environment. Internship experience credits/hours may be needed to meet NATEF requirements.

Structural Analysis and Damage Repair Area
14 Credits

For every task in structural analysis and damage repair, the following safety requirement must be strictly enforced: • Comply with personal and environmental safety practices associated with clothing, respiratory protection, eye protection, hand tools, power equipment and proper ventilation

• Handle, store and dispose of chemicals/materials in accordance with local, state, and federal safety and environmental regulations

Mechanical and Electrical Components Area

13 Credits

For every task in Mechanical and Electrical components, the following safety requirement must be strictly enforced:

• Comply with personal and environmental safety practices associated with clothing, respiratory protection, eye protection, hand tools, power equipment and proper ventilation

• Handle, store and dispose of chemicals/materials in accordance with local, state, and federal safety and environmental regulations

ACT 266 Restraint Systems
1 Credit

Participants will inspect, remove and replace active restraint systems, passive restraint systems and supplemental restraint systems, along with disarming, diagnosing using electronic equipment and trouble codes. Instruction for passive restraint replacement is also covered in this course.

ACT 267 Automotive Collision Technology Laboratory Experiences
1 to 9 Credits

This course is related to competencies/skills identified in the above courses. Laboratory experiences include demonstrations and hands-on automotive collision technology experiences both on and off school/college sites. Laboratory experience credits/hours may be needed to meet NATEF requirements.

ACT 269 Mechanical and Electrical Components Internship
1 to 9 Credits
Prerequisites: All ACT 100 level courses and may include ACT 200 level.

This is a course designed to meet the needs of the participant in this chosen specialized area in a work-based environment. Internship experience credits/hours may be needed to meet NATEF requirements.

ACT 279 Insurance internship
1 to 20 Credits

This is a course designed to meet the needs of the participant in this chosen specialized area. Internship experience credits/hours may be needed to meet industry requirements. During this course the instructor will meet twice monthly at the job site to check competencies. During this course it will be required that the student obtain IICAR certification.

AHR - AIR CONDITIONING, HEATING AND REFRIGERATION

AHR 103 Fundamentals of Gas Heating
4 Credits

This course introduces students to the fundamentals of gas heating. Students 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 and Combustion Air Systems
4 Credits
Prerequisite: AHR 103

This course gives students 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. Students learn how to properly complete a heat loss calculation. This course also studies how to apply code requirements for combustion air and venting systems. (Offered fall semester only)

AHR 105 Electricity for HVAC/R
4 Credits

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

AHR 110 Refrigeration Fundamentals
4 Credits
Co-requisite: AHR 105

This course covers basic refrigeration theory and practice, safety, hermetic systems, refrigerants and tools and equipment used in refrigeration servicing.

AHR 114 Centrifugal Pumps
1.5 Credits

This course will present information on why and how pumps are designed. It covers how pumps work and what causes pumps to fail. Topics covered include pump basics, pump theory, pump systems, pump design and selection, horizontal pump installation, and pump maintenance and troubleshooting.

AHR 122 Air Conditioning Systems
4 Credits

This course studies the basics of air conditioning system design, operation and installation. Students 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 122 Refrigeration and Air Conditioning
1.5 Credits

This course is a comprehensive course on the basics of refrigeration and air conditioning. It provides an excellent blend of theory with job-qualifying skill development using hands on training. The course covers the practical application of refrigeration and air conditioning in domestic, commercial, and heat pump applications. It also provides a basis of information allowing you an understanding of servicing and troubleshooting techniquest. FREE EPA certification testing, plus HVAC Excellence Technician's Certificate testing are offered.

AHR 125 Refrigerant Recovery Training
1 Credit

This course explains the laws regarding refrigerant recovery. The course includes hands-on use of recovery equipment. Upon successful completion of this course, students will be prepared to take the EPA certification test. Test is offered following the class. Test fee is not included in course fee.

AHR 126 Refrigerant Retrofit Training
1.5 Credits

This comprehensive step-by-step program will allow you to understand and gain knowledge to perform Refrigerant Retrofit. This course will provide you with a working knowledge of alternative refrigerants plus an understanding of retrofit procedures. A quick history of CFC ozone depletion will give you an understanding of EPA mandates, then we will arm you with the knowledge of how to stay in compliance with retrofitting existing equipment, accompanied by an opportunity to become EPA certified.

AHR 132 Air Conditioning and Refrigeration Controls
4 Credits
Prerequisite: AHR 105 or permission of instructor

This course is an extension of AHR 105. The course 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 134 Chillers
1.5 Credits

Whether you maintain and service HVAC systems, chillers, or cooling towers, or oversee all the functions of a facility, it is imperative that the water cooling system operates at maximum efficiency. This course will provide you with the skills and experience necessary to stop trouble before it starts. Keep your system functioning at optimum performance. Discover the latest technology so you will know what you are buying and what is best for your system.

AHR 140 Residential Sheet Metal

4 Credits

This course is designed for those who wish to enter the HVAC trade. Students 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. Layout and fabrication of sheet metal planners, transitions and fittings is a large part of this class. (Offered fall semester only)

AHR 142 Servicing Forced-Air Systems

4 Credits
Prerequisite: AHR 103 and 105

This course covers the operation, repair and maintenance of forced-air heating systems. The course 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 103, 105

This course examines low-pressure steam systems, including boilers, piping, and 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. (Offered spring semester, even years)

AHR 162 Heating Controls

4 Credits
Prerequisite: AHR 105 or permission of instructor

This course is an extension of AHR 105. The course 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 AC Systems Service and Repair

4 Credits
Prerequisite: AHR 105, AHR 110 or permission of instructor

This course emphasizes the service of HVAC systems. Students 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. (Offered spring semester only)

AHR 194 Fundamentals of Pneumatic Comfort Controls

1.5 Credits

This course is intended to be an introduction to the subject of Pneumatic Comfort Controls. It is device oriented and provides a thorough treatment of those devices commonly utilized in Comfort Control Systemts including theory and basic operation of pneumatic thermostats, receiver-controllers, relays, dampers, valves and pneumatic actuators. Calibration, operation and preventive maintenance aspects of these components are highlighted.

AHR 202 Pneumatic Controls

4 Credits

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

AHR 203 Hydraulics Training

1.5 Credits

Whatever your fluid power applications, you can increase your knowledge of basic hydraulics, become a better troubleshooter and lower maintenance costs by attending this information packed course. Training stations are utilized in each training session. Cutaways of all major components are used in the sessions to visually demonstrate the components' construction and operation. Develping an understanding of "How" it works leads to an understanding of how and why it fails.

AHR 204 Boilers: An Operators Workshop

1.5 Credits

This "operator-oriented" program has been designed to directly address the needs of those who have responsibility for the safe operation and maintenance, as well as the economics, associated with commercial and industrial boilers.

AHR 206 Hot Water Heating Systems

4 Credits
Prerequisites: AHR 103, 105

This course covers the theory of operation behind these systems, as well as installation, maintenance and repair. The course 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, students are able to design, install, document, maintain and troubleshoot 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. The course is intended to give those entering the HVAC/R trade, as well as those tradespeople taking certification examinations, a sound knowledge of this code.

AHR 217 Refrigeration Operator

AHR 218 Journeyman Refrigeration
2-4 Credits

These 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. The course 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. (Offered spring semester, odd years)

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 the course to heating equipment. Forced air, hot water and steam systems are examined.

AHR 240 Commercial Heating Systems
4 Credits
Prerequisites: AHR 103, 162 and experience with residential heating systems

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.

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 a 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.

AHR 291 Honeywell Indoor Air Quality Training
0.5 Credits

This lecture course introduces the student to common indoor air quality problems. The students are given the opportunity to learn about solutions to these problems through proper application of mechanical equipment. Sizing and selling this equipment is also discussed. This course is taught in cooperation with Honeywell and Colorado Air Quality Products.

ANT - ANTHROPOLOGY

ANT 101 Cultural Anthropology (Core)
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 (Core)
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

Students will gain an appreciation of the history and archaeology of Mexico and Guatemala through an up-to-date study of the following cultural areas: (1) Western Mexico, (2) the Basin of Mexico, (3) Peubla-Oaxaca Highlands, (4) Oaxaca Valley, (5) Gulf Coast Veracruz, (6) Tehuantepec Isthmus and the Guatemalan Pacific Plain, (7) the Maya Lowlands and (8) the Maya Highlands: Chiapas and Guatemala.

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.

ARB - APPRENTICE-RELATED PAINTING

ARB 111 and 112 Painting I (Year I)
4 Credits Each

This course covers safety, math, hand and power tools, blueprints, rigging, careers, ladders, scaffold, lifts, fall protection, materials and conditions, preparation, sealants and fillers, paints and coatings, and brushing and rolling paints and coatings.

ARB 121 and 122 Painting II (Year II)
4 Credits Each

Topics for this course include job planning, stains, coatings, water and chemical cleaning, spray painting, remedies, wall coverings, wood finishing, graphics and glazing and antiquing.

ARB 131 and 132 Painting III (Year III)
4 Credits Each

This course covers trade history, math and measurement, color and sheen, spraying special devices, wall covering failures and remedies, surface preparation, adhesives and installation, stenciling, gliding, lining and striping, texturing, caulks, roof coatings, finishing, waterproofing, and floor coatings.

ARC - APPRENTICE-RELATED Carpentry

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

ARC 111 and 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 and 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 and 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 and 142 Carpenter IV
4 Credits Each

This course presents advanced supervision, and laser instruments, and introduces the Uniform Building Code. In addition, this course covers water-and damp-proofing, finish stairs, supplement to ceiling systems, metal studs and drywall, interior finish, wall and floor specialties, and cabinetry.

ARD - APPRENTICE-RELATED DRYWALL

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

This course introduces 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 and 122 Drywall Applicator (Year Two)
4 Credits Each

This course presents thermal insulation and sound control, trim installation, safety, advanced trade math and layout. The course 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.

ARE - APPRENTICE-RELATED ELECTRICITY

ARE 111 and 112 Electrical I
4 Credits Each

This course presents general safety, tools of the electrical trade, contractor-owned tools, and trade history it 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 and 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 and 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. Also covered are 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 and 142 Electrical IV
4 Credits Each

This course explores tool and material take-offs, electrical safety, reading diagrams, journeyperson 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.

ARL - APPRENTICE-RELATED LABORER

ARL 104 Basic Measuring and Layout
0.5 Credit

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

ARL 105 Crane Setup, Rigging and Signaling
0.5 Credit

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

ARL 107 Scaffold Setup and Safety Certification
0.5 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
0.5 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
0.5 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
0.5 Credit

This course studies the basics of operation, safety features, daily inspections, maintenance schedules and attachments. Students 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
0.5 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
0.5 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 start-up 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.

ARM - APPRENTICE-RELATED MASONRY

ARM 111 and 112 Masonry I (Year I)
4 Credits Each

This course introduces students 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 and 122 Masonry II (Year II)
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 and 132 Masonry III (Year III)
4 Credits Each
Prerequisite: Successful completion of ARM 121/122 or permission of coordinator

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

ARP - APPRENTICE-RELATED PLUMBING

ARP 111 and 112 Plumber and Pipefitter (Year I)
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 and 122 Plumber and Pipefitter (Year II)
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 and 132 Plumber and Pipefitter (Year III)
4 Credits Each
Prerequisite: Successful completion of ARP 121/122 or permission of coordinator

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

ARP 141 and 142 Plumber and Pipefitter (Year IV)
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 complete this course.

ARP 151 and 152 Plumber and Pipefitter (Year V)
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 complete this course.

ARS - APPRENTICE-RELATED SHEET METAL

ARS 111 and 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, fas

teners, metals and sheet metal processes.

ARS 121 and 122 Sheet Metal II
4 Credits Each

This course introduces parallel line development, triangulation, radial line development and expands students' 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 and 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.

ARS 141 and 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 (Core)
3 Credits

This course is an introduction to the visual arts, including language, concepts, process and history.

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
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
3 Credits

This course further explores camera and lab operations, 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 hand-building techniques such as slab, coil, and pinch and throwing on the wheel. There is discussion of technical and aesthetic 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 also discussed. There are discussions of technical and aesthetics concerns. Offered at the Arvada Center for the Arts and Humanities only.

ART 158 Advanced hand-building
1 Credit
Prerequisite: Permission of instructor

This course is a comprehensive study of hand-building. Basic hand-building techniques, such as slab, coil and pinch; advanced hand-building techniques; working on a large scale; and combining techniques, including the wheel, are covered. There are discussions of technical and aesthetic 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 hand-building 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, hand-building, clay and glaze science, decorative techniques, and firing processes will be further developed.

ART 111 Art History I (Core)
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 212 Art History II (Core)
3 Credits

This course provides the knowledge base to understand the visual arts, especially as it relates to Western culture. It surveys the visual arts from the Renaissance through the Modern periods.

ART 216 Painting I
3 Credits

This course covers color, composition, materials and techniques of painting. Oil or acrylic may be used.

ART 217 Painting II
3 Credits

This course emphasizes experimentation with materials, composition and color.

ART 218 Painting III
3 Credits

This course provides continuing investigation of subject, color composition, and individual forms of expression.

ART 219 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
Prerequisite: ART 231

This course provides advanced study of subject development, form, color and theme.

ART 233 Watercolor III
3 Credits
Prerequisite: ART 231 and ART 232

This course provides continuing study of watercolor techniques with an emphasis on original compositions and experimentation with materials.

ART 234 Watercolor IV
3 Credits
Prerequisite: ART 233

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 hand-building and/or throwing

This course covers design and the decoration of pottery forms. You may work in one or more areas of throwing, extruding, hand-building, 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 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. The course covers finishing the work, glazing and firing. There are discussions of technical and aesthetic concerns, including 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 280 Jewelry and Metalsmithing
3 Credits

This course is designed for the student who has a desire to learn basic jewelry making. Techniques such as sawing, piercing, soldering, texturing, buffing, wire twisting, and simple bezel setting of stones, will be taught. Possible projects include, rings, bracelets, earrings, pins, necklaces and belt buckles.

ART 281 Jewelry and Metalsmithing II
3 Credits
Prerequisite:ART 280

A continuation of ART 280, introducing jewelry techniques such as shell forming, cold folding, forging, centrifugal casting, repousse and chasing and prong and channel setting of faceted stones. Emphasis on individual design will be stressed.

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.

ASL - AMERICAN SIGN LANGUAGE

ASL 111 American Sign Language I
5 Credits

This course examines communication systems used by deaf communities. Students will build receptive American Sign Language skills through vocabulary building and application of American Sign Language grammar. Students will also be familiar with current issues faced by the deaf community.

ASL 112 American Sign Language II
5 Credits
Prerequisite: ASL 111 or equivalent; permission of instructor

This course continues to examine communication systems used by deaf community. Students will develop expressive skills in American Sign Language. Emphasis will be placed on semantics and American Sign Language idioms. Students will explore deaf culture in more detail.

AST - ASTRONOMY

AST 101 Astronomy I (Core)
4 Credits
Co-requisite: AST 101 LAB

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 (Core)
4 Credits
Co-requisite: AST 102 LAB

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.

AUM - AUTOMOTIVE TECHNOLOGY

(In cooperation with and held at Warren Tech)

AUM 101 Basic Mechanics/Safety
1 Credit

This course introduces you to the Automotive Technology program held at the Warren Tech Auto Shop. It covers orientation, grading systems and shop safety. It is a required course if you are new to the Automotive Technology program, and is a prerequisite for any of the other courses within the program.

AUM 102 Brakes I
2 Credits
Prerequisite: AUM 101

This course covers basic terminology, theory of operation and service of drum and disc brakes, including lathe operation. Knowledge and skill improvements are measured by manipulative and written assessments.

AUM 103 Brakes II
3 Credits
Prerequisite: AUM 102

This course covers complete trouble-shooting and service of automotive braking systems, including drum and disc brakes, complete overhaul and ABS systems. Knowledge and skill improvements are measured by manipulative and written assessments.

AUM 104 Suspension I
2 Credits
Prerequisite: AUM 101

This course covers the theory and operation of the various automotive suspension systems. Identification, terminology and simple repairs are studied. Skills are evidenced by practical application and unit tests. Knowledge and skill improvements are measured by manipulative and written assessments.

AUM 105 Suspension II
3 Credits
Prerequisite: AUM 104

This course offers training on how 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 and 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. Students will be able to recover refrigerant and 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. Students 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 students 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. The 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 and 126

This course is intended to train students in the theory, diagnosis and repair of emission control systems. Knowledge of ignition and fuel systems is important prior to undertaking this course. Students will learn the interaction of different system failures that cause high tailpipe emissions. Students 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 students a basic knowledge of 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 students practical knowledge in diagnosis, disassembly and repair of carburetors. Knowledge and skill improvements are measured by manipulative and written assessments.

AUM 126 Fuel Injection
1 Credit
Prerequisite: AUM 125

This course covers the theory, terminology and operation of various fuel injection systems. GM-port fuel injection, and Bosch systems are covered. You will diagnose and test fuel injection systems. Knowledge and skill improvements are measured by manipulative and written assessments.

AUM 127 Basic Electrical I
6 Credits
Prerequisite: AUM 101

This course gives students 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 students an introduction to the various engine designs, operating principles and testing procedures. Students 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 students advanced knowledge in the procedures used to disassemble, measure, diagnose and reassemble an automotive engine. Working done on engines that belong to the school/college. Various cleaning procedures are covered. Measurement and proper disassembly and reassembly procedures are stressed. Knowledge and skill improvements are measured by manipulative and written assessments.

AUM 134 Auto Parts Specialist
7 Credits
Prerequisite: AUM 101, 102, 104, 109, 118, 127, and 131

This course gives students advanced knowledge in the procedures used to disassemble, measure, diagnose and reassemble an automotive engine. Working done on engines that belong to the school/college. Various cleaning procedures are covered. Measurement and proper disassembly and reassembly procedures are stressed. Knowledge and skill improvements are measured by manipulative and written assessments.

BIO - BIOLOGY

A grade of "C" or better is required in all prerequisite courses

BIO 105 Science of Biology (Core)
4 Credits
Co-requisite: BIO 105 Lab

This course is designed for non-science students. Students 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 (Core)
5 Credits
Co-requisite: BIO 111 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 (Core)
5 Credits
Co-requisite: BIO 112 Lab
Prerequisite: BIO 111

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

BIO 201 Human Anatomy/Physiology I
4 Credits
Co-requisite: BIO 201 Lab
Prerequisite: Recent coursework in biology or chemistry recommended

This course is an integrated study of the human body in which the histology, anatomy and physiology of each system is covered. The first part of this two-semester course includes molecular, cellular, and tissue levels of organization, followed by integumentary, skeletal, muscular and nervous systems and senses. Mandatory lab work includes microscope work, observations and dissection.

BIO 202 Human Anatomy and Physiology II
4 Credits

Co-requisite: BIO 202 Lab
Prerequisite: BIO 201

This course is an integrated study of the human body in which the histology, anatomy and physiology of each system is covered. The second part of this two- semester course includes study of the following systems: endocrine, cardiovascular with hematology, lymphatic, immune, respiratory, digestive, urinary with fluid and electrolyte balance, and reproductive. Mandatory lab work includes microscope work, observations and dissection.

BIO 205 Microbiology

4 Credits

Co-requisite: BIO 205 Lab
Prerequisite: BIO 111 or 201 or permission of instructor

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 students the opportunity to examine, culture and identify microbes and to conduct experiments on microorganisms.

BIO 211 Cellular Biology

4 Credits
Co-requisite: BIO 211 Lab
Prerequisite: BIO 111 or permission of instructor

This course introduces the major topics and techniques of modern cell biology. Lecture topics include chemistry of carbohydrates, lipids, proteins and nucleic acids; structure and function of prokaryotic and eukaryotic cells; protein synthesis; biochemistry of cellular respiration; enzymes; cell motility; and cell cycle. The 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
Co-requisite: BIO 212 LAB
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
Co-requisite: BIO 225 Lab
Prerequisites: BIO 105, 111 or permission of instructor

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
Co-requisite: BIO 226 Lab
Prerequisites: BIO 111, 112 or permission of instructor

This course studies both vascular and nonvascular plants. It emphasizes photosynthetic pathways, form and function, reproduction, physiology, genetics, diversity, evolution and ecology. This course also involves field experiences and may require some hiking.

BIO 228 Field Biology

2-3 Credits
Prerequisites: BIO 111, 112 or permission of instructor

This course involves in-depth field studies of natural environments within and outside of Colorado. The course varies from seven to ten 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.

BUS - 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. Students 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 surveys the operation of the American business system, including the fundamentals of the economy, careers and opportunities, marketing, management, production, governmental regulations, tools of business and social responsibilities.

BUS 205 Introduction to E-Business

3 Credits

This course is an overview of the use of information technology in businesses. Topics include using technology for customer relations management, accounting and financial applications, purchasing and production tools, sales and marketing functions, and human resources management. There will be discussion of the Internet, the World Wide Web and sophisticated multi-function software tools. Students will gain a heightened awareness of emerging technologies and trends in e-business.

BUS 210 E-Commerce

3 Credits

This course introduces the many aspects of the emerging field of e-commerce, the use of electronic media to exchange products and services. Topics covered include definitions; history and trends of e-commerce; social, legal and ethical implications; electronic retailing and advertising; service industry and business-to-business applications; electronic payment systems; and an introduction to economic and global issues in e-commerce.

BUS 215 Global E-Commerce

3 Credits

The World Wide Web levels the business playing field and eliminates geographic barriers. The Internet provides global business potential for even the smallest business. This course will teach how to approach and maximize this business opportunity. Topics include global e-marketing and promotion, import and export management, legal issues, and language and cultural issues.

BUS 216 Legal Environment of Business

3 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 groups with which a business manager must deal, including government, stockholders, competitors, employees and the public.

BUS 217 Business Communication and Report Writing

3 Credits

Prerequisite: Successful completion of a minimum of 3 credit hours of a 100-level English course or equivalent.

This course emphasizes effective business writing, including letters, memoranda, reports, application letters and resumes. The fundamentals of business communication and international communication are introduced. (This course is co-scheduled with ENG 217 and may be taken as BUS 217 or ENG 217, but not both.)

BUS 226 Business Statistics
3 Credits
Prerequisite: MAT 130 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.

BTE - BUSINESS TECHNOLOGY

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

BTE 100 Computer Keyboarding
2 Credits
Co-requisite: Computer Lab

This course is designed for students who have minimal or no keyboarding skills. The course introduces the touch method of keyboarding, as well as the basic operation and functions of the equipment. It emphasizes learning the alphanumeric keyboard, proper technique, and speed control.

BTE 102 Keyboarding Applications I
3 Credits
Co-requisite: Computer Lab
Prerequisite: BTE 100 or minimum typing speed of 20 wpm

This course is designed for students with minimal keyboarding skills. Letters, tables, memos, and manuscripts are introduced. Speed and accuracy is also emphasized.

BTE 108 Ten-Key by Touch (PC 10-Key Pad)
1.33 Credit
Co-requisite: Computer Lab

This course introduces touch control of the ten-key pad. This class emphasizes the development of speed and accuracy using proper technique.

BTE 111 Keyboarding Skillbuilding I
2 Credits
Co-requisite: Computer Lab
Prerequisite: BTE 102

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

BTE 112 Keyboarding Skillbuilding II
3 Credits
Co-requisite: Computer Lab
Prerequisite: BTE 111

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

BTE 125 Records Management
3 Credits

This course covers the basic filing rules, including classifying, indexing, coding, storing, and retrieving as applied to the alphabetic, chronological, subject, numeric, and geographic methods of filing. The student completes hands-on records management through the use of simulations, which include manual and computer software.

BTE 162 Electronic Filing
3 Credits
Co-requisite: Computer Lab
Prerequisite: CIS 118 and BTE 100 or equivalent

This course provides exercises and application problems that review and enhance the fundamental concepts of database management tasks. Students 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 166 Business Editing Skills
3 Credits
Co-requisite: BTE 102
Prerequisite: BTE 100 or equivalent

This course teaches language arts through the use of written communications. Emphasis is on grammar, spelling, formatting, proofreading, and editing of business documents. Work in verbal communications for the office is included. This course is designed to develop skills that will allow students to edit copy so that mailable copy can be produced.

BTE 201 Office Simulation I
4 Credits
Co-requisite: Computer Lab
Prerequisite: CIS 118 or permission from instructor

This course provides experience in the using in-basket exercises typical of those occurring in an office operation. It focuses on procedures and computer skills needed for successful performance in the workplace.

BTE 202 Office Simulations II
4 Credits
Co-requisite: Computer Lab
Prerequisite: BTE 202

This course provides the student the opportunity to demonstrate and perfect the computer skills, organizational skills, and communication skills required to secure employment and/or advancement in the workplace.

BTE 225 Administrative Office Management
3 Credits

This course presents new developments, technology, procedures, organization, and contemporary terminology used in effective office management. The course emphasizes decision making and application of administrative skills.

BTE 202 Office Simulation II
4 Credits
Co-requisite: Computer Lab
Prerequisites: BTE 112, 126 and 162

This course is a capstone course for the business technology associate of applied science degree. The course provides students with an opportunity to demonstrate and perfect the computer skills, organizational skills and communication skills required to secure employment and/or advancement.

BTE 297 Cooperative Education/Internship
3 Credits
Prerequisite: Permission of instructor

This course allows you to gain work experience from on-the-job training.

CAI - DEVELOPMENTAL EDUCATION

CAI 091 Adaptive Introduction to Computers
1 Credit

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

CAI 093 Adaptive Word Processing
3 Credits

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

CAI 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.

CAI 096 Adaptive Spreadsheets
3 Credits

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

CAR - CARPENTRY

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 used 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 used 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
Prerequisite: CAR 152 or FIW 100

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 shop carpenter and includes jig and patternmaking; stationary power tool maintenance and adjustment; machining of woods; and techniques unique to shops, cabinetmakers and mill workers.

CAR 213 Furniture Making
1-4 Credits

Prerequisite: CAR 152 or FIW 100

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 wallboard and the techniques of concealing joints and fasteners, construction methods, estimation and a variety of texture finishes.

CAR 217 Advanced Cabinetmaking
1-8 Credits
Prerequisite: CAR 152 or FIW 100

This course expands skills taught in CAR 209. The course includes a review of the types of joints, gluing and hardware used in cabinets. The course also familiarizes students with various types and designs of cabinets used in residential and 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 students 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 students 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 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 students entering or those already in the construction industry. 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 nontrade 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 students 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 students 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 and woodcarving are all appropriate projects.

CER - CONTINUING EDUCATION REFRESHER NURSING

CER 200 Registered Nurse Refresher Course
7 or 12 Credits
Co-requisite: CHP 210
Prerequisite: CPR Certification

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. Other opportunities for clinical experience may include home health, long-term care, rehabilitation and hospice.

CHE - CHEMISTRY

A grade of "C" or better is required in all prerequisite courses.

CHE 101 Introduction to Chemistry I (Core)
5 Credits
Co-requisites: CHE 101 LAB
Prerequisite: MAT 109

This course is for non-science majors, those in occupational and health programs or those lacking any chemistry background. The course 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 (Core)
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 (Core)
5 Credits
Co-requisite: CHE 111 LAB
Prerequisite: MAT 160

This course reviews basic chemistry: matter, chemical formulas, reactions and equations and stoichiometry. Development of atomic theory is discussed, culminating in the use of quantum numbers to determine electron configuration of atoms and the relationship of electron configuration to chemical properties of elements. Chemical bonding is covered, including valence bond theory and molecular orbital theory. The course concludes with gases, liquids and solids.

CHE 112 General College Chemistry II (Core)
5 Credits
Co-requisite: CHE 111
Prerequisites: MAT 160, CHE 111

General College Chemistry II emphasizes calculations and problem solving. Solutions and

colligative properties are studied. Chemical systems introduce dynamic equilibrium. Acid/base systems continue this topic, leading to strong and weak acids, pH, buffers and slightly soluble salts. Kinetics introduces a unit on non-equilibrium systems. Study of the three laws of thermodynamics follows, emphasizing spontaneity of reactions. Voltaic and electrolytic cells are covered. The course concludes with a short study of nuclear chemistry.

CHE 211 Organic Chemistry I
5 Credits
Co-requisite: CHE 211 Lab
Prerequisites: CHE 111 and 112

This course covers structure and reactions of aliphatic hydrocarbons and selected functional group families. Nomenclature of organic compounds, stereochemistry, and reaction mechanisms are also covered. Laboratory demonstrates the above concepts and techniques.

CHE 212 Organic Chemistry II
5 Credits
Co-requisite: CHE 212
Prerequisite: CHE 211

This course covers structure, reactions and reaction mechanisms of aromatic compounds and continuation of functional group families from CHE 211. The chemistry of heterocycles and biologically related compounds is introduced if time permits. Lab demonstrates the above concepts and lab techniques.

CHP - CONTINUING EDUCATION FOR HEALTH PROFESSIONALS

CHP 106 Case Management
0.5 Credit

This is a basic introductory course that explores the concept of case management in the hospital, home care, insurance companies, and private sector. The course includes negotiating contracts, developing care plans, reporting and conflict negotiating.

CHP 107 Camp Health Care
0.5 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 health care. Social services regulations, medications, protocols, first aid equipment, immunizations, communicable diseases, care of chronic health conditions and the role of the health care provider with camp staff will be discussed.

CHP 120 Health Care Finance Matters
1 Credit

The emphasis of this course is placed on the relationship between the health care provider and the charges submitted for services provided, understanding how to interpret bills, dealing with billing and collection problems, billing terms, insurance terms, and the like. An examination of the methods and procedures dealing with hospital billing, related services, and the health care industry and its structure are also explored.

CHP 150 Computing in Comfort
0.5 Credit

Computing in Comfort is a series of Awareness Through Movement® lessons to help the student learn about the functioning of the body to achieve relaxed, efficient, strain-free, safe and comfortable ways of using the computer. Discussions includes choosing equipment that maintains and enhances proper body use, and how to set up a workstation to improve comfort and productivity.

CHP 165 Introspective Ethics
1 Credit

This course provides a philosophical approach to the practice of ethics in the healthcare setting. An in-depth look at one's own internal development of personal daily decision making process regarding ethical choices is provided.

CHP 185 Basic Life Support (BLS) Provider C
0.5 Credit

This course provides the American Heart Association's basic life support healthcare provider C certification course. The class covers the following material: adult, child and infant CPR, foreign body airway obstruction, and rescue breathing. Certification is good for two years.

CHP 201 Ethics in Health Care
0.5 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.

CHP 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.

CHP 209 Spanish for Health Care-Level I
1 Credit

This course covers basic anatomy and medical terminology. The course enables students to speak with patients and encourage needed information. This course is adapted to your needs.

CHP 210 Physical Assessment of theAdult
2 Credits

Participants 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 class. Proper use of equipment, such as the otoscope, tuning fork, ophthalmoscope and reflex hammer are also covered.

CHP 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.

CHP 218 Supervision and Delegation
0.5 Credit

This course covers the rules delegation of nursing tasks, including documentation and supervision issues.

CHP 219 Spouse and Child Abuse
0.5 Credit

This course will explore the dynamics of spousal battering and child abuse: recognition, assessment, intervention, reporting; as well as legal requirements concerning reporting.

CHP 220 Advanced Ethics and Law
0.5 Credit

This course explores issues on the cutting edge of ethics and law, such as advanced treatment directives, technology and transplant of fetal issues.

CHP 225 Introduction to Home Health Nursing
0.5 Credit

This course introduces home health nursing from the standpoint of services provided by for-profit and nonprofit 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.

CHP 226 Intravenous Therapy
1 Credit

This course covers basic venipuncture techniques, factors involved in vein selection, psychological implications, and nursing measures.

CHP 227 Communication Skills
0.5 Credit

Reacting to the demands of one's environment, stressors, and frustrations can take a toll on self-worth and interactions with others. This class will assist the student to acquire essential skills in communication, conflict resolution, negotiation, and team building.

CHP 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.

CHP 232 Caring for the Caregiver
0.5 Credit

This course explores the daily stresses of caregivers and provides methods to relieve stress and care for ourselves. The course also examines a variety of methods to assist in self-healing.

CHP 235 Nutritional Therapy and Health
0.5 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.

CHP 238 Advanced Electrocardiogram Interpretation
1 Credit

This course presents the fundamental concepts of 12-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.

CHP 239 Intravenous Certification
5 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. Designed for the licensed practical nurse IV certification, may be taken as an IV refresher for registered nurses.

CHP 243 Teaching in Community/Home Health Nursing
0.5 Credit
Prerequisites: CHP 225 and 264 are recommended

This course presents teaching theories, assessment of client and 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.x

CHP 245 Bridging to Hospice Nursing
0.5 Credit

This course introduces the philosophy and principles of hospice support for the terminally ill, their family and friends. The course 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.

CHP 247 Phlebotomy Certification
0.5 Credit

This comprehensive phlebotomy class 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.

CHP 248 Conflict Resolution in the Workplace
0.5 Credit

Conflicts occur in all relationships at one time or another. They can be especially unpleasant in a work setting, when power issues are most prevalent. Effective conflict resolution results in productive solutions as well as an increase in professional and personal self-esteem and reduction in stress. Students will, learn and practice effective skills and techniques to resolve workplace conflicts.

CHP 250 Home Health Nursing Skills Part I
0.5 Credit

This course is for nurses entering the home health field. The course presents the skills and functions that are necessary for quality care in home health nursing, including medications, laboratory work, emergencies and common health problems seen in the home.

CHP 255 Spanish for Health Care—Level II
1 Credit
Prerequisite:CHP 209

This language course is conversational. Verb tenses are reviewed, along with medical terminology. Students are given an opportunity to speak with native speakers one-on-one for increased proficiency.

CHP 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. The course 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.

CHP 259 ACLS Recertification
0.5 Credit

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

CHP 260 Bereavement Counseling
0.5 Credit

This course presents current principles of bereavement counseling, including identification of the normal grieving process and appropriate interventions. The course covers the use of feelings and experiences in assisting patients and/or families who are bereaved.

CHP 264 Documentation Skills in Home Health Nursing
0.5 Credit
Prerequisite:CHP 225 is recommended

This course is designed to assist nurses to develop problem lists, nursing care plans, document history and physical exams, write a plan of treatment, work with diagnostic codes, develop visit parameters and follow Medicare and JCAHO guidelines for determining eligibility and skilled services.

CHP 266 Physical Assessment in Home Health
1 Credit
Prerequisite:Medical Professional

Participants will learn 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.

CHP 271 HEP/HIV Update
0.5 Credit

This course covers the etiology, epidemiology and treatment modalities of Acquired Immune Deficiency Syndrome. The psychosocial issues affecting the individual with HIV or AIDS and issues concerning the caregiver are also covered.

CHP 281 Home Health Nursing Skills Part II
0.5 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.

CHP 282 System Issues
0.5 Credit

This course explores some of the special legal risks for home health care providers and risk management techniques. Students study the differences in home health care today as well as look at legal issues.

CHP 283 Psychoneuroimmunology
0.5 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.

CHP 284 Home Health 2000
0.5 Credit

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. The course 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.

CHP 285 Stress Management
0.5 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. Students learn how to relax quickly, improve self-image, improve concentration and control worry.

CHP 289 Career Alternatives Within Nursing
0.5 Credit

This one-day workshop explores numerous areas in which nurses work and how to pursue jobs in these areas.

CIS - COMPUTER INFORMATION SYSTEMS

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

CIS Computer Lab
0.33-1 Credit

CIS 091 Learning Windows
1 Credit

Corequisite: Computer Lab

This course is designed to provide foundational skills in Windows for employment and personal development.

CIS 092 Learning E-mail and the Internet
1 Credit

Corequisite: Computer Lab

This course is designed to provide foundational skills in e-mail and the Internet for employment and personal development.

CIS 094 Learning Word
1 Credit

Corequisite: Computer Lab

This course is designed to provide foundational skills in word processing for employment and personal development.

CIS 095 Computers and You
3 Credits
Co-requisite: Computer Lab

This course familiarizes you with the computer and its application in today's home. You work with the computer using pre-written programs and learn the basics in the logic used in programming a computer. Applications covered include money and resource management, consumer affairs and the use of computers for entertainment.

CIS 098 Learning Excel
1 Credit

Corequisite: Computer Lab

This course is designed to provide foundational skills in spreadsheets for employment and personal development.

CIS 115 Introduction to Computer Information Systems
3 Credits
Co-requisite: Computer Lab

This is an overview of the needs for and roles of computer information systems. Emphasis is on computer requirements in organizations, history, hardware functions, programming, systems development, and computer operations. Hands-on experience with applications and programming will be included.

CIS 116 Logic and Program Design
3 Credits
Prerequisite: CIS 115 or equivalent

This course is an introduction to the development of computer program design using the concepts of structured programming and logic. Topics include pseudo-code, flowcharts, structure charts, and other current structured-design tools.

CIS 118 Introduction to PC Applications
3 Credits
Co-requisite: Computer Lab

This course introduces computer concepts and components, as well as coverage of application suite software and the Internet. Included are descriptions of and hands-on experiences with word processors, spreadsheets, databases, operating environments and other common PC applications packages.

CIS 119 Introduction to Programming
3 Credits
Co-requisite: Computer Lab

This course is a general introduction to computer programming. The course emphasizes the design and implementation of structured and logically correct programs with good documentation. The course focuses on basic programming concepts, including numbering systems, control structures, modularization and data processing. A structured programming language will be used to implement the student's program designs.

CIS 120 Introduction to PC Operating Systems: DOS
1 Credit
Co-requisite: Computer Lab

This course introduces concepts, terminology, and skills in the use of an operating system. The emphasis will be on understanding and using an operating system in a practical way to complement the student's use of application software on the microcomputer.

CIS 121 Advanced PC Operating Systems: DOS
1 Credit
Co-requisite: Computer Lab
Prerequisite: CIS 120

This course builds on skills from CIS 120. Topics include advanced features of the microcomputer operating system commands and application of these features to create an efficient environment for microcomputer operations covered.

CIS 122 Introduction to Windows: Win 98
1 Credit
Co-requisite: Computer Lab

This course introduces the functions and capabilities of Microsoft Windows. Topics include using, configuring, and modifying the operating environment. The student who has taken CIS 118, Introduction to PC Applications, should not take this course.

CIS 123 Advanced Windows: Win 98
1 Credit
Co-requisite: Computer Lab
Prerequisite: CIS 122 or equivalent experience or permission of the instructor.

This course, a continuation of CIS 122, explores advanced power-user topics.

CIS 124 Introduction to the Macintosh Computer
3 Credits
Co-requisite: Computer Lab

This course introduces the use of the Macintosh computer. You are introduced to various Macintosh configurations as well as hands-on usage of the system and its applications.

CIS 130 Introduction to PC Word Processing: Word
1 Credit
Co-requisite: Computer Lab
Prerequisite: CIS 122 or a working knowledge of Windows

This course introduces the features of word processing software. The skills needed to create, edit, format, and print documents are covered. Topics include character, paragraph and page formats, and the use of spelling checkers and the thesaurus feature. The student who has taken CIS 118, Introduction to PC Applications, should not take this course.

CIS 131 Intermediate PC Word Processing: Word
1 Credit
Co-requisite: Computer Lab
Prerequisite: CIS 130

This course continues to build on the skills introduced in CIS 130. Practice emphasizes hands-on exercise skills such as hyphenation, column format layout, document design, mail merge, tables, forms, and graphics.

CIS 132 Advanced PC Word Processing: Word
1 Credit
Co-requisite: Computer Lab
Prerequisite: CIS 131

This course covers advanced word processing skills. Topics include outlines, style sheets, macros, and large document formatting.

CIS 135 Complete PC Word Processing: Word
3 Credits
Co-requisite: Computer Lab
Prerequisite: CIS 122 or a working knowledge of Windows

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. Students practice hands-on exercise skills such as hyphenation, columns, format layout, document design, and graphics. This course is the equivalent of CIS 130, CIS 131, and CIS 132.

CIS 139 Advanced Internet Research
1 Credit
Co-requisite: Computer Lab
Prerequisite: CWB 100 or equivalent experience or permission of the instructor.

Advanced Internet Research introduces the student to conducting information research via the World Wide Web and Telnet through the use of appropriate online resources and advanced searching techniques. Emphasis is placed on using online library catalogs, periodical indexes, search engines and directories, subscription information databases, and subject- specific information sites.

CIS 140 Introduction to PC Database: Access
1 Credit
Co-requisite: Computer Lab
Prerequisite: CIS 122 or a working knowledge of Windows

This course introduces the functions of databases. It includes skills such as file creation, searches, sorts, editing, and indexing. The student who has taken CIS 118, Introduction to PC Applications, should not take this course.

CIS 141 Intermediate PC Database: Access
1 Credit
Co-requisite: Computer Lab
Prerequisite: CIS 140

This course continues to build on the skills introduced in CIS 140. Students practice hands-on exercise skills such as report writing and the creation of custom forms.

CIS 142 Advanced PC Database: Access
1 Credit
Co-requisite: Computer Lab
Prerequisite: CIS 141

This course continues to build on database skills learned in the previous course. Topics include creating a user interface, database, problem solving, and programming using macros to create automated user interfaces. Visual Basic is not covered.

CIS 145 Complete PC Database: Access
3 Credits
Co-requisite: Computer Lab
Prerequisite: CIS 122 or a working knowledge of Windows

This course explores a complete array of database skills. Topics include database design, table operations, searches, sorts, edits, queries, forms, and reports. Interfacing with other packages and creating a user interface are covered. This course is the equivalent of CIS 140, CIS 141, and CIS 142.

CIS 150 Introduction to PC Spreadsheet: Excel
1 Credit
Co-requisite: Computer Lab
Prerequisite: CIS 122 or a working knowledge of Windows

This course introduces the student to concepts and applications of an electronic spreadsheet. Topics include calculations, built-in functions, spreadsheet design, and presentation graphics. The student who has taken CIS 118, Introduction to PC Applications, should not take this course.

CIS 151 Intermediate PC Spreadsheet: Excel
1 Credit
Co-requisite: Computer Lab
Prerequisite: CIS 150

This course continues to build on spreadsheet skills introduced in CIS 150. Topics include design and report writing, filters, sorts, and special calculations.

CIS 152 Advanced PC Spreadsheet: Excel
1 Credit
Co-requisite: Computer Lab
Prerequisite: CIS 151

This course continues to explore spreadsheet topics introduced in previous courses. Topics include development and execution of macros to automate the spreadsheet, development of menu-driven macros, "what if" tables, advanced functions and commands for using a statistical database, and formatting.

CIS 155 Complete PC Spreadsheet: Excel
3 Credits
Co-requisite: Computer Lab
Prerequisite: CIS 122 or a working knowledge of Windows

This course covers the complete array of spreadsheet-user skills. Topics include spreadsheet design, formatting, formulas, functions, charts, databases, macros, statistical and "what-if" analysis, and macros. This course is the equivalent of CIS 150, CIS 151, and CIS 152.

CIS 165 Complete Presentation Graphics: PowerPoint
3 Credits
Co-requisite: Computer Lab
Prerequisite: CIS 122 or a working knowledge of Windows

This course focuses on the development of presentation graphics including graphs, charts, illustrations and diagrams. Emphasis is on effective communication. Automated presentation with sound, video and animation will also be covered.

CIS 175 Complete Desktop Publishing: MS Publisher
3 Credits
Co-requisite: Computer Lab
Prerequisite: CIS 122 or a working knowledge of Windows

This hands-on course introduces the concepts and techniques of desktop publishing. You learn how to merge text and graphics files to create flyers, brochures and newsletters.

CIS 200 Automated Project Management: MS Publisher
3 Credits
Co-requisite: Computer Lab

Provides an in-depth exploration of project management techniques. This course emphasizes project management strategies, goal-setting, communication, tracking and reporting, and critical thinking. Discussion and real-world projects will be used to explore the creation of task lists, resource assignment and leveling, use of milestones, Critical Path Methodology, PERT, project tracking, and communication.

CIS 218 Advanced PC Applications
3 Credits
Co-requisite: Computer Lab
Prerequisite: CIS 118

This course covers the advanced capabilities of a microcomputer applications suite.

CIS 220 UNIX
3 Credits
Co-requisite: Computer Lab
Prerequisite: One programming language

This course covers the structure and fundamentals of the UNIX operating system. Topics covered include the files system and file processing, various utility programs, and shell, multi-user operation, memory management, text processing, and communications.

CIS 221 Advanced UNIX
3 Credits
Co-requisite: Computer Lab
Prerequisite: CIS 220

This course continues building upon skills and commands covered in CIS 220. The course emphasizes scripting topics, including utilizing pipelines, filters, grep, awk, sed, and text processing.

CIS 222 UNIX Systems Administrator
3 Credits
Co-requisite: Computer Lab
Prerequisite: CIS 220

This course covers the fundamental 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 240 Database Management Systems
3 Credits
Co-requisite: Computer Lab
Prerequisites: CIS 145 or equivalent experience

This course introduces the principles of database storage. Topic include relational, hierarchical, and network database structures, query commands, and command level programs. Students will examine current issues including model selection, database design, usage, implementation, and maintenance.

CIS 250 AS/400 Operations and OS/400 Commands
3 Credits
Co-requisite: Computer Lab
Prerequisites: Permission of instructor or AS/400 experience or equivalent knowledge

This course is an introduction to operation and use of IBM iSeries AS/400 and the OS/400 operating system. This course covers OS/400 architecture, system security, the user interface, job management, message handling, printing functions, device configuration, disaster recovery, strategies, installing and maintaining OS/400 software, applying software "fixes", PC client access administration, and basic problem-determination techniques.

CIS 251 AS/400 DB2 Universal DB with SQL
3 Credits
Co-requisite: Computer Lab
Prerequisites: Permission of instructor or AS/400 experience or equivalent knowledge

This course concentrates on learning database administration skills with an emphasis on real-world relational database technology with IBM's DB2 UDB on iSeries and AS/400 or iSeries and AS/400 systems. More data is stored on AS/400 and iSeries 400 using IBM's DB2 database than in any other database system from any other vendor in the world. Learn how to use SQL/400 to define database tables and views, and to query the database. Also, learn how to access the AS/400 or iSeries 400 DB2 database tables and views from PC's using "client/server" software, such as ODBC using Java and JDBC.

CIS 252 AS/400 Java for IBM iSeries
3 Credits
Co-requisite: Computer Lab
Prerequisites: Permission of instructor or AS/400 experience or equivalent knowledge

Learn how to develop, compile, test and deploy Java servers, according to the latest Java benchmarks. Use client-side Java "servlets" that run on the AS/400 or iSeries, under IBM's WebShare Application Server (and HTTP server).

CIS 253 AS/400 Lotus Notes Domino Administration
3 Credits
Co-requisite: Computer Lab
Prerequisite: Permission of instructor or AS/400 experience or equivalent knowledge

Learn the skills needed by a system administrator running Domino on the IBM iSeries 400 or AS/400 systems. IBM AS/400 and iSeries are the world's best and most reliable Lotus Notes Domino server platforms. Learn the skills needed to perform routine Notes Domino administration tasks, using Lotus Notes client software on a PC, or via any Web browser, to configure and control a Notes Domino server running on iSeries 400.

CIS 254 AS/400 E-Business Development for WebShare Application Server
3 Credits
Co-requisite: Computer Lab
Prerequisites: Permission of instructor or AS/400 experience or equivalent knowledge

Learn how to develop Java servlets that can be run under IBM's WebShare Application Server, on IBM iSeries 400 or AS/400 servers, the world's most secure and reliable HTTP servers, under OS/400. Learn how to use IBM's Developer Tools, such as WebShare Developer Studio, and IBM's VisualAge for Java, to develop, test, and "debug" your Java servlets before deploying them to a "live" IBM AS/400 server for use by users anywhere on the Internet. Learn how to include data from IBM iSeries 400 DB2 UDB databases in your Web pages using Java servlet technology to create dynamic Web page content.

CIS 255 AS/400 ILE RPG IV Programming
3 Credits
Co-requisite: Computer Lab
Prerequisites: Permission of instructor or AS/400 experience or equivalent knowledge

This course covers how to develop and maintain OS/400 applications using IBM's ILE RPG IV, the latest version of the RPG language for IBM iSeries and AS/400 platforms.

CIS 270 Systems Analysis And Design
5 Credits
Prerequisite: Students should have completed the majority of their area of emphasis requirements before enrolling in this class.

This course introduces the student to the materials, techniques, procedures and human interrelations involved in developing computer information systems. 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, implementation and evaluation. (Spring only)

CIS 280 Project Development
3 Credits
Co-requisite: Computer Lab

Prerequisite: Students should have completed the majority of their area of emphasis requirements before enrolling in this class.

The purpose of this course is to allow students to complete computerized projects, demonstrating their software and programming skills. Projects will be provided by industry and vary widely as to the time and skill required to successfully complete. Each student's specific outcomes will depend on the the skills that they bring to the course, the type of project that they participate in, and the roll they play on the project team.

1 Credit
Prerequisite:8 Credits of Computer Technologies coursework.

This course explores the social, ethical and legal implications related to the widespread use of computers in our society. Topics include the codes of behavior expected of the computer professional and the broader issues that affect society as a whole. These issues will be explored through readings, class discussions, Internet research, guest lecturers and case studies. College-level writing is expected.

CIS 288 Computer Information Center Usage
0.5.-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 is determined by the instructor after the student's educational goals have been assessed. In no case is the course to be less than _ 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.

CNT - COMPUTER NETWORKING

All CNT courses require a concurrent enrollment in computer Lab sections.

CNT Computer Lab
1 Credit

CNT 122 Networking Hardware I: A+
4 Credits
Co-requisite: Network Hardware II: A+

This course prepares the student for certification tests used by the Computing Technology Industry Association. Red Rocks Community College has no control over changes made by this agency to its A+ Certification Program. This course includes repair, upgrading, installation and maintenance of computers and software.

CNT 123 Networking Hardware II: A+
4 Credits

Co-requisite: Network Hardware I: A+

This course prepares the student for certification tests used by the Computing Technology Industry Association. Red Rocks Community College has no control over changes made by this agency to its A+ Certification Program. This course includes repair, upgrading, installation and maintenance of computers and software.

CNT 124 Networking Hardware I: Net+

4 Credits
Co-requisite: Computer Lab

Net Plus is a vendor-neutral Internet certification program that covers a broad range of knowledge regarding Internet connectivity, security and Web technical development. The class is designed to give skills necessary to be an INternet technician professional. Students will gain skills necessary for implementing and maintaining Internet, Intranet and Extranet infrastructure and services as well as development of relation applications.

CNT 125 Network Hardware II: Net A+

4 Credits
Co-requisite: Computer Lab
Prerequisite: CNT 210

Net Plus is a vendor-neutral Internet certification program that covers a broad range of

knowledge regarding Internet connectivity, security and Web technical development. The class is designed to give skills necessary to be an Internet technician professional. Students will gain skills necessary for implementing and maintaining Internet, Intranet and Extranet infrastructure and services as well as development of relation applications.

CNT 200 Introduction to Networking

3 Credits
Co-requisite: Computer Lab

This course introduces the student to the underlying concepts of data communications, telecommunications and networking. It focuses on the terminology and technologies in current networking environments and is meant to provide a general overview of the field of networking as a basis for continued study in the field.

CNT 201 Local Area Networks

3 Credits
Co-requisite: Computer Lab
Prerequisite: CNT 200

This course builds upon networking fundamentals. It provides a detailed overview of LANs (Local Area Networks), the client/server model, and common networking systems.

CNT 237 Administering a Microsoft SQL Server 2000 Database

4 Credits
Co-requisite: Computer Lab
Prerequisite: CNT 234

Proficient using the Windows 2000 Advanced Server. Gene4ral knowledge of computer hardware and software components, including memory, hard disk, central processing units, and operating systems. General knowledge of networking concepts, including network operating system and local area network (LAN).

CNT 202 Wide Area Networks

3 Credits
Co-requisite: Computer Lab
Prerequisite: CNT 200

This course covers networking topics related to Wide Area Networks (WANs). These topics include the telecommunications components and concepts used to build WANs, as well as the protocols used to transport voice and data over a wide area. Topics include point-to-point services, integrated digital network, frame relay, cell relay, ATM, SMDS and SONET.

CNT 203 TCP/IP and Networking Architectures

3 Credits
Co-requisite: Computer Lab
Prerequisite: CNT 200

This course outlines four important networking architectures in corporate environments today: TCP/IP, SNA, AppleTalk, and DNA. The major components and functions of each of these architectures are discussed, as well as methods used to connect different architectures. This course provides students with concepts that are important to the field of systems integration, as well as a conceptual basis for understanding network architectures.

CNT 204 Introduction to Internet Technologies

3 Credits
Co-requisite: Computer Lab
Prerequisite: CNT 200

This course outlines the important Internet technologies in use today. The major components and functions of each of these technologies are discussed, as well as methods used to connect different technologies. This course provides the students with concepts that are important to the field of systems integration with the Internet, as well as a conceptual basis for understanding Internet technologies.

CNT 205 Internetworking

3 Credits
Co-requisite: Computer Lab
Prerequisite: CNT 200

This is an advanced course intended for networking professionals and students who already grasp the general concepts of data communications and networking, but would like a more detailed understanding of internetworking. Techniques and components for managing network growth and connecting disparate network architectures will be presented and solutions to internetworking problems will be developed.

CNT 206 Processes and Protocols

3 Credits
Co-requisite: Computer Lab
Prerequisite: CNT 200

This is an advanced course intended for networking professionals and students who already grasp the general concepts of data communications and networking, but would like a more detailed understanding of the processing and protocols of internetworking. Techniques and components of processing and protocols for managing networks and connecting disparate network architectures will be presented and solutions to processing and protocol problems will be developed.

CNT 207 Network Analysis and Design

3 Credits
Co-requisite: Computer Lab
Prerequisite: CNT 200

This is an advanced course intended for networking professionals and students who grasp the basic concepts of networking but would like to understand methods used to analyze, design, and manage LANs and point-to-point networks. Exercises are geared toward learning techniques used to design and analyze networks.

CNT 231 MS Windows 2000 Network and Operating Essentials

3 Credits
Co-requisite: Computer Lab
Prerequisite: CIS 115 or equivalent knowledge or experience

This course provides students who are new to Microsoft Windows 2000 with the knowledge necessary to understand and identify the tasks involved in supporting Windows 2000 networks. This is an introductory course designed to provide an overview of networking concepts and how they are implemented in Windows 2000. It also provides students with the knowledge and skills required for course CNT 232, Implementing Windows 2000 Professional and Server.

CNT 232 Implementing Windows 2000 Professional and Server

3 Credits
Co-requisite: Computer Lab
Prerequisite: CNT 231

This course provides students with the knowledge and skills necessary to install and configure Microsoft Windows 2000 Professional on stand-alone and client computers that are part of a work group or domain. In addition, this course provides the skills and knowledge necessary to install and configure Windows 2000 Server to create file print, Web, and Terminal servers. It also covers the prerequisite for course CNT 233, Implementing a Windows 2000 Network Infrastructure.

CNT 233 Implementing a Windows 2000 Network Infrastructure

3 Credits
Prerequisite: CNT 232

This course is for support professionals who are new to Microsoft Windows 2000 and will be responsible for installing, configuring, managing, and supporting a network infrastructure that uses the Microsoft Windows 2000 Server products. It also provides stu-

dents with the knowledge and skills required for course CNT 234, Implementing and Administering Windows 2000 Directory Services.

CNT 234 Implementing and Administering Windows 2000 Directory Services
3 Credits
Co-requisite: Computer Lab
Prerequisite: CNT 233

This course is designed to provide students with the knowledge and skills necessary to install, configure and administer Microsoft Windows 2000 Active DirectoryTM directory services. The course also focuses on implementing Group Policy and performing the Group Policy - related tasks that are required to centrally manage users and computers. It also provides students with the knowledge and skills required for course CNT 241, Designing a Windows 2000 Directory Service Infrastructure.

CNT 235 Managing a Microsoft Windows 2000 Network Environment
3 Credits

Co-requisite: Computer Lab

Prerequisite: CNT 234

This course provides the knowledge required to implement, manage and troubleshoot existing network and server environments based on the Microsoft Windows 2000 platform. These skills are generally required in medium to large size organizations that maintain 200 to 26,000 user desktops and servers, spanning 2 to 100 physical locations via Large Area Networks (LANs) and the Internet or Intranets.

CNT 236 Implementing and Managing MS Exchange 2000
3 Credits

Co-requisite: Computer Lab
Prerequisite: CNT 234

This course is designed to teach students the knowledge and skills necessary to install, configure, and administer Microsoft Exchange 2000. Students will learn to use Exchange 2000 in medium to very large computing environments that typically have multiple physical locations, mixed client connection protocols, and internet messaging connectivity.

CNT 241 Designing a Windows 2000 Directory Service Infrastructure
3 Credits
Co-requisite: Computer Lab
Prerequisite: CNT 234

This course provides students with the knowledge and skills necessary to design a Windows 2000 directory services infrastructure in an enterprise network. Strategies are presented to assist the student in identifying the information technology needs of an organization, and designing a Windows 2000 Active DirectoryTM structure that meets those needs.

CNT 242 Designing a Windows 2000 Secure Network
3 Credits

Co-requisite: Computer Lab
Prerequisite: CNT 241

This course provides students with the knowledge and skills necessary to design a security framework for small, medium, and enterprise networks by using Microsoft Windows 2000 technologies. Students will learn to secure access to Local Network Users, Remote Users and Remote Offices, Partners, and to secure access between private and public networks.

CNT 243 Designing a Windows 2000 Network Infrastructure
3 Credits

Co-requisite: Computer Lab
Prerequisite: CNT 242

This course provides students with the information and skills needed to create a networking services infrastructure design that supports the required network applications.

CNT 260 CISCO Network Associate I
5 Credits
Co-requisite: Computer Lab
Prerequisite: CIS 115 and CWB 100 or equivalent knowledge or experience

The first in a series of four semesters, this course focuses on Networking fundamentals including the OSI model and industry standards. network topologies, IP addressing (including subnet masks), and basic network design. Upon successful completion of all four semester, students will be qualified to take the Cisco Certified Network Associate (CCNA) exam.

CNT 261 CISCO Network Associate II:
5 Credits
Co-requisite: Computer Lab
Prerequisite: CNT 260

The second in a series of four semesters, this course focuses on router theory and router technologies, including beginning router configurations, routed and routing protocols, and an introduction to LAN (local area network) switching. Upon successful completion of all four semesters, students will be qualified to take the Cisco Certified Network Associate (CCNA) exam.

CNT 262 CISCO Network Associate III:
5 Credits
Co-requisite: Computer Lab
Prerequisite: CNT 261

The third in a series of four semesters, this course focuses on advanced routing and switching including advanced router configurations, LAN switching, network management, and advanced network design. Upon successful completion of all four semesters, students will be qualified to take the Cisco Certified Network Associate (CCNA) exam.

CNT 263 CISCO Network Associate IV
3 Credits
Co-requisite: Computer Lab
Prerequisite: CNT 262

The fourth in a series of four semesters, this course focuses on project-based learning including advanced network design projects and advanced network management projects. Upon successful completion of all four semesters, students will be qualified to take the Cisco Certified Network Associate (CCNA) exam.

COE - COOPERATIVE EDUCATION

COE 296 The Job Search Process
Cooperative Education Co-requisite

1 Credit

Either of these courses provides the on-campus co-requisite 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 co-requisite requirement is designed to assist students in developing job-oriented learning objectives and to prepare students with skills essential for job acquisition, retention and promotion.

COE 297 Cooperative Education/ Internship
3 Credits
Co-requisite: COE 296 (or COM 115)
Prerequisite: Permission of Office Student Employment Services

This course is a credited program, which provides opportunities for students 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.

CON - CONSTRUCTION TECHNOLOGY

(See Air Conditioning, Heating, Refrigeration and Ventilation; Carpentry; Electricity, Facility Management; Fine Woodworking and Plumbing)

CON 100 Computers for Construction PC
2-12 Credits

This course introduces the use of computers in the construction trades. The emphasis is in using computers for estimating construction projects, communications, research, and drawing and designing buildings with CAD programs.

CON 105 Blueprint Reading
4 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. Intra-trade 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.

CRJ - CRIMINAL JUSTICE

Additional Criminal Justice courses are offered during the summer semester. 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 students 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 104 Firearms
2 Credits
Prerequisite: This course is part of the Law Enforcement Training Academy. Admission to the academy will be dependent upon special screening as mandated by state law and CRJ Department policy.

This course provides students with the knowledge, skills and abilities to safely use police firearms. Students will demonstrate skills by firing weapons on a firing range in accordance with Colorado 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, including the legislature, the police, the prosecutor, the public defender, the courts and corrections. The course also includes an analysis of the roles and problems of the criminal justice system in a democratic society, with an emphasis on inter-component relations and checks and balances.

CRJ 111 Substantive Criminal Law
3 Credits
Prerequisite:CRJ 110 or permission of instructor

This course examines legal definitions of crime, purposes and functions of the law, historical foundations and the limits of the criminal law.

CRJ 112 Procedural Criminal Law
3 Credits
Prerequisite:CRJ 110

This course covers constitutional and procedural considerations affecting arrest, search and seizure, post-conviction treatment, origin, development, philosophy, and constitutional basis of evidence. Degrees of evidence and rules governing admissibility; judicial decisions interpreting individual rights nd an analysis of case studies from arrest through final approval.

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 then 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 with an analysis of the major judicial decision-makers (e.g. prosecutors, defense attorneys, judges) and the discretionary aspects of adjudication.

CRJ 145 Correctional Process
3 Credits
Prerequisite:CRJ 110

This course covers the post-conviction corrections process; the development of a correctional philosophy, theory and practice; a description of institutional operation, programming and management; and community-based corrections, probation and parole.

CRJ 146 Community-Based Corrections
3 Credits
Prerequisites: 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 corrections 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
Prerequisites: 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 examines the treatment for both the victim and the perpetrator of domestic violence as well as children of violent homes. The course covers Colorado law pertaining to domestic violence and changes in society's attitude and actions toward domestic violence.

CRJ 152 Sexual Assault
3 Credits
Prerequisites: CRJ 110, 150 or permission of instructor

This course examines sexual assault, beginning with definitions and describing the degrees of sexual assault, e.g. 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
Prerequisites: 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, 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. An intensive analysis of United States Supreme Court decisions also will be conducted.

CRJ 214 Colorado Revised Statutes
3 Credits
Prerequisite:CRJ 110

This course is designed to provide students with an understanding of the principles and concepts of the Colorado Criminal Code.

CRJ 216 Juvenile Law and Procedure
3 Credits
Prerequisite:CRJ 110

This course analyzes the socio-legal operation of the Juvenile Court, focusing on the substantive and due process rights of minors. Legal reasoning underlying the juvenile law as it operates at all levels of government is also discussed. (Spring only)

CRJ 218 Drug Investigative Strategies
3 Credits
Prerequisite:CRJ 110

This course examines both the procedural and administrative functions of a drug enforcement unit, including 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 or permission of instructor

This course highlights the environmental organizational and socio-psychological dimensions of social control. This course includes the study of individual attitudes, beliefs and behavior involved in role conflicts, community relations and conflict management in the social structure. (Spring only)

CRJ 225 Crisis Intervention
3 Credits
Prerequisites: 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 230 Criminology
3 Credits
Prerequisites: CRJ 110

This course examines the question of crime causation from legal, social, political, psychological and theoretical perspectives; history and development of criminology.

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. Students 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 students with an understanding of trauma reaction and stress management for the first line responders, e.g. police officers, victim advocates, paramedics and firefighters. Practical application of coping skills and stress management for first line responders is discussed. (Spring and Summer)

CRJ 240 Criminal Investigation
3 Credits
Prerequisite: CRJ 110

Criminal investigative methods and procedures are introduced, including 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 overviews 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 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. The course also focuses on the possible long term destruction manneriisms (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 Nonprofit Organizations
2 Credits

This course focuses on the specifics of grant writing for nonprofit organizations. The course 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
0.5 - 5 Variable Credits
Prerequisite: Some topics may be restricted to criminal justice practitioners

This course is designed for flexible use 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 and Spring only)

CRJ 297 Cooperative Education/ Internship
3 Credits
Prerequisite: Permission of Cooperative Education Coordinator

This course is a credited program which provides work experience opportunities for students to gain practical work experience related to their educational program. (Fall, Spring and Summer)

CSC - COMPUTER SCIENCE

All CSC courses require concurrent enrollment in computer lab sections.

CSC Computer Lab
1 Credit

CSC 150 Visual Basic Programming
3 Credits
Co-requisite: Computer Lab
Prerequisite: CIS 119 or equivalent experience or permission of instructor.

This course introduces programming and applications development for the Microsoft Windows Programming 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. You also learn to develop functions and subroutines using structured Visual Basic and build complete Windows executables and applications.

CSC 151 Advanced Visual Basic Programming
3 Credits
Co-requisite: Computer Lab
Prerequisite: CSC 150

This course is a continuation of CSC 150. You will develop more involved applications, work with more advanced controls, and deal with more 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 152 Intro to Microsoft Visual Basic .NET Programming
3 Credits
Prerequisite: CIS 116 or equivalent knowledge or experience

This course provides students with the knowledge and skills needed to develop applications in Microsoft Visual Basic .NET for the Microsoft .NET platform. The course focuses on user interfaces, program structure, language sytax, and implementation details. This is the first course in the Visual Basic .NET curriculum and will serve as the entry point for other .NET courses.

CSC 160 Computer Science I: Language
4 Credits
Co-requisite: Computer Lab
Prerequisite: MAT130 Intermediate Algebra or equivalent experience or permission of instructor

This course will introduce students to the discipline of computer science. Topics covered includes 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. Object-oriented techniques will also be emphasized.

CSC 161 Computer Science II: Language
4 Credits
Co-requisite: Computer Lab
Prerequisite: CSC 160 or permission of instructor.

This course continues the structured algorithm development and problem-solving techniques begun in Computer Science I. Students gain experience in the use of data structures and design of larger software projects. Intensive computer laboratory experience required. Object-oriented techniques will also be emphasized.

CSC 165 Discrete Structures
3 Credits
Co-requisite: Computer Lab
Prerequisite: CSC 160 or permission of instructor.

This course prepares students for a fundamental understanding of computing and computer science. Topics covered include set theory, Boolean algebra, relations, functions, graph theory and techniques for formal reasoning.

CSC 225 Computer Organization
4 Credits
Co-requisite: Computer Lab
Prerequisite: CSC 160 or permission of instructor.

This course introduces the student to the organization of a computer at the logic level. Topics covered includes numbering systems, digital logic, digital systems, machine level representation of data, assembly language programming, machine organization and memory system organization.

CSC 233 Object-Oriented Programming in C++
3 Credits
Co-requisite: Computer Lab
Prerequisite: CSC 230.

This is an advanced level computer programming course. Although it teaches C++ as a complete language, it presumes knowledge of at least one similar language such as C or Pascal. Prior knowledge of C at an advanced level as well as fundamental concepts of algorithms and data structures is highly recommended. Encapsulation, inheritance, polymorphism, information hiding, reusable components and OOP principles are thoroughly explored.

CSC 235 Microsoft Visual C++
3 Credits
Co-requisite: Computer Lab
Prerequisite: CSC 161 or CSC 233.

This course introduces the use of the Microsoft Foundation Class Library for Microsoft Windows programming. The Visual C++ AppWizard is used to create complete Windows applications employing the document/view architecture. The Visual C++ resource editor is also explored in creating menus, toolbars, controls and dialogs and using Class Wizard to handle Windows messages.

CSC 236 C# Programming
3 Credits
Co-requisite: Computer Lab
Prerequisite: CSC 161, equivalent experience or permission of instructor.

This class will introduce you to the C3 object oriented programming language developed by Microsoft, and its new .NET Framework. C# builds on the skills introduced in the C++ and Java languages; supporting classes, inheritance, and polymorphism. In addition, C# introduces several additional features such as properties, indexers, delegates, events and interfaces. These new features will make C# a compelling language for developing object-orientated and component-based systems.

CSC 240 Java Programming
3 Credits
Co-requisite: Computer Lab
Prerequisite: C++ or equivalent experience.

This course is an introduction the Java programming language and covers basic graphics, threads, events/procedures, user interface, and libraries. The student will write and execute a variety of Java programs. Java Applets will be incorporated into HTML pages, allowing for the use of real-time sound, graphics, animation, and user interaction.

CSC 255 Computer Programming Languages
3 Credits
Co-requisite: Computer Lab
Prerequisite: CSC 161 and CSC 225

This course is an overview of contemporary programming paradigms and their related languages. Topics covered includes procedural, functional, logic, and object-oriented and parallel processing.

CSC 265 Asssembly Language Programming
3 Credits
Co-requisite: Computer Lab
Prerequisite: One programming course other than BASIC and MAT 160

This course is designed to teach assembly language programming on the platform. Topics covered includes executable files, screen processing, string instructions, arithmetic (Binary/ASCII/BCD) operations, table processing and macros.

CWB - COMPUTER WEB

All CWB courses require concurrent enrollment in computer lab sections.

CWB Computer Lab
1 Credit

CWB 100 Internet I
1 Credit
Prerequisite:CIS 118

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, World Wide Web, and various search engines.

CWB 110 Web Layout and Design Concepts
3 Credits
Prerequisite:CWB 100

This course is an introduction to the development of Web pages using structured design to space pages. Topics may include text manipulation, cross-platform calibration, graphics formats, data tables, and file downloading requirements.

CWB 135 Complete Web Editing: (Dreamweaver)
3 Credits
Co-requisite: Computer Lab
Prerequisite: CWB 100 and a working knowledge of Windows

This course explores the complete set of Web editing tools provided by the software specified. Topics include links, backgrounds, controlling text and graphic placement, tables, image maps, frames, and forms. This course is the equivalent of CWB 130, CWB 131, and CWB 132.

CWB 140 Introduction to Multimedia
3 Credits

Co-prerequisite: CWB 110

This course introduces the hardware and software used to develop multimedia and computer-based training applications.

CWB 141 Multimedia Software Modeling Development: Director
3 Credits
Prerequisite: CWB 140
Co-prerequisites: CWB 142

This course introduces the basic tools and techniques of multimedia modeling and animation. The course includes using tool palettes, interacting with a model, views/perspectives, text objects and freeform/surface editing.

CWB 142 Multimedia Authorship: Authorware
3 Credits

Co-requisites: CWB 141
Prerequisite: CWB 140

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.

CWB 143 Multimedia Software Design/ Development: (Lingo)
3 Credits
Prerequisites: CWB 141 or CWB 142

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 interaction; and movable objects.

CWB 162 Image Editing II
3 Credits
Co-requisite: Computer Lab
Prerequisite: A working knowledge of

Windows

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.

CWB 163 Fireworks

4 Credits
Co-requisite: Computer Lab
Prerequisite: CWB 110 or Permission of Instructor or Equivalent Web Design Knowledge

This course provides is designed to teach the student how complete bitmap editing, select, group, and stacking. The student will also learn how to work with text, fills, Live Effects, colors, styles, exporting/optimizing, and animated GIF images. Other topics that will be addressed are the creation of buttons, how to work with image maps/rollovers, production techniques, and advanced techniques.

CWB 167 Illustrator

4 Credits
Co-requisite: Computer Lab
Prerequisite: CWB 110 or Permission of Instructor or Equivalent Knowledge

This course is designed to teach the student how to create basic shapes, paint and draw in Illustrator. This course also includes topics on, working with brushes, objects, type, layers and blending shapes and colors. The student will also have the opportunity to explore the options for printing artwork and producing color separations.

CWB 175 Complete Web Authoring: HTML

3 + 1 lab Credit
Co-requisite: Computer Lab
Prerequisites: CIS 118, CWB 100, and a working knowledge of Windows

This course explores the complete set of Web authoring skills using HTML and/or other scripting languages. Topics include links, backgrounds, controlling text and graphic placement, tables, image maps, frames, and forms.

CWB 180 DHTML

4 Credits
Co-requisite: Computer Lab
Prerequisites: CWB 175

This course is designed to introduce the student to DHTML basics. Some of the topics included are: an introduction to style sheets, cascading style sheets, layers and styles, and working with layers and JavaScript.

CWB 181 XML

3 Credits
Co-requisite: Computer Lab
Prerequisites: CWB 175 and one programming language or Permission of Instructor or Equivalent Knowledge.

This course is designed to create a well-formed XML document, understand how DTDs impose structure, and how Style Sheets transform an XML document. Among the many topics that will be discussed are processing XML with application code, working with the DOM, recognizing common industry parsers, and the integration of XML into an infrastructure.

CWB 205 Complete Web Scripting: (Java Script)

3 Credits

Co-requisite: Computer Lab
Prerequisite: CIS 115, CWB 175 and one programming language or permission of instructor

This course explores the complete set of Web animation tools. Topics include creating an .swf file, publishing the file with interactivity and animation, create .swf files encompassing navigation, animation, event sound, streaming sound, behavior actions, getting a movie clip, tell targets, preloaded sequences, high-end scripting, the incorporation of Flash and Director, and a high-end project.

CWB 210 CGI and Perl

3 Credits

Co-requisite: Computer Lab
Prerequisite: CSC 160, or equivalent experience, or permission of instructor.

This course covers CGI and Perl programming. Topics include foundations of CGI, database integration, building CGI programs, processing HTML forms, and Perl programming. A basic understanding of UNIX is required, including directories, files, permissions, and text editing. A brief review of UNIX is covered.

CWB 245 Web Animation, Complete: Flash

3 Credits

Co-requisite: Computer Lab

Prerequisites: CIS 115, CWB 175 and one programming language or permission of instructor

This course explores the complete set of Web scripting tools. Topics include a review of HTML tags, JavaScript versus VBScript, variables, literals, expressions, conditionals, functions, objects, properties, methods, events, arrays, extracting the system date, creating and reading cookies, creating an array, displaying data based on a cookie value, object, writing HTML to another window, determining the browser and detecting keystrokes. This course is the equivalent of CWB 200, 201, and 202 taken separately.

CWB 262 Cold Fusion

3 Credits

Corequisite: Computer Lab
Prerequisites: Experience with an HTML editor or HTML, and a database course or Permission of Instructor or Equivalent Knowledge

This course is designed to teach the student a basic overview of ColdFusion, URL Parameters, Strings, and other data types. The student will also have the opportunity on control in ColdFusion, form handling, databases and sQL. Other topics include data retrieval, application framework, reusing code and building a complete Web application.

CWB 265 Macromedia Dreamweaver UltraDev

4 Credits

Corequisite: Computer Lab
Prerequisites: CWB 135 or Permission of Instructor or Equivalent Knowledge

This course is designed to teach the student the basics of UltraDev, client/server concepts and objects. The student will also have the opportunity to amend and search a database, work with user logins and registrations, as well as, creating and adding functionality to a shopping cart. Server behaviors and stored procedures are also covered in this course.

DAN - DANCE

DAN 170 Dance and Stage Movement

3 Credits

This course introduces students to the basic elements of modern dance and to the potential of dance and stage movement as a means of communication.

DAN 271 Dance for Musical Theatre

3 Credits
Prerequisite: THE 170 or permission of instructor

This course introduces students to dance within the context of musical theatre. Students practice nonverbal communication and expressive movement techniques.

ECE - EARLY CHILDHOOD EDUCATION

ECE 100 Basics for Caregiver 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

ECE 101 Introduction to Early Childhood Professions
3 Credits

This course provides an introduction to Early Childhood Professions. Topics include the eight key areas of professional knowledge: Child Growth and Development; Health, Nutrition and Safety, Developmentally Appropriate Practices; Guidance: Family and Community Relationships; Diversity; Professionalism; Administration and Supervision. Ages addressed: prenatal through age 8

ECE 102 Early Childhood Professions Lab Techniques
3 credits

This course includes a classroom seminar and observations at the children's center at RRCC. Observations provide the student with the opportunity to learn to observe children, to observe appropriate interactions and to develop effective guidance and management techniques. Ages addressed: birth through age 8

If the student is not already employed in a licensed child care setting, 90 practicum hours must be fulfilled in the Children's Center at Red Rocks. Health screening including TB Tine and HIB tests and FBI screen is required.

ECE 103 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.

ECE 110 "Grand Beginnings" Infant and Toddler Care
1 Credit

This course provides an overview of quality caregiving practices of infants and toddlers. Developmental differences and the resulting caregiver responses with infants, mobile infants and toddlers are explored. Interaction and communication with parents is strongly emphasized. Ages addressed: birth through age 3

ECE 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 address: prenatal through age 3.

ECE 112 Introduction to Infant/Toddler Lab Techniques
3 credits
Prerequisite or Co-requisite: ECE111 Infant and toddler Theory and Practice

This course includes a classroom seminar and observations at the Children's Center at RRCC. Observations provide the student with the opportunity to learn to observe children, to observe appropriate interactions and to develop effective guidance and management techniques. Ages addressed: birth through age 8

If the student is not already employed in a licensed child care setting, 90 practicum hours must be fulfilled in the Children's Center at Red Rocks.Health screening, including TB Tine and HIB tests and FBI screen, is required.

ECE 205 Health, Safety and Nutrition
3 Credits

This course focuses on nutrition, health and safety as key factors for optimal growth and development of young children. Content includes nutrient knowledge, meal and snack planning, food program participation, health practices, appropriate activities and communication with families. Ages addressed: prenatal through age 8.

ECE 207 Literature for the Young Child
3 Credits

This course focuses on identifying good children's literature, creating a literature-based classroom, and the various genres of children's literature. Students will explore ways to extend literature into all areas of the curriculum, use literature to incorporate multicultural education in the early childhood setting, and engage young children in literature.

ECE 225 Language and Cognition and the Young Child
3 Credits
Prerequisite: ECE 238 Child Development

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.

ECE 226 Creativity and the Young Child
3 credits
Prerequisite: ECE 238 Child Development

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. The course focuses on developmentally appropriate curriculum strategies in all developmental domains. Ages addressed: birth through age 8

ECE 241 Administration: Human Relations for the Early Childhood Profession
3 Credits
Prerequisite: ECE 255 Child, Family and Community preferred

This course focuses on the human relations component of an early childhood professional's responsibilities. Course content includes director-staff relationships, staff development, leadership strategies, parent-professional partnerships and community interaction.

ECE 240 Administration of Early Childhood Care and Education Programs
3 Credits
Prerequisite: ECE 238 Child Development and 16 ECE credits

This course examines Colorado's licensing requirements, as well as optimal standards pertaining to the operation of programs for young children. Course content focuses on establishing a new center, administrative functions and advocacy.

ECE 220 Methods/Techniques: Curriculum Development
3 Credits

Prerequisite or co-requisite: ECE 238 Child Development preferred
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.

ECE 236 Child Development
4 Credits
Co-requisite: Lab
Prerequisite: ENG 121, acceptable assess-

ment scores for reading and writing, or permission of faculty 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 class may be taken as PSY 238. Ages addressed: prenatal through age 12. The co-requisite lab includes applied observation of childrens' development.

ECE 255 Working with Parents Families and Community Systems
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.

ECE 260 The Exceptional Child
3 Credits

This course presents an overview of typical developmental progression. The content includes planning, learning strategies, legal requirements, accommodations and adaptations necessary to create an integrated classroom environment for a wide range of exceptionalities. Ages addressed: prenatal through age 8

ECE 290 Innovative Communication Strategies
1 Credit

The purpose of this course is to help students learn the skills and techniques essential to effective interpersonal communications and practice applying these skills in their daily lives. Included in this course will be theory and practice in sending and listening skills, self-awareness, noverbal communication, problem solving and conflict reduction.

ECO - ECONOMICS

ECO 101 Economics of Social Issues
3 Credits

This course examines the major socio-economic issues of the past century. Topics include poverty, growth, education, health care, pollution and discrimination and the government's role in regulating them.

ECO 201 Principles of Macroeconomics (Core)
3 Credits

Macroeconomics is the study of the United States economy. The course looks at the interrelationships between households, businesses and the government. Saving and investment decisions will be explored, as well as the causes of unemployment and inflation.

ECO 202 Principles of Microeconomics (Core)
3 Credits

Microeconomics studies the firm in-depth, and it explores the nature of costs and production. The course introduces economic models, which portray consumer behavior, competitive firms, monopolies, oligopolies and monopolistic competition.

EGA - ENGINEERING GRAPHICS TECHNOLOGY—ARCHITECTURAL

EGA 121 Intermediate CADD—Architectural
3 Credits
Prerequisite: EGT 120 or equivalent

2-D residential concept drawings are created from given design parameters and appropriate specs. 2-D floor plans, cross sections and elevations are required.

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 207 Framing Methods
3 Credits
Prerequisite: EGA 131

Applications of current building methods are applied to 3-D residential concept models.

EGA 209 Roof Design
3 Credits
Prerequisite: EGA 207 or equivalent

Applications of current residential roof framing methods are applied to 3-D residential concept models.

EGA 231 Architectural Design/Drafting I
6 Credits
Prerequisite: EGA 131 or equivalent

Fundamental understanding of building design, concepts and construction methods are developed by preparing working drawings with necessary details for framing, brick and steel construction. Four basic designs are used as models: the one story or ranch, the one and one-half story, the two story and the split-level. Only one design is chosen and a full set of detail drawings produced.

EGA 241 Architectural Design/Drafting II
6 Credits
Prerequisite: EGA 231 or equivalent

Ideas, sketches and layouts are used to create working drawings of a customized design with an emphasis in remodeling and renovation. Detailed construction drawings are produced using CADD two- and three-dimensional applications per AIA, UBC and local codes.

EGM - ENGINEERING GRAPHICS TECHNOLOGY—MECHANICAL

EGM 121 Intermediate CADD—Mechanical
3 Credits
Prerequisite: EGT 120 or equivalent

This course requires a set of documentation production drawings. Drawings are created per ANSI/ASME Y14.5M spec. Application of 2-D, limits and fits, geometric dimensioning and tolerancing, dimensions and annotations are required.

EGM 131 Three-Dimensional CADD—Mechanical
3 Credits
Prerequisites: EGM 121 and EGT 130 or equivalents

3-D concept design models are created using as-built assemblies, layouts, sketches and existing concept designs. 2-D extractions from the 3-D models, dimensioning and annotations are required.

EGM 205 Assembly and Detail GDandT
3 Credits
Prerequisites: EGM 131

3D assembly drawings created from individual data bases. Assemblies are created using WBLOCK and XREF applications. Production drawing is created using the 2-D

extractions from the 3-D model. Presentation methods are also demonstrated.

EGM 215 Mechanisms and Drives
3 Credits
Prerequisites: EGM 205

This course uses the applications of 3-D drawing of a variety of mechanisms and drives to 3-D assembly drawings. 3-D animation and rendering methods are used to create a more realistic presentation drawing.

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 250 Pro/E Basic PT and Assembly Design
3-6 Credits
Prerequisite: CAD background in 2d/3d applications is desirable

This course introduces the basic part and assembly design principles of Solid Modeling, Parametric Design, and Associativity along with basic detailing using Pro/ENGINEER as a design tool. Upon completion of this course the student will have the basic functions needed to generate parts, assemblies and drawings along with the proper basic techniques.

EGM 251 Pro/E Drawing/Detailing Fundamentals
3-6 Credits
Prerequisite: CAD background in 2d/3d app;ications is desirable and EGM250 or equivalent.

This course introduces all fundamentals of production drawings and how to fully manipulate the associativity of Pro/E between parts or assemblies while in a drawing, along with the general drawing configuration administration relating to drawings.

EGM 252 Pro/E Fundamentals of Design
3-6 Credits
Prerequisite: CAD background in 2d/3d app;ications is desirable and EGM250 or equivalent. Approval of the instructor.

This course advances the various techniques learned in EGM 250, EGM 251 and introduces assembly management techniques pertaining to Top-Down Design, basic surfacing, styling features and helpful troubleshooting instances of existing geometry.

EGM 253 Pro/E Advanced Applications
3-6 Credits
Prerequisite: CAD background in 2d/3d app;ications is desirable and EGM250, EGM251, EGM252 or equivalent. Approval of the instructor.

This course introduces various advanced applications of the design principles used in parametric design software, ranging from sheet metal design, advanced Surfacing, Animation, Basic Mechanisms and Basic Manufacturing.

EGM 254 Pro/E Current Version Update
3 Credits
Prerequisite: CAD background in 2d/3d app;ications is desirable and EGM250, EGM251, EGM252 or equivalent. Approval of the instructor.

This course updates the student to the most current release of Pro/E. Showing any core user interface changes, menu changes and or module changes.

EGM 260 Pro/E Industry Upgrade
3 Credits
Prerequisite: CAD background in 2d/3d app;ications is desirable and EGM250, EGM251, EGM252 or equivalent. Approval of the instructor.

This course updates the student to the most current release of Pro/E. Showing any core user interface changes, menu changes and or module changes.

EGT - ENGINEERING GRAPHICS TECHNOLOGY

(Formerly Drafting Technology)

EGT 100 Technical Drawing
6 Credits

This course is for architectural and/or mechanical drafting majors, pre-engineering students and anyone seeking instruction in basic engineering graphics. Course content includes use and care of equipment; drawing techniques; orthographic, auxiliary, sectional and isometric projection methods; sketching and computer applications.

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 and database manipulation are taught, using construction methods of three-dimensional wire, three-dimensional thickness and solid models.

EGT 265 Presentation Graphics
3 Credits
Prerequisite: EGA or EGM 241 or equivalent

Application of 2-D graphics, 3-D modeling, animation and rendering techniques to enhance portfolio presentation.

EIC - ELECTRICITY—INDUSTRIAL/ COMMERCIAL

EIC 100 Electrical Construction and Planning

4 Credits

This course teaches planning 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 102 Electrical Drawings

1 Credit

This is an effective course designed to improve the individual's ability to read, interpret and analyze Electrical Ladder Drawings. Additionally, this program will acquaint the student with the basic electromechanical components commonly used in electrical control circuits, as well as solid-state relays and the role of programmable controllers.

EIC 104 Basics of Industrial Electricity

1.5 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 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. The course emphasizes proper use of tools, and safety.

EIC 120 Electrical Installations II

4 Credits

Prerequisite:EIC 110 or permission of instructor

This course explores commercial and industrial building wiring in conformance with the current National Electrical Code, and local codes using electric metallic tubing and other raceways. The emphasis is on proper use of tools, and safety.

EIC 124 Electrical Safety Requirements and Procedures

1 Credit

This course will give you training that is 100% practical and deals with every important aspect of OSHA's Electrical Safety-Related Work Practices and how they apply to your facility. Teach you the safe installation and maintenance of electrical equipment. Also informs you on the use of personal protective equipment.

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 134 Life Safety Code (NFPA 101)

1.5 Credits

The Life Safety Code addresses new and existing buildings with specific requirements that directly influence the safety of people. The purpose of the code is to preserve human life, protection of property and equipment. This course is for inspectors, managers, engineers, architects, building owners and insurers, manufactureres including fire suppression and alarm systems, and anyone in a building-related field.

EIC 135 National Electrical Code II

4 Credits

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

EIC 144 Grounding and Bonding

1.5 Credits

This course covers the latest technology and techniques available for a code and standards' compliant grounding and bonding systems. Learn about grounding and bonding requirements as they relate to Article 250 and other articles of the National Electrical Code. Installation, testing and inspection procedures for all power systems will be discussed. Also discussed are rules to minimize the risk of electircity as a source of electric shock, and as an ignition source for fires.

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 the voltage current and power of circuits. Common measuring instruments and safety are also discussed.

EIC 155 AC Circuit Fundamentals

4 Credits

Prerequisites: 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. The course 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 164 Introduction to Industrial Electronics

1.5 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 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 174 Tuning DDC/Process Control Loops
1.5 Credits

This course investigates process characteristics and process control loops to learn quick and proper controller adjustment for good response. Topics include defining proportional band, integral and derivative, formal open and closed loop tuning methods, and advanced control methods. Students use computer simulation software to learn the concepts of proportional band, integral and derivative and practice different tuning methods. The computer simulation reduces the time necessary to set up the exercise and allows the student to concentrate on the concepts being taught.

EIC 180 Electrical Maintenance Techniques
4 Credits

This course introduces students 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 184 Maintenance Management
1 Credit

This course covers the critically important but often overlooked component of maintenance management. It is imperative that, maintenance organizations be managed by people who understand the techniques for the development and administration of proven programs. In this course, you will learn how to implement a maintenance program or improve an existing program. In the end, you will know how to reduce unscheduled overtime, excessive material costs, and the number of breakdown repairs.

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
Prerequisites: EIC 130, 135 or permission of instructor

This course is an Advanced National Electrical Code course for the in-plant technician. The course emphasizes interpreting NEC rules that apply to industrial and 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. The course 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 and 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 ensure 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 and control devices; heating, ventilating and air conditioning applications; motor control; conveyor drives; and other industrial applications. Students 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 221 Trouble Shooting Electrical Control Circuits
1.5 Credits

This course is designed to bridge that gap between the teoretical knowledge and critical thinking skills needed on the job. you will spend a minimum of 50% of the time actually working at a troubleshooting station with circuits that are identical in every respect to motor control circuits in a plant. There is no discussion of electron theory, magnetism, or any other basic subject in this course. It is devoted exclusively to teaching hands-on troubleshooting.

EIC 222 Introduction to Instrumentation and Process Control
1.5 Credits

This course investigates theory of industrial instrumentation measurement through process control. Topics include theory and measurement methods for temperature, pressure, level and flow. Students use hands-on training equipment to measure temperature and pressure. Test equipment is used to simulate a two-wire transmitter and a current signal for calibration of an I/P transducer.

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. Students 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 226 Understanding Programmable Logic Controllers Advanced
1.5 - 2.0 Credits
Prerequisite:EIC 224 or permission of instructor

This course studies the advanced uses and applications of programmable logic controllers toward automated equipment, machines and processes. Included are the functions of PLC hardare componenets, converting relay logic to ladder logic, comprehending ladder logic instruction functionality and identifying the PLC's data structure. Students use hands-on training equipment to create, implement and troubleshoot ladder logic programs that simulate real automated machine control and processes.

EIC 227 Mechanical Drives
1.5 Credits

This course covers the basics of mechanical drives including chain drives, belt drives, bushings, couplings, gear drives, bearings, and lubrication. Topics include power transmission physics, shafts, keyways and keyseats, prime movers, gearing, chain drives, belt drives bushings couplings, bearings, lubrication, clutches, brakes and torque limiters, mechanical variable speed drives.

EIC 229 AC and DC Variable Speed Drive Technology
1.5 Credits

This course teaches you about Variable speed drive technology. This offers a cost effective method to match driver speed to load demands. Drive technology presents an opportunity to reduce operating costs and improve overall productivity. In this course you will learn the ins and outs of variable speed drive technology, including: Operation, Set-up, Troubleshooting, Maintenance, roper selection and application for drives and basic drive overview and comparison.

EIC 231 Electro-Pneumatics Training
1.5 Credits

This powerful interactive training program will introduce you to the real world of pneumatic and electro-pneumatic control and power transmission. You will learn the full scope of compressed air production, preparation, and distribution. Through "Hand-On" learning, you will learn to apply simple gas laws, reading of symbols and understanding of component technologies.

EIC 233 AC/DC Machines: Theory and Applications
1.5 Credits

This course is presented using the lates technological equipment. Instruction techniques include demonstrations with participant interaction, as well as "Hands'-On" lab exercises. All phases of this course are taught in simple and easy-to-understand terms. The content progresses logically from basic operational theory to the actual operation of various types of AC and DC motors.

EIC 234 High Voltage Electrical Safety
1 Credit

This course teaches your responsibilities according to OSHA 29 CFR 1910.269. All qualified employees performing operations or maintenance work or who have access to power generation, transmission and distribution installations must be trained according to OSHA standards. The standard covers the following types of work operations: Inspection, Switching-Connection and Disconnections, Maintenance of Lines, Equipment Testing, Fault Locating, and Streetlight Relamping.

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 use. 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, and basic layouts and principles involved in fire alarm system design and construction.

EIC 241 Advanced Fire Alarm Systems
4 Credits
Prerequisite: EIC 240

This course covers design, installation, documentation, testing and codes. Advanced layout and principles involved in fire alarm system design and construction are covered. Students testing for NICET II certification can benefit from this class.

EIC 242 National Fire Alarm Code
4 Credits
Prerequisite: EIC 240

The National Fire Alarm Code and local code requirements for fire alarm system installation are taught in this course.

EIC 250 Fiber Optics Training
1.5 Credits

This course on the introduction and theory of fiber optics includes standards, installation, connectorization, mechanical/fusion splicing, and testing through advanced procedures in troubleshooting, repair, and certification. Many variations of equipment and materials make this a certification course for levels 1, 2, and 3 that is not dependent on a specific vendor. Building real world fiber networks with extensive hands on certification and written exams prepare students for the versatility of actual work environments.

EIC 251 Fiber Optics Training Advanced
4 Credits

This course on the introduction and theory of fiber optics includes standards, installation, connectorization, mechanical/fusion splicing, and testing through advanced procedures in troubleshooting, repair, and certification. Many variations of equipment and materials make this a certification that is not dependent on a specific vendor. Many variations of equipment and materials make this a certification course for levels 1, 2, and 3 that is not dependent on a specific vendor. Building real world fiber networks with extensive hands on certification and written exams perpare students for the versatility of actual work environments.

EIC 254 Telephony
1.5 Credits

This course is designed for individuals new to the telecommunications industry or in positions requiring a basic knowledge of voice and data communications systems, networks and terminology; or those who need to understand current networking alternatives and the impact on business decisions and opportunities.

EIC 279 Comprehensive Structured Cabling
3 Credits
Special course fees

This course combines the Fiber Optics Certification and Structured Cabling Certification classes into a comprehensive study of cabling systems in one course.

EIC 280 Fiber Optics Certification
2 Credits
Special course fees

This course on the introduction and theory of fiber optics includes standards, installation, connectorization, mechanical/fusion splicing and testing through advanced procedures in troubleshooting, repair and certification. Many variations of equipment and materials make this a certification course for levels 1,2 and 3 that is not dependent on a specific vendor. Building real-world fiber networks with extensive hands-on certification and written exams prepare students for the versatility of actual work environments.

EIC 281 Electrical Issues for Telecommunications
0.5 Credit
Special course fees

This course examines the Telecom/Data-com system's installation with electrical systems, including pathways, distribution and supply, grounding and bonding, UPS and lighting. Besides exploring improvements and new technologies this course will assist telecom/data com professional to assess and secure an overview of the communication's industry convergence with the electrical field.

EIC 283 Structured Cabling Systems Distribution Certification
1.5 Credits

This course offers hands-on and theoretical training in fiber optic cable layout for residential and commercial, single occupant, multi-occupant/apartment and campus structured cabling systems.

EIC 284 Certification for Residential Voice/Data System Network
1.5 Credits
Special course fees

This course trains the contractor/installer in design, estimation, installation, troubleshooting and certification of complex residential structured cabling systems. This course is helpful to those interested in home automation, or complex office electrical systems, and A/V contractors. Training includes the use of network simulators.

EIC 285 Voice Data CAT Distribution
1 Credit
Special course fees

This course involves voice/data coaxial distribution certification for residential, multi-occupant, commercial, and campus structured cabling systems.

EIC 286 LAN Certification/Repair/Troubleshooting
1 Credit
Special course fees

This course will explore the testing, repair, certifying and troubleshooting of LAN using network distribution simulators to diagnose twisted repairs, coax and fiber.

EIC 289 RCDD Exam Prep Course
2 Credits
Special course fees

This RCDD exam preparation course should be taken prior to the BICSI RCDD exam. The course is a detailed study of the BICSI TDM manual using the laboratory equipment to facilitate understanding as well as exam success. The TDM manual and study guide must be purchased separately.

EIC 292 Project Management
1 Credit
Special course fees

This course covers the critically important but often overlooked component of construction, and project management. Topics include: project scope of work, estimator-project manager alliance, specification analysis, analyzing contractual documents, management documentation, successful meetings, critical path management, prospective on project milestones, creation and evaluation of cost coding, employee/company quality control, supervisor/foreman relations, project documentation, change orders, project evaluation, billing final inspection and project close out.

EIC 294 Specification Analysis for Cabling Systems
0.5 Credit
Special course fees

This course is intended to avoid problems and unanticipated expenses on cabling projects for estimators, contractors and suppliers through an organized analysis of the project specifications.

EIC 295 Specification Writing for Structured Cabling Systems
1 Credit
Special course fees

This course teaches the writing of specifications for structured cabling systems. The job layout, products used and execution of the project will be examined. Relationships with customers, installation contractor and product supplier will be examined in detail.

EIC 296 Cabling System Grounding and Bonding
1 Credit
Special course fees

This course will prepare students in the latest technology and techniques available for a code-and standards-compliant grounding and bonding system. Due to the sensitivity and expense of equipment transmitting and receiving signals and data through structured cabling systems, students will learn that the correct procedures must be followed to comply with applicable codes and standards.

EMP - EMERGENCY MANAGEMENT AND PLANNING

EMP 101 Principles 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. Participants 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 designed to give students a good working knowledge of the standards, regulations and processes of Emergency Management Planning. students will formulate a rationale for assessing hazard vulnerability and determine the applicability of proposed preparedness, mitigation, response and recovery strategies. The student understand the importance of establishing and coordinating emergency management planning teams. They will develop descriptions of region specific hazards, assess vulnerability, identify existing hazard mitigation systems, recommend activities, estimate costs and develop a strategy for mitigation and response and recovery procedures.

EMP 106 Exercise Design and Evaluation
3 credits

This course provides students with the knowledge and develops skills that will enable students to train a staff and to conduct an exercise that will test a community's plan and its operational response capability. This course is also designed to give students knowledge and develops skills that will enable students to manage exercise evaluation activities before, during and after an emergency management exercise.

EMP 107 Emergency Operations Center
3 credits

This course provides students with knowledge and skills to manage and operate an EOC during crisis situations. The course covers many aspects of properly locating and designing an EOC, how to staff, train and brief EOC per-

sonnel and how to operate an EOC during various situations. The course covers various aspects of information gathering and dissemination, along with best practices for use of computers in an EOC environment, promoting enhanced planning and better control information flow to safely and effectively make strategic response decisions.

EMP 109 Incident Command Systems
3 credits

This course explores the dynamics of managing major emergency incidents. The National Incident Command System is used in the instruction. Major incidents where large life, property, or economic losses are possible are studied. Topics include organization and staffing, incident and event planning/staffing, organizing a response to an incident and incident resource management. 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 240 Leadership and Influence
3 credits

This course enables students to lead and influence others in the demanding setting of emergency management by increasing their range of skills in a variety of interpersonal areas: conflict management, use of power group dynamics as well as leadership and influence.

EMP 241 or EMP 247 Decision Making and Problem Solving or Decision Making in a Crisis
3 credits

These course are designed to enable students to clearly identify a problem and its causes in order to determine the appropriate type of decision making style. Using suggested methods of problem solving, participants will be able to apply creative solutions to both emergency and non-emergency situations.

EMP 242 Effective Communications
3 credits

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 information.

EMP 244 Developing Volunteer Resources
3 credits

This course is designed to enable students to develop and coordinate volunteer resources in a disaster. The success of developing volunteer resources is often critical in emergency management. Overall, local emergency program managers involve volunteers in different tasks and to varying degrees. Some rely almost exclusively on organized volunteer groups and make minimal use of individual volunteers. Yet both individual volunteers and established groups represent a wealth of talent that, systematically applied, can significantly upgrade the emergency management program.

EMP 247 Decision Making in a Crisis
3 credits

Functioning in an emergency is not "business as usual". The ability to make sound timely decisions during a crisis is critical. This course provides the opportunity to practice making decisions in much the same way as during an incident. It will enable the student to make emergency-related decisions, examine the consequences of those decisions on emergency operations and the community at large.

EMP 291 Public Information Officer
3 credits

This course provides students an opportunity to practice and expand on public information skills in a crisis environment. The course is a highly interactive course that includes workshops on writing, public speaking, media interviews and awareness campaign development. Students also will discuss media relations and public information planning.

EMS - EMERGENCY MEDICAL SERVICES

EMS 100 CPR for the Health Care Provider
1 credit

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

EMS 115 First Responder
3 credits

This course provides the student with core knowledge and skills to function in the capacity of a first responder arriving at the scene of an emergency and providing care until advanced EMS help arrives. Upon successful course completion, the student will be eligible to take a certification exam at the responder level.

EMS 124 EMT - Basic Clinical
3 credits
Prerequisite: You must be 18 years old, have a valid driver's license, high school diploma or GED certificate, recent (within 6 months) physical exam, initiaion of Hepatitis B vaccination series, recent (within 6 months) negative reading on the PPD (tuberculosis) skin test, updated MMR (measles, mumps, rubella) vaccination, current CPR card (Health Care Provider or Professional Rescuer level), proof of reading and writing at the twelfth grade level.
Corequisite: EMS 125

This course provides clinical experience for the EMT - Basic student.

EMS 125 Emergency Medical Technician - Basic
90 credits
Prerequisite: Instructor permission required

This course provides the first level of training in the career structure of the Emergency Medical Technician. Upon successful completion of this program (which includes written and practical examinations), candidates are eligible to take the state EMS certification examination (Candidates must fulfill the requirements set by the Colorado Department of Public Health and Environment)

EMS 126 Emergency Medical Technician – Basic Refresher
3 credits
Prerequisite: Instructor permission required

This course assists those needing to recertify their Colorado EMT-Basic license. Included in this class are the latest additions to the EMT-Basic curriculum. The course consists of lecture and skills sessions. At the end of the refresher course, a state approved practical exam will be offered. Upon completion, students will be prepared for the state written recertification exam.

EMS 130 Emergency Medical Techinician-Basic Intravenous (IV) Therapy
2 credits
Prerequisite: Instructor permission required

This course is designed for the EMT-B to upgrade her/his skills. Students will spend time in the classroom gaining the knowledge and skill needed to safely and efficiently initiate an IV line in the pre-hospital setting. The clinical portion of the course provides students with the opportunity to initiate IV's on actual patients. Upon successful completion of the, course students are eligible to be IV certified.

EMS 131 Basic Trauma Life Support
1 credit
Prerequisite: Instructor permission required
This course is designed for Emergency Medical Services' personnel, and covers all the skills necessary for rapid assessment, resuscitation, ad stabilization and transportation of the trauma patient. This course was developed by Basic Trauma life support International and endorsed by the American College of Emergency Physicians and the National Association of EMS Physicians.

EMS 134 Basic Electrocardiogram (EKG) Interpretation for EMS Provider
2 credits

This course assists the emergency medical technician in acquiring the knowledge and skills essential for identification of basic cardiac arrythmias especially those that are life threatening. The course is specifically designed for the pre-hospital worker. students learn to interpret both static and dynamic EKG tracings.

EMS 225 Paramedicine (Emergency Medical Technician - Paramedic)
14 credits
Prerequisite: Instructor permission required
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. To apply for this program, students must successfully complete the EMT-B course and have approximately one year of EMT-B first responding experience. Students will learn 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, students will be eligible to take the Colorado State EMS paramedical certification exam.

EMS 226 Paramedicine II (Emergency Medical Technician - Paramedic)
13 credits
Prerequisite EMS 237

Continuation of Paramedicine I. Must have completed Paramedicine I to be eligible to enroll in this class.

EMS 240 Advanced Cardiac Life Support (ACLS) for the Emergency Medical Service Provider
1 credit
Prerequisite: Instructor permission required

This ACLS course is specifically designed for the Emergency Medical Services' provider. The course meets all the AHA specifications for ACLS certification. Advanced life support techniques such as arrhythmia recognition, pharmacological intervention and airway management are covered. Students have the opportunity to be certified.

EMS 241 Pediatric Advanced Life Support for the EMS Provider
1 credit
Prerequisite: Current CPR certification (American Heart Association Health Care Provider Course C)
Proficiency in EKG interpretation

This course is specifically designed for the Emergency Medical Service's provider. The course meets all American Heart Association specifications for PALS certification. Pediatric advanced life support teaches students to recognize and treat problems associated with airway, breathing and circulatory emergencies. Students have the opportunity to become certified at the national level.

EMS 279 Paramedicine III (Emergency Medical Technician - Paramedic)
8 credits -
Prerequisite EMS 237 and 238

The clinical and internship phase of the paramedic program. Students will be able to observe and practice the skills learned in class. Clinical and internship rotations will be both in-hospital and with an EMS agency.

ENG - 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 030 Basic Writing Skills
3 Credits

In a writing context, this course focuses on the simple sentence with particular emphasis on correct personal pronoun usage and correct verb tense. Students will study the difference between fragments and sentences and the correct usage of both. Focus also will be on subject -verb agreement. Students will begin basic critical reading and thinking skills.

ENG 031 Spelling and Vocabulary I
1 Credit

This course is designed for students who need to develop spelling and vocabulary skills. The course emphasizes spelling rules, phonics, dictionary skills and vocabulary development.

ENG 060 Writing Fundamentals
3 Credits
Co-requisite: Recommended REA 060 Foundations of Reading
Prerequisites: ENG 030 or appropriate COMPASS score

In a writing context, this course focuses on simple and compund sentence structures with particular emphasis on coordinate conjunctions and conjunctive adverbs. Students will write paragraphs emphasizing purpose, organization, topic sentences, and the use of details to support the topic sentence. Emphasis also will be placed on critical reading and thinking.

ENG 061 Spelling and Vocabulary II
1 Credit
Prerequisites: ENG 031 or appropriate ASSET or COMPASS score

This course is designed for students who need to review spelling rules and vocabulary. The course emphasizes understanding and applying spelling rules and vocabulary to common writing experiences. The course is meant to bring student's vocabulary ability to college level.

ENG 090 Basic Composition
3 Credits

This course will emphasize critical thinking as students explore writing for specific purposes and audiences. Students will focus on the essay format, including a thesis statement, and review the use of topic sentences in paragraphs and transition devices used to tie paragraphs together.

ENG 091 Spelling and Vocabulary III
1 Credit
Prerequisites: ENG 061 or appropriate ASSET or COMPASS score

This course is designed for students as a review of spelling rules and development of a college preparatory vocabulary. This course emphasizes applying spelling rules and vocabulary to common writing experiences found at the college level.

ENG 097 Special Topics in English
1-6 Credits

This course is designed for students who need a customized program to develop basic writing skills.

ENG 115 Technical English
3 Credits

This course is designed to fit the written and oral communications needs of students in the vocational and technical fields. Students will practice their written, oral, reading, reasoning and interpersonal communication skills to become successful (or remain successful) in the workplace.

ENG 121 English Composition I (Core)
3 Credits
Prerequisite: A grade of "C" or higher in ENG 090

This course emphasizes the planning, writing, editing, and revising of compositions along with the development of critical and logical thinking and reading skills. Students write a minimum of five compositions that stress analytical, evaluative and persuasive/argumentative writing.

ENG 122 English Composition II (Core)
3 Credits
Prerequisite: A grade of "C" or higher in ENG 121

This course builds upon the objectives of English Composition I (ENG 121), and provides students with the skills and experience needed to write papers involving research. Students will learn to summarize, synthesize, evaluate, analyze and interpret information from primary and secondary resources. The course also emphasizes critical and logical thinking skills.

ENG 125 English Usage and Grammar
3 Credits

This course is designed to ensure that students achieve a high level of correct and concise sentence writing and instructs students in the understanding of principles of grammar, spelling, and punctuation. In addition, students will concentrate on achieving rhythm and style, acquiring precision in language use, understanding the principles of organizing ideas, providing adequate support and data, and drawing logical conclusions

ENG 131 Technical Writing
3 Credits

This course develops skills students can apply to a variety of technical documents and job needs. Students learn principles for organizing, writing and revising clear, readable documents for industry, business and government.

ENG 215 Playwriting
3 Credits

This course gives students 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 217 Business Communication and Report Writing
3 Credits
Prerequisite: Successful completion of a minimum of 3 credit hours of a 100-level English course or equivalent.

This course emphasizes effective business writing including letters, memoranda, reports, application letters and resumes. The fundamentals of business communication and international communication are introduced. This course is cross-listed with BUS 217 and may be taken as ENG 217 or BUS 217 but not both.

ENG 221 Creative Writing I
3 Credits
Prerequisites: A grade of "C" or higher in ENG 121

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 students' work.

ENG 222 Creative Writing II
3 Credits
Prerequisite: A grade or "C" or higher in 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 280 Special Topics: Advanced Composition
1-3 Credits
Prerequisite: A grade of "C" or higher in ENG 121

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.

ENT - 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, cogeneration, 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 students 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. The course also covers distribution from collectors to storage, and building, mechanical and plumbing codes as they apply to the solar industry.

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, and 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 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
Prerequisite:Limited to second-year students, permission of instructor

This course enables students to improve their basic solar construction skills, such as soldering, brazing, use of power tools, panel design and construction.

ENV - ENVIRONMENTAL SCIENCE

ENV 101 Introduction to Environmental Science
4 Credits
Co-requisite: ENV 101 LAB

This course introduces students 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.

ESL - 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. Students practice listening speaking for everyday survival, as well as preparation for higher-level ESL courses.

ESL 095 ESL Intensive
8 Credits

This is an intensive English program that prepares ESL students 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 five levels, including basic through advanced. Placement is determined on the first day of class.

FIW - FINE WOODWORKING

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 woodworking.

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. Students 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
Prerequisite:FIW 100

This course is intended to broaden the capabilities, speed and accuracy of the woodworker through the use of jigs and specialty tools. Students 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 116 Cabroile Leg and Queen Anne Furniture
1-8 Credits
Prerequisites: FIW 100 and 201

This course uses the Queen Anne style to teach the furniture maker to depart from rectilinear form and create curves and bends in wood. Patternmaking and building from drawings to create a chair, table, cabinet or similar piece is expected.

FIW 118 Lathe Turnings
1-4 Credits

This course 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
Prerequisites: FIW 100, 108 or 209, and 201

After completion of this course, students 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 students to experiment with knife and gouge to discover the many possibilities of wood decoration through carving and the qualities of numerous materials. Ultimately students 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 students to research the

wide variety of finishes available from the oldest formulations to the bewildering array of modern films and stains. The course 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
Prerequisites: FIW 100, 108 or 209, and 201
This course involves the planning, design, selection and purchase of materials, construction, finishing, and hanging of a door students have made. Assorted styles of door construction, joinery, glues and fabrication technique are examined.

FIW 150 Period Furniture Reproduction
1-8 Credits
Prerequisites: FIW 100, 108, 122 or 209, and 201
This course involves researching and selecting a period and style of furniture making from the biblical era to contemporary times and building a reproduction piece. Students 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 students become involved in their research.

FIW 200 Veneering and Marquetry
1-4 Credits
Prerequisite:FIW 100
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 201 Joinery
1-4 Credits
Prerequisite:FIW 100
This course explores different types of wood connections using both hand and power tool techniques in frame and carcass joinery. Students are expected to cut, fit and assemble projects to demonstrate their knowledge.

FIW 205 Tablemaking
1-8 Credits
Prerequisite: FIW 100
This course involves the study and construction of flat surface using one of the wide variety of potential styles, sizes, materials and techniques available. Solid and sheet goods are examined, as well as alternative construction methods and their various qualities. Fastenings, edging, and movement concerns are explored.

FIW 206 Chairmaking
1-8 Credits
Prerequisites: FIW 100 and 201
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 example. 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
Prerequisite:FIW 100
This course recognizes the need to repair and restore furniture and allows students to explore jigs, veneer repair, replacing broken pieces and reassembling reconditioned furniture. Students are expected to provide furniture of sufficient complexity to challenge their abilities. Joinery, carving, stripping and refinishing are other topics covered in this course.

FIW 209 Cabinetmaking
1-4 Credits
Prerequisite:FIW 100
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
Prerequisite:FIW 100
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 shop carpenter and includes jig and patternmaking; stationary power tool maintenance and adjustment; machining woods; and techniques unique to shops, cabinetmakers and mill workers.

FIW 213 Furniture Making
1-4 Credits
Prerequisites: FIW 100 and 201
This course teaches furniture design, construction techniques, material selection, joinery, bending, laminating, veneer work and casework details.

FIW 215 Advanced Joinery
1-4 Credits
Prerequisites: FIW 100, 108 or 209, and 201
This course examines all types of joinery from decorative to the most complex of hand and machine cutting techniques and 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 217 Advanced Cabinetmaking
1-8 Credits
This course expands the basic skills taught in FIW 209. The course includes a review of the types of joints, gluing and hardware used in cabinets. Students 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.

FIW 219 Woodworking Lab
1-8 Credits
Prerequisite:FIW 100 or CAR 152, and FIW 201
This course provides the opportunity for the experienced woodworker to expand his/her woodworking skills through the design and construction of a carefully selected woodworking project. In collaboration with the instructor, the student will create drawings, choose materials, resolve joinery techniques and estimate and construct the proposal. Emulation of a profitable woodworking business is part of this class experience and the ability to anticipate, plan, complete and work individually will be expected.

FMS - FACILITY MANAGEMENT

FMS 100 Basic Power and Hand Tools
2 Credits

This course introduces students 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 that allows students 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 students 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. This course includes field trips.

FMS 108 Building Systems II
4 Credits

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

FST - FIRE SCIENCE TECHNOLOGY

FST 100 Essentials of Firefighting (Firefighter I)
5 Credits
Co-requisite: FST 297-402
Prerequisite: FST 102, 103, 105, 106

This course is a classroom section in which the 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 students are not presently working in the fire service.

FST 101 Firefighter II Academy
5 Credits
Co-requisite: FST 297-403
Prerequisites: FST 100, 297

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 a 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

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 students 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. Students 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 students 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 students 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. Students are introduced to classes of building construction, occupancy hazards, protection systems and devices necessary to protect buildings and occupants from hazards to life and property.

FST 107 Hazardous Materials Operations
3 Credits

Students will study and analyze hazardous materials incidents, recognizing and identifying hazardous materials, planning response, implementing response procedures, decision making and continued evaluation at the awareness and operation level.

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. Students learn to identify any deficiencies students 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 students 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 students to introduce and maintain fire prevention awareness and educational programs for private industry, governmental agencies and 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
4 Credits

This course provides students with the knowledge and skills to handle low-and high-angle rescues using rescue rope and associated hardware. The course takes students from the introductory level up to advanced skills in three separate sessions. Belay, rappel and raising systems are taught in a real life setting in both high-and low-angle rescue environments. Students are also taught care and maintenance of equipment.

FST 150 Public Fire Prevention and Education
3 Credits

This course provides students 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 students with the knowledge and skills to safely operate emergency vehicles according to NFPA standards and meets all requirements for State Driver Operator Certification. Students 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 students 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. Students 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 Firefighting 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, students 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 students 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 introductory course provides insight into the management of a fire company. Management functions, decision making, ethics, communication, motivation, managing time and stress, report writing, basic budgeting, discipline and leadership skills are analyzed and discussed. Through the use of class discussion, examples taken from the experience of the instructor, class members and case studies, students will gain a basic knowledge of management and leadership skills required of a fire service company officer.

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 students 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 provides 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 and 297 or permission of instructor

This course provides insight into the basics of fire investigation. How to determine area and point of origin and cause and method of spread of fire are discussed. Recognition and preservation of evidence of arson, arson law, constitutional law, interviewing witnesses, court procedures and testimony are stressed.

FST 253 Incident Command/ Command of Major Incidents/ or EMP 109 online
3 Credits
Prerequisite: FST 202

This course explores the dynamics of managing major emergency incidents. The National Incident Command System is used 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 mere awareness. The course 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 students to current management practices and philosophies. Real world applications from the supervisor's viewpoint are 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.

FST 256 Fire Administration (Fire Officer III)
3 Credits

This course is designed to provide 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's 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 to 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; one year of wildland fire experience is preferred

This course introduces and develops supervisory and decision making skills for fireline management. Fireline safety, size-up, incident planning, ordering, tactics, strategies and administrative duties are covered. Four specific sections are taught: First Attack Incident Commander, Crew Supervisor, Incident Commander Multi-Resource and Task Force/Strike Team Leader. All four sections are certified through the Incident Command System under NIMS and recognized by the National Wildfire Coordinating Group.

FST 260 Intermediate Fire Behavior S-290
2 Credits
Prerequisite:Introduction to Wildland Fire Behavior

This course analyzes the effects of fuels, weather, topography and fire behavior on the wildland fire environment. The course is designed to instruct prospective fireline supervisors in wildland fire behavior for effective and safe fire management operations.

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 fireline 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 fireline tactics and fire behavior predictions.

FST 262 Advanced Firefighter S-131
1 Credit
Prerequisite:Qualified as a Firefighter Type 2 in the National Wildfire Coordinating Group system

This course provides the training needs for the wildland firefighter to become an Advanced Firefighter, Squad Boss and Incident Commander Type 5. The course discusses elements of the fireline handbook, safety issues and other topics important for this first level supervisor position.

FST 263 Powersaws S-212
2 Credits
Prerequisite:Certified as a firefighter Type 2 in the National Wildfire Coordinating Group System

This course is designed to teach the wildland firefighter the skills necessary to use, repair and maintain a chainsaw in the field. students will learn techniques to fell trees and buck material in a fireline operation.

FST 264 Helicopter Crew S-217
2 Credits

This course is designed to provide training needs of fire and non-fire personnel involved in project assignments with helicopters. The skills taught in this course will enable an individual to work with a helicopter in performing tasks common to all helicopter operations.

FST 265 Ignition Operations S-234
2 Credits
Prerequisite: Basic wildland fire course, intermediate fire behavior, qualified as a Squad Boss/Firefighter Type 1 based on National Wildfire Coordinating Group standards.

This course is designed to teach the wildland firefighter techniques in conducting firing operations. The focus of the course is on the duties and responsibilities in applying fire to the ground, the devices used, techniques and sequences, fire behavior descriptions, evaluations of the operation and safety concerns related.

FST 270 Basic Air Operations S-270
1 Credit
Prerequisite: FST 152 or equivalent

This course is the S-270 course offered by the National Wildfire Coordinating Group

(NWCG) to survey the uses of aircraft in fire suppression. It provides instruction on how to deal with management policy, regulations and procedures which govern agency aviation operations in fire suppression.

FST 290 Fire Science Advanced Topics
1-6 Credits

This series of courses is designed to encourage students to take advanced curriculum courses in areas of major concern to both the citizenry and the fire service. The credit earned from 290 courses are applied as elective credit only. Please see an advisor.

FST 297-401 Co Op Ed/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 students to gain experience and knowledge from on-the-job training. Positions are unpaid.

FST 297-402 Cooperative Fire Academy I**
4 Credits
Co-requisite: FST 100

This course is a drill ground program where hands-on practice of topics covered in FST 100 are used. 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
Co-requisite: FST 101

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

FST 299 Independent Study
1-6 Credits
Prerequisite: Permission of instructor

This course encourages students to study advanced topics in areas of major concern to both the citizenry and the fire service. The credits earned from 299 courses are 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 students an opportunity to get educational experience early in 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.

FRE - 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 (Core)
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 (Core)
5 Credits
Prerequisite: FRE 111 or permission of instructor

This course is a continuation of FRE 111. The course 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 (Core)
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 (Core)
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.

GED - GENERAL EDUCATION

GED 010 GEDPreparation
1-3 Credits
This course is for the student who needs review before doing GED preparation. Diagnostic tests determine skill level; help is available in writing skills, reading, and math.

GED 011 GEDPreparation
1-3 Credits
Prerequisites: GED 010 or a minimum score of 35 on individual GED pre-tests.
This course is for students who need to prepare for the GED Tests: Language Arts, Writing; Language Arts, Reading; Mathematics, Science, and Social Studies. A free GED Pre-Test is available.

GEO - GEOGRAPHY

GEO 105 World Regional Geography (Core)
3 Credits

This course introduces the spatial relationships 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.

GEOGRAPHIC INFORMATION SYSTEMS

See Geology

GER - 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 want 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 want 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 (Core)

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 (Core)

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.

GEY - GEOLOGY

GEY 111 Physical Geology (Core)

4 Credits

Co-requisite: GEY 111 LAB

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 (Core)

4 Credits

Co-requisite: GEY 121 LAB

This course studies the physical and biological development of the earth through the vast span of geologic time. The course 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 the human 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 human'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 140 Introduction to Global Positioning Systems

1 Credit

This course provides instruction on the use and application of hand-held global positioning sytems (GPS). Course topics include navigation, using a GPS with a topographic map, mapping geologic and man-made features using a GPS and exchanging information with computerized digital maps.

GEY 143 Geology and Evolution of Caves

2 Credits

This course is an introduction to the science of caves. Topics include cave formation and evolution, cave decorations (speleothems) and the adaptations of living organisms to life below ground. A one-day field trip to a nearby cave system is included.

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 classroom lectures are used to cover the material.

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 to the study area constitute the major activity of the course. The specific areas of investigation are indicated in the Class Schedule each time the course is offered.

GEY 235 Introduction to Geographic Information Systems

4 Credits

Co-requisite: GEY 235 LAB

This course introduces the theory and practice of creating and using computer-based geographic information systems. The course pro-

vides direct experience with the techniques used to access, develop, manipulate and display spatial data using computers.

GRAPHICS AND ANIMATION TECHNOLOGY

(See Multimedia Technology)

HHP - HOLISTIC HEALTH PROFESSIONAL

HHP 100 Complimentary Healing Methods

1 Credit

In this course the student will receive information about some of the more widely used alternative/complimentary healing methods. This is designed to expand the students' "health horizons" and enable the student to converse in a knowledge manner with patients, practitioners and friends about methods they may be using or want to explore.

HHP 103 Intro Circle of Healing

1 Credit

This class teaches students how to synthesize different energy methods to work as part of a healing group consensus of imagery to create the healing environment.

HHP 104 The Healing Mind

0.5 Credit

Unleash the power of your mind for healing, mental focus and improved memory. This course will explore scientific research as well as enhance mind/body communication skills.

HHP 110 Neurolinguistic Programming I

0.5 Credit

Neurolinguistic programming can increase the effectiveness of healing interventions by developing a clear, individualized communication pattern with each client, allowing for a desired change to occur. This course will also include a learning process called "anchoring." which is a gentle and respectful method of change for yourself and others.

HHP 122 Qi Gong Programming I

1 Credit

During this course the student will be introduced to the concept of Qi Gong and its associated 18 "soft exercises" for health and well being. An exploration of the movement patterns, ways circulation can be improved, and relaxation techniques will be introduced.

HHP 125 Feldenkrasis Awareness Through Movement ®

0.5 Credit

Awareness Through Movement is a series of lessons in how your body functions and how you can learn to use it more intelligently. Through gentle and exploratory movements, you can retrain your central nervous system and free themselves from habitual patterns of moving, thinking and feeling that contribute to stress and disease. Through increased body awareness, you can learn to move more easily during any activity, from vigorous sports to the way students breathe, stand and walk.

HHP 130 First Degree Reiki

0.5 Credit

This class provides understanding of the traditional Usui use of Reiki work, beginning in Japan, then Hawaii, the U.S. and the later Europe, is reviewed. Discussion of the fundamental beliefs and the dynamics of the Reiki process are included. Each participant receives four Reiki atunements in this class to prepare for the Reiki energy work. Each class member gives and receives a Reiki hands-on treatment session.

HHP 135 Accessing Inner Resources

1 Credit

This class will enable the student to learn how to access their inner resources to deal with everyday stress. Techniques such as mindfulness, art, music, breathing, imagery, writing and relaxation will be explored.

HHP 140 Accessing Inner Resources II

1 Credit
Prerequisite:HHP 135

In this class will explore how personal boundaries and other inner resources are necessary before a person can safely release and heal trauma.

HHP 145 Digestive Wellness

1 Credit

This course will provide the student with information on nutritional and herbal self-care treatments. You will learn to integrate a wellness based diet and lifestyle management.

HHP 160 Learn to Meditate

0.5 Credit

This class will enable the student to explore the process of meditation and the life-enhancing benefits of meditation - physiological, psychological and spiritual.

HHP 170 Introduction to Reflexology

1 Credit

This class is designed to teach the student foot anatomy, basic hand stroke techniques and foot reflex points. Reflexology is a gentle art that holistically facilitates opening the channels for healing energy to circulate to all parts of the body. The benefits of reflexology include stress reduction and deep relaxation, improved circulation, cleansing of body toxins and impurities, energy revitalization and preventative health care.

HHP 175 Soft Hands

1 Credit

The purpose of this course is to help students improve their communication through their hands while helping someone heal through touch. By enhancing awareness and interpretation of feelings, students will improve the quality of their receptive and expressive touch. The student will learn to increase their sensitivity, develop lighter touch/contact to invite better client response, and thereby improve the quality of the facilitator/client interaction.

HHP 180 Turaya Meditation

1 Credit

Tuyara Meditation is an all-encompassing process that aligns the student with his/her creative potential, thus helping the student to maintain their health. The Tuyara Meditation Master uses higher consciousness energy symbols to accelerate the students' movement into the void, going beyond to that still place where answers to your questions can be found. This class includes an introduction to the fundamentals of Inner Law and many opportunities to experience deep meditation.

HHP 190 Crystals and Mineral use in Healthcare

0.5 Credit

The student will be introduced to crystals, their properties and how to clear, clean and use for personal use or with clients. Hands on experience will allow the student to feel different energies of crystals and minerals.

HHP 202 Aromatherapy

0.5 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 used in this course.

HHP 203 Women's Holistic Health Care
0.5 Credit

This class is designed to aid the professional nurse to be a more knowledgeable consumer of gynecological health care and to better counsel, support, and encourage female patients toward personal empowerment and self-care.

HHP 205 Herbology
0.5 Credit

This class will explore the pharmicokinetics and composition of herbs and their effect on the body systems. In addition, the habitat, harvesting, storage and usage of a select group of herbs will be studied.

HHP 212 Neurolinguistic Programming II
0.5 Credit
Prerequisite: HHP 110 or permission of instructor

Neurolinguistic programming can increase the effectiveness of healing interventions by developing a clear, individualized communication pattern with each client allowing for a desired change to occur. This course will also include a learning process called "anchoring," which is a gentle and respectful method of change for yourself and others.

HHP 213 Spiritual Role in Health Care
0.5 Credit

Spirituality is explored, with focus on its development in individuals through the lifespan. The healing aspects of various religions with correlation to the energy system with Nightingale's thoughts are presented. Spiritual assessment and interventions for client care are covered.

HHP 214 Exploring Your Dreams
1 Credit

This class presents simple tools for dream recall, recording dreams and uncovering the many levels of meaning that are found in every dream. Students will evaluate their lifestyles and develop an individual concept of wellness and optimal health by tapping into their dreams as a source for reducing stress and increasing spirituality and inner growth.

HHP 215 The Role of Art in Healing
1 Credit

This course is designed to provide an overview of the role of visual art in healing. Content includes both didactic information and experiential learning. Participants will learn how the role of art in healing has evolved over the years and will explore different models, approaches and focuses of healing through visual art. A secondary goal of the course is to help students discover, through art, things about themselves which can enhance their professional work.

HHP 216 Humor Playshops: Put Fun to Work
0.5 Credit

Joy in the workplace is absolutely essential to motivate employees, combat low morale, increase productivity and boost the bottom line. Humor playshops will provide students with the tools to help disarm explosive situations, deal with hostile questions and improve team spirit. The goal is not to teach students to be funny, but to 1) help students see the value of humor in their daily practice and 2) use humor as both a tension reliever and a safety valve.

HHP 221 High Level Wellness
1 Credit

Positive dimensions of healthy lifestyles are explored in this practical, informative and enjoyable course. The student will acquire health concepts and management skills that are effective in a variety of work settings. Techniques to meet the basic needs of illness, prevention, and burnout will be covered. The student will have an opportunity to assess their present lifestyle and the specific steps needed to achieve positive change.

HHP 222 Self-Hypnosis: The Basics
1 Credit

Your body is only a robot controlled by your mind/brain. With this course, remove the mystery that surrounds hypnosis to help yourself.

HHP 223 Hypnosis for Medical Profession
1 Credit

This course is designed for EMTs, paramedics, nurses, operating room and emergency room personnel, or anyone in the medical profession who has patient contact. The student will learn how to increase the patient's chance of survival, lessen the side effects of drugs and treatments and help the healing process.

HHP 224 Massage Therapy
1 Credit

This course will teach hands-on techniques to complete a full body massage along with integration of healing touch. Swedish massage techniques and basic foot reflexology combined with a complete energy balance will be performed and experienced by each student. Guidelines for creating a nurturing, healing environment, and the use of lotions, oils, and aromatherapy will be discussed.

HHP 228 Solution Focused Counseling
0.5 Credit

Students will learn brief interventions, focusing on solutions. They will practice the effective, quick, Emotional Freedom Technique (EFT) to allow themselves and others to become "unstuck." EFT combines acupressure points with hypnotic phrasing. Students will also play Word Wizard, a delightful way to find options and become skilled with the language that opens opportunities.

HHP 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. Students learn assessment tools, basic counseling skills, and how to establish contacts and set goals for change, methods for evaluation and ongoing growth.

HHP 233 Womansoul and Healing
1 Credit

The history of our contemporary female experience spirals downward through the lives of our mothers, our aunts and our grandmothers to the physical matrix of our primordial first mother, the Earth herself. Together we will explore the multiple colors of our rich feminine tapestry. Through process, ritual and storytelling we will reweave the broken threads of the feminine, creating space for renewal and reaffirmation of the individual and collective Womansoul.

HHP 236 Dance Therapy and Healing
0.5 Credit

The American Dance Therapy Association defines dance therapy as "the psychotherapeutic uses of movement as a process to further the cognitive, emotional and physical integration of the individual." This workshop will introduce the theories of Marian Chace/Group Development, Balanche Evan/Creative Movement and Mary Whitehouse/Authentic Movement. Dance therapy principles can be applied to all caregiver interactions in which professionals want to increase empathy and communication. Participants should come dressed in loose, comfortable clothing. No prior movement experience is necessary.

HHP 241 Healing Imagery: Body, Mind, Spirit
0.5 Credit

This course explores the ancient practices of Shaman healers, as well as the clinical research on healing imagery. Students develop their own creative imagination for personal and professional growth. Students also learn effective techniques which accelerate healing and develop insight.

HHP 242 Healing Touch Level I
1 Credit

Healing Touch is an energy based therapeutic approach to healing. Participants will learn to develop and use touch as a means of assessing a clients and patients state of wellness through the intentional use of touch. Participants will be given specific instructions in developing touch sensitivity and will practice the assessment and healing methods. Healing Touch is a multi-level program that moves from beginning to advanced practice. After completion of Level 3, a person is eligible to apply for certification as a healing touch practitioner.

HHP 244 Holistic Nursing Level I
1 Credit

The conscious application of self-responsibility, caring, human development, stress, lifestyling, communication, problem solving, teaching and 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.

HHP 246 Second Degree Reiki
1 Credit

This course teaches the meaning of the three traditional Usui symbols. In-depth discussion about application of the three symbols is covered. Students learn about the necessary preparation of a Reiki therapist in offering treatments. One atunement is given to each student. Each member gives and receives a Reiki treatment session, using the three Reiki symbols. Long Distance and Mental Reiki processes are learned. Reiki Therapist Certification is available upon completion.

HHP 249 Journaling the Healing Journey
1 Credit

The journal is an effective tool for looking at our personal growth process, as well as for helping clients in their healing process. Journaling helps develop memory, imagination, feeling, intuition and many other creative aspects of ourselves. Using a journal in your health practices can accelerate the healing process for clients. This class will teach journaling skills and how to focus specifically on healing through various techniques.

HHP 251 Music as a Therapy for Wellness
1 Credit

This course is 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.

HHP 252 Menopause: Traditional and Natural Approaches
0.5 Credit

This course addresses the process of physical, emotional, mental and spiritual symptoms. Discussions focus on traditional hormone therapy as well as alternative therapies including nutrition, natural hormones, Chinese medicine, acupuncture, herbology and biofeedback. Health care risk before and after menopause also are addressed.

HHP 254 Holistic Nursing Level II
2 Credits
Prerequisite:HHP 244

Using basic theory from HHP 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.

HHP 256 Holistic Nursing Level III
2 Credits
Prerequisites: HHP 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 programbefore taking this course. Students identify their own project, write a projects proposal and present a final report to the class. This course assists students in developing leadership and teaching skills in the health care community.

HHP 258 Journaling - Spiritual Journey
1 Credit

The spiritual is an evolution in who people think they are and in what they believe about their purpose. Spiritual writing expands the consciousness and the universe responds by using writing as a channel a way to interact with the direction of people's lives. 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.

HHP 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 mental and physical health.

HHP 267 Living Without Limits
0.5 Credit

This course describes steps that can be taken to clarify goals, get support for challenges and act effectively. This course also explores the qualities of "optimal performers" and how to let go of distractions by understanding the importance of being true to oneself.

HHP 269 Healing Presence
1 Credit

This course explores the meaning of healing presence through the process of increased self-awareness and self-discovery. The course also develops skills for connecting on a higher level with oneself and others. The course focuses on experiencing the healing presence with oneself and the essence of the healing presence with others.

HHP 270 Advanced Reflexology
1 Credit

As a continuation of the basic reflexology course, advanced reflexology will allow the student to work on hand positions and address specific techniques for specific issues. This course is mostly hands-on with an emphasis on developing techniques. Please bring pillows, towels, and lotion to class.

HHP 276 Creating Healthy Relationships
1 Credit

This class explores how to create and nurture a relationship, first with ourselves and then with others, to expand our personal potential and enjoyment.

HHP 287 Create Holistic Practice
0.5 Credit

This course teaches the skills necessary to start an independent practice. The course includes self-assessment of professional skills, the business plan for marketing and finance and the actual design of the practice.

HIS - HISTORY

HIS 101 Western Civilization I (Core)
3 Credits

This course surveys a number of events, trends, peoples, groups, ideas and institutions that have shaped Western Civilization from the prehistoric era to 1650. The course reflects the multiple perspectives of gender, class, religion and ethnic groups. A principle focus of this course is on developing, practicing and strengthening the skills historians use while constructing knowledge in this discipline.

HIS 102 Western Civilization II (Core)
3 Credits

This course surveys a number of events, trends, peoples, groups, ideas and institutions that have shaped Western Civilization from 1650 to the present. The course reflects the multiple perspectives of gender, class, religion and ethnic groups. A principal focus of this course is on developing, practicing and strengthening the skills historians use while constructing knowledge in this discipline.

HIS 116 The Native American Experience
3 Credits

This course is an introduction to the Native Americans' 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 political, social and economic developments, international relationships, scientific breakthroughs and cultural trends that have shaped the various global regions and nation-states from 1900 to the present. Emphasis is placed on the interactions of global regions and nation states.

HIS 201 United States History I (Core)
3 Credits

This course surveys events, trends, peoples, groups, cultures, ideas and institutions in North American and United States history, including the multiple perspectives of gender, class and ethnicity, between the period when Native Americans were the sole inhabitants of North America and the American Civil War. A principle focus of this course is on developing, practicing and strengthening the skills historians use while constructing knowledge in this discipline.

HIS 202 United States History II (Core)
3 Credits

This course surveys events, trends, peoples, groups, cultures, ideas and institutions in United States history, including the multiple perspectives of gender, class and ethnicity, between the American Civil War and the present. A principal focus of this course is on developing, practicing and strengthening the skills historians use while constructing knowledge in this discipline.

HIS 215 Women in U.S. History
3 Credits

This course surveys women's changing roles in American history from the pre-colonial period to the present. Special emphasis is placed on the nature of women's work, gender relationships and the participation of women in the family, political, religious and cultural activities 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 the mountain men, the gold rush, railroad builders, the cattlemen and farmers, the silver boom, the tourists and the modern state.

HIS 236 Contemporary United States History
3 Credits

This course surveys the major political, economic, social and cultural developments that have shaped modern 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.

HUM - 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 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 noncanonical 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 (Core)
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 students to the history of ideas in Western cultures. The course emphasizes connections among the arts, values and diverse cultures.

HUM 122 Survey of Humanities II (Core)
3 Credits

This course examines the Medieval, Renaissance and Baroque periods through a study of the visual arts, literature, music and philosophy. The course compares and contrasts diverse cultural ideas and feminine and masculine viewpoints.

HUM 123 Survey of Humanities III (Core)
3 Credits

This course examines the cultures of the 17th through 20th centuries by focusing on the interrelatedness of the arts, ideas and history. The course 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 Mexico 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 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 topics.

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 lifestyles.

LIT - LITERATURE

The prerequisite for all literature courses is a COMPASS reading score of 70+ and a writing score of 75+.

LIT 115 Introduction to Literature (Core)
3 Credits

Literature 115 provides an overview of literature, including short fiction, poetry and drama. The course emphasizes careful reading, analysis, interpretation and understanding of the works and their cultural and historical backgrounds. Critical thinking, discussion and writing about significant works of literature are used as tools 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. The course 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. The course 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. The course 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 145 Women in Literature and Society
3 Credits

This course provides a review of significant world literature from the standpoint of depiction of women in literature as a reflection of women's roles in society. Students will examine culturally and historically the techniques and themes in various genres of literature by and about women. This course emphasizes careful reading, analysis, interpretation, and understanding of the works. Critical thinking, discussion, and writing heightens students' awareness of women's issues as part of the human condition.

LIT 201 Masterpieces of Literature I (Core)
3 Credits

This course examines significant writings in world literature from the Ancients through the Renaissance. The course 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 (Core)
3 Credits

This course examines significant writings in world literature from the Enlightenment through the present. The course 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 19th century Romantics. The course explores ideas, historical and social contexts and 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-19th century through the present. The course 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. The course 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. The course explores ideas, historical and social contexts, themes and literary characteristics of works in various genres by major writers.

LIT 225 Introduction to Shakespeare
3 Credits

This course covers the history of the Elizabethan Period in England and the life of William Shakespeare. Students will have an opportunity to study Shakespeare's poetry and several of his plays.

LSE - LEARNING SKILLS ENHANCEMENT

LSE 100 Learning Skills Enhancement
1 Credit
Co-requisite: Students need to be concurrent-

ly enrolled in one of the disciplines described below to receive tutorial assistance

This course is designed for students in need of instructional assistance in math, chemistry, physics, economics, English, literature, foreign language and writing. Students may receive access to computerized tutorial assistance, in addition to World Wide Web access.

MAN - 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 students 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 students 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. The course emphasizes the study of recruiting, interviewing, selecting, placement, training and evaluating. Topics include job descriptions, orientation, remuneration, promotion and transfers, benefits, grievances and union-management relations. (Fall only)

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 that may be used in various situations, such as business policies, accepted business practices, contracts, purchases, labor union contracts, pay raises and starting salaries. (Spring only)

MAN 215 Organizational Behavior
3 Credits

This course provides students with an understanding of the way people behave in business organizations and how that behavior can be influenced. This course shows students 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. (Spring only)

MAN 225 Managerial Finance
3 Credits
Prerequisites: ACC 121, 122, ECO 201

This course examines the concepts and techniques used to analyze financial accounting information for managerial planning, decision making and control. Students also will explore the concepts and techniques used for funds-flow management and for short-, intermediate-, and long-term financing. (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 many four-year institutions provided that students complete the prerequisites (ACC 121, ACC 122, BUS 226 and either ECO 201 or ECO 202) and have sophomore standing before enrolling in MAN 226.

MAR - MARKETING

MAR 111 Principles of Sales
3 Credits

This course enables the student to understand and develop proper sales techniques. The course covers the role of selling in the marketing process, consumer behavioral consideration in the buying-selling process, and sales techniques. This course requires a minimum of 45 hours of work and carries three credit hours. Students should expect to spend 60-90 hours on this course.

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 many four-year institutions provided that students complete the prerequisites (ACC 121, ACC 122, BUS 226 and either ECO 201 or ECO 202) and have sophomore standing before enrolling in MAR 216.

MAR 220 E-Marketing
3 Credits

As the arenas of information technology and the Internet have evolved, new marketing strategies have emerged. This course examines traditional marketing concepts of buying, behavior, promotion, production and others, then redefines them as they apply to marketing in the technological age, in the global economy and on the World Wide Web. Web fundamentals, e-marketing trends, strategies, models and research are examined.

MAT - MATHEMATICS

MAT 030 Fundamentals of Math
2 Credit
Prerequisite:COMPASS Pre-algebra score of 0-23

This course includes the vocabulary, basic operations and applications of whole numbers, decimals, and introduction to English and metric measurement, and an introduction to areas and perimeters.

MAT 060 Pre-Algebra
3 Credits

This course is for students who need a comprehensive review of arithmetic. Topics include the whole numbers, fractions and decimals; percentages; proportion; operations with signed numbers and equations.

MAT 090 Introductory Algebra
4 Credits
Prerequisite: MAT 055 (Pre-algebra) or Placement Test

This course includes operations and applications using integers, variable expressions including integer exponents and properties of real numbers, linear equations and inequalities, factoring, real number systems, polynomials and factoring polynomials. Rational expressions, quadratic equations, coordinate

geometry, systems of linear equations, and inequalities and applications are introduced.

MAT 109 Survey of Algebra

4 Credits
Prerequisite: MAT 065 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 Career Mathematics

3 Credits
Prerequisite: MAT 090 with a grade of C or better or assessment

This course is designed for career technical students who need to study particular mathematical topics. Topics may include arithmetic review, calculator usage, algebra, geometry, trigonometry, graphs and finance. These are presented on an introductory level and the emphasis is on applications. The specific topics covered are selected to meet the needs of the student enrolled in the course.

MAT 139 Technology Lab for Algebra

1 Credit
Prerequisite:MAT 065 or Placement test

This course is intended for students who have little or no background in using a graphing calculator. Topics include basic arithmetic, finding solutions to linear equations and linear inequalities, graphing linear and quadratic equations, solving systems of linear equations by graphing and matrices and programming.

MAT 160 College Algebra (Core)

4 Credits
Prerequisite: MAT 109 with a grade of "C" or better or equivalent
Requirement: A graphing calculator

This course is an in-depth study of functions and their applications. The course 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 161 College Trigonometry

3 Credits
Prerequisite: MAT 160 or permission of instructor
Requirement: A graphing calculator
Delivery Method: Traditional Classroom, Self Directed

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.

MAT 166 Pre-Calculus

5 Credits
Prerequisite: MAT 160 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 students require a slower-paced approach, students are encouraged to take MAT 160 and MAT 161.

MAT 170 Finite Mathematics

4 Credits
Prerequisite: MAT 109 (Intermediate Algebra)

This course is primarily for business, life science or social science majors. Topics include functions, matrix algebra, linear programming, financial formulas, 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 171 Survey of Calculus (Core)

4 Credits
Prerequisite: MAT 160 or MAT 170 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 175 Introduction to Statistics (Core)

3 Credits
Prerequisite: MAT 109 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 (Core)

5 Credits
Prerequisite: MAT 160 and MAT 161 with a grade of "C" or better; or equivalent
Requirement: A graphing calculator

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 (Core)

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 204 Calculus III with Special Topics

5 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 204 with a grade of C or better or permission from the instructor.
Requirement: A graphing calculator

This course includes an introduction to the theory of vector spaces, linear transformations, matrix representations, eigenvalues and eigenvectors. (Spring only)

MAT 261 Differential Equations with Topics
4 Credits
Prerequisite: MAT 204 or permission of instructor

Requirement: A graphing calculator

The primary emphasis in this course is 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.

MOT - MEDICAL OFFICE TECHNOLOGY

MOT 102 Medical Terminology
2 Credits

This class is an introduction to medical terminology. It covers the origin and structure of medical terms and enables students to interpret and pronounce medical terms used in various related areas.

MOT 104 Law and Ethics
2 Credits

This class explores the application of medical legal concepts for health careers and establishes a foundation for ethical behavior and decision-making.

MOT 105 Anatomy and Physiology
4 Credits
Prerequisite:MOT 102 recommended

This non-laboratory course is designed to provide the basics of anatomy and physiology for health care workers. Structural and functional components of each body system are emphasized.

MOT 110 Medical Office Administration
4 Credits

This course is designed specifically for the medical office. It introduces students 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. (Fall)

MOT 120 Financial Management
3 Credits
Co-requisite: BTE 102
Prerequisite: MOT 102, MOT 105, MOT 110

This class focuses on the practical uses of accounts and records with an emphasis on accounting principles and analysis for use in a medical office. (Fall)

MOT 130 Insurance Billing
3 Credits
Prerequisite: HEO 100 or HEO 104

This course is designed to instruct the student 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. (Spring)

MOT 136 Introduction to Clinical Skills
2 Credits
Prerequisites: MOT 102 or MOT 105

This class provides hands-on experience with the basic skills required for assistance with patient care. Delivers the theory behind each skill presented as well as proper techniques for performing each skill. Includes regulations regarding bloodborne pathogens, universal precautions, OSHA, and medical asepsis. (Spring)

MOT 138 Laboratory Skills
4 Credits
Prerequisite:MOT 102, MOT 105.

This class introduces the student to routine laboratory skills and techniques for collection, handling, and examination of laboratory specimens often encountered in the ambulatory care setting. Emphasizes hands-on experience. (Spring)

MOT 140 Clinical Skills
2 Credits
Prerequisites: MOT 102, MOT 105, and MOT 136

This class provides hands-on experience with the basic clinical skills required for assisting with patient care. This class will explore the theory, procedures, and proper techniques. OSHA requirements regarding bloodborne pathogens, medical asepsis, regulations, and universal precaution will also be explored. (Spring)

MOT 150 Pharmacology Practice
3 Credits
Prerequisites: MOT 102 and MOT 105 or equivalent

This course covers the classifications, indications, actions, side effects and administration of medications. Dosage calculations and conversions are also presented.

MOT 155 Disease Processes
2 Credits

Prerequisite:MOT 102, MOT 105.

This course focuses on the human body and the consequences of a disruption of body processes. Anatomy and physiology of body systems will be reviewed along with testing and other data associated with documentation of specific disease processes will be emphasized.

MOT 184 Administration Internship
2 Credits
Prerequisite:All required course work must be completed prior to enrolling in the internship.

Provides supervised unpaid placement in a contracted facility for guided experience in application of knowledge and skill acquired in the classroom.

MOT 186 Clinical Internship
3 Credits

Prerequisite: All required course work *must be completed prior to enrolling in the internship.*

Provides supervision in a contracted facility for guided experience in application of knowledge and skill acquired in the classroom.

MOT 188 Medical Assisting Internship
5 Credits
Prerequisite: All required course work must be completed prior to enrolling in the internship.

Provides supervised unpaid placement in a contracted facility for guided experience in application of knowledge and skill acquired in the classroom. The student assists with a variety of business and clinical procedures.

MOT 205 CMA Exam Review
1 Credit
Prerequisite: Completion of Medical Assisting AAS or certificate program

This course establishes a foundation in outpatient coding in order to complete a correct HCFA-1500 form using ICD-9-CM, CPT and HCPC codes. The course informs student what documentation is needed to justify those codes, the problems of incorrect coding and how to manage third party requirements and reimbursements. (Spring)

MSR - MILITARY SCIENCE

MSR 103 Adventures in Leadership I
2 Credits
Co-requisite: Leadership Lab. (2 hrs./week), physical training (3 hrs./week)

This course familiarizes students with the organization and role of the Army, leadership

doctrine, land navigation, first aid, communication skills and ethical problem solving. It provides students with knowledge about what career opportunities are available as an Army Officer in either the active or reserve component. No Army obligation is incurred in taking this course.

MSR 104 Adventures in Leadership II

2 Credits
Prerequisite:MSR 103
Co-requisite: Leadership Lab. (2 hrs./week), physical training (3 hrs./week)

This course continues to focus on the Army's leadership doctrine, land navigation, First Aid and communication skills. It teaches students how to function as a member of a team and introduces small unit military operations, and provides students with knowledge of what career opportunities are available as an Army officer in either the active or reserve component. No Army obligation is incurred in taking this course.

MSR 203 Adventures in Leadership III

2 Credits
Co-requisite: Leadership Lab. (2 hrs./week), Prerequisites: MSR 103 and MSR 104 or permission of instructor, physical training (3 hrs./week)

This course provides a basic foundation in leadership fundamentals as well as the basic military training foundations necessary to enter the U.S. Army Reserve Officer Training Corps (ROTC) Advanced Course. It familiarizes students with the organization and role of the Army, and provides a concept of career and training opportunities that are available as any Army officer in either the active or reserve component to assist students in deciding to enter the Advanced Course program. No Army obligation is incurred in taking this course.

MSR 204 Adventures in Leadership IV

2 Credits
Co-requisite: Leadership Lab. (2 hrs./week)
Prerequisite: MSR 103, MSR 104, MSR 203 or permission of instructor, physical training (3 hrs./week)

This course provides a basic foundation in leadership fundamentals as well as the basic military training foundations necessary to enter the US Army Reserve Officer Training Corps (ROTC) Advanced Course. It familiarizes students with the organization and role of the Army, and provides a concept of career and training opportunities that are available as an Army officer in either the active or reserve component to assist students in deciding to enter the Advanced Course program. No Army service obligation is incurred in taking this course.

MTD - MULTIMEDIA TECHNOLOGY DESIGN

MTD 101 Intro. to Computers for Graphics

3 Credits

This course introduces the student to the computer system developed for graphics. The student will learn the hardware and software components for multimedia production. Each student will explore basic computer operations, ergonomics, file management, scanning techniques, archiving capabilities, and utilization of the multimedia department server and internet connection.

MTD 102 Intro. to Multimedia

3 Credits

Prerequisite or co-requisite: MTD 101

This course introduces the types of equipment and technical considerations used in multimedia productions and the multimedia professions. It focuses on current types of equipment such as scanners, printers, digital cameras and computers. Students gain hands-on experience in how
the technology is utilized for input and output in production and design projects. Overview of software for multimedia will be explored.

MTD 103 Production Design

3 Credits

Prerequisite or co-requisite: MTD 101

This course explores the use of tools, computer graphics techniques and design principles to produce professional graphic designs. Studies include printing basics, typography and digital color systems. Students use creative thinking to solve communication and design concepts for the output process.

MTD 111 Adobe Photoshop I

3 Credits

Prerequisite or co-requisite: MTD 101

This course concentrates on the high-end capabilities of a raster photo-editing software as an illustration, design and photo retouching tool. Students explore a wide range of selection and manipulation techniques that can be applied to photos, graphics and videos.

MTD 112 Adobe Illustrator I

3 Credits

Prerequisite or co-requisite: MTD 101

This course acquaints students with the processes of a vector drawing program on the computer. Students learn how to use the tools to create digital artwork that can be used in Web design, print media and digital screen design.

MTD 113 QuarkXPress

3 Credits

Prerequisite or co-requisite: MTD 101

This course introduces students to QuarkXPress, a digital page layout tool. Students 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.

MTD 114 Adobe InDesign

3 Credits

Prerequisite: MTD 103

This course introduces students to InDesign, a page layout program which integrates seamlessly with other Adobe design programs. InDesign delivers creative freedom and productivity to DTP. Class discussions and independent projects supplement hands-on classroom work.

MTD 115 Digital Photography I

3 Credits

Prerequisites: MTD 111

This course analyzes acquisition and manipulation of digital images. Students study traditional photography methods of weaving contrast, sharpness, color, and composition together within the limitations of computer technology. The practical aspects of setting up a shoot, equipment needs, and camera controls will be discussed. Students examine such things as color correction, restoration, colorizing and archiving digital images.

MTD 118 Digital Color Theory

3 Credits

Prerequisites: MTD 111 or MTD 112

This course covers color theory as it relates to multimedia. The psychology of color is taught as well as how to effectively design with color. Students learn how to correct color photographs and create color separations. Color scanning technology is also covered.

MTD 121 Painter for Digital Media

3 Credits

Prerequisite: MTD 111 or MTD 112

This course teaches students how to work with an illustration and paint software appli-

cation called Painter. Color and relationships, repeat patterns, animation and digitization are among the topics covered in the course as students explore the possibilities of visual art using computers. Assigned projects cover a wide range of visual approaches. Painter provides an extra competitive edge for students.

MTD 122 Sculpting for Digital Media
3 Credits

Prerequisite: MTD 152

This course introduces students to conceptualization of surface coloration, painting and manipulation of 3D objects and environments. Students will construct sculptures using organic, inorganic, abstract, and realistic subject matter. Operating a 3D scanner, students will digitize a sculpture and bring the electronic file into a computer animation application for manipulation.

MTD 123 Bryce
3 Credits

Prerequisite: MTD 111

This class will exploit the unique abilities of MetaCreations Bryce for creating photo realistic natural scenes in 3D. Students will learn the tools, techniques and concepts involved in the use of the software. Additionally, students will study the works of premiere Bryce artists and create numerous images and animations of their own. Emphasis will be placed on structure, composition, lighting and color theory.

MTD 128 Multimedia Hardware
3 Credits

Prerequisite: MTD 101

This class will teach the principles and techniques of maintaining, upgrading, and customizing personal computer systems. Emphasis will also be placed on various emerging and established technologies related to graphic computing.

MTD 141 Web Design I
3 Credits

Prerequisite: MTD 111 or MTD 112

This course introduces the fundamentals of HTML syntax using a simple text editor to create a Web page. Web-safe colors and the use of graphic editors will be explored. Students study Web aesthetics and intuitive interface design. The course emphasizes file organization and layout including tables and frames.

MTD 143 Web Motion Graphic Design
3 Credits

Prerequisite: MTD 112 and MTD 141

This course will stress creation of animated GIF's and dynamic, interactive media for Web applications. Students will learn how to draw objects, create symbols, and assemble motion tweens.

MTD 145 QuickTime Technologies
3 CreditsPrerequisite: MTD 111 and MTD 141

This course introduces students to current QuickTime technologies for Web applications. Students will prepare panoramic and object QTVR content, streaming audio and video in QuickTime format. Students will publish digitized video and audio in Web pages on a streaming server.

MTD 151 Character Development
3 Credits

Prerequisite: MTD 101

This course introduces character development and transitions from one media to another. Students learn the foundational skills necessary to create the illusion of life for sketched characters. Students will use the traditional medium of paper and pencil to turn their ideas into visual treatment for creating animatics by use of a light box and computer. Character development and storyboarding by script are emphasized.

MTD 152 3D Animation
3 Credits

Prerequisite: MTD 111 or MTD 112

This course is an introduction to the art of 3D storytelling through movement. Traditional and computer techniques are discussed. Students produce animations and transfer them to various visual media.

MTD 153 Character Animation I
3 Credits

Prerequisite: MTD 111 and MTD 152

This course encompasses all major aspects of creating 3D characters using animation software. Using developed characters, the student will learn how to animate for personality.

MTD 155 LightWave I
3 Credits

Prerequisite: MTD 152

This course introduces students to LightWave's Modeler program with an emphasis on modeling techniques. It also touches on LightWave's Layout program for setting up scenes with texture maps and lighting. There will also be instruction on how to import models from other programs.

MTD 161 Director I
3 Credits

Prerequisites: MTD 111

This course examines Macromedia Director, the leading authoring tool for interactive multimedia from the art director's perspective. Students will learn the basics of 2D animation for both computer presentations and the Web. Interface design and scene development are emphasized. Hands-on projects include lingo scripts, behaviors, adding sound and digital video to student's movies.

MTD 163 Sound Design I
3 Credits

Prerequisite: MTD 101 or MTD 161

This course explores the use of sound in multimedia production and audio storytelling. Students examine the principles of recording. Classes focus on how sound can enhance interactive productions and improve computer presentations. Students learn how to use the computer as a full audio editing studio.

MTD 171 Digital Video Editing I
3 Credits

Prerequisite: MTD 101 and MTD 111

This course is an introduction to digital nonlinear video editing. Students will capture, compress, edit, and manipulate video images using a personal computer. Assembly techniques including media management, editing tools, titles, and motion control; transitions and filters, and special effects are explored.

MTD 172 After Effects I
3 Credits

Prerequisite: MTD 111

The course provides the fundamental techniques for creating digital motion graphics such as 2D animations, animated logos, video graphics, etc. Classes cover relevant tools and techniques as well as industry standards, delivery methods and output.

MTD 174 Game Design I
3 Credits

Prerequisite: MTD 152 and MTD 161

This course introduces students to game design from conceptual development and functionality, through production of a virtual world prototype. Students examine such things as character registration, in-betweens, inking and clean up used for creating real-time game environments. Storytelling and visual metaphor development are emphasized.

MTD 211 Adobe Photoshop II
3 Credits

Prerequisite: MTD 111 or equivalent experience

This course develops and reinforces image composition techniques learned in MTD 111. Fundamentals are continuously reinforced as new design techniques are introduced.

MTD 212 Adobe Illustrator II
3 Credits

Prerequisite: MTD 112

This course enables the student to continue development of digital drawing skills through practice and use of state-of-the-art design illustration software learned in MTD 112.

MTD 213 Electronic Prepress
3 Credits

Prerequisite: MTD 113 or MTD 114

This course explores in detail the electronic prepress process. Students examine steps for preparing a digital file for trapping, output considerations and proofing techniques. Creating effective electronic designs and efficient use of today's software programs are also covered.

MTD 215 Digital Photography II
3 Credits

Prerequisites: MTD 115

This course is a continuation of the beginning digital photography class. This class will look at digital photography in terms of design, color, lighting and visual composition. Course topics emphasize these aesthetics for overall thematic effects and production processes for professional digital photographers.

MTD 241 Web Design II
3 Credits

Prerequisite: MTD 141

This course expands on previously learned fundamentals of HTML introducing cascading style sheets, DHTML, JavaScripts and CGI forms. Color usage and interface design principles are emphasized in this course. In this course we'll examine Web sites that employ more complex structures, optimal site architecture and navigation necessary for larger and more complex sites.

MTD 246 Web Scripting
3 Credits

Prerequisite: MTD 141 and MTD 142

This class is targeted toward multimedia authors who wish to add database management and search functionality to their Web sites.

MTD 247 Web Data Base
3 Credits

Prerequisite: MTD 142 and MTD 246

This course stresses scripting languages used to create and manage Web databases. The course is targeted toward multimedia authors who wish to add database management and search functionality to their Web sites. Students will build an inexpensive, portable database solution.

MTD 253 Character Animation II
3 Credits

Prerequisite: MTD 111 and MTD 152

This course addresses more advanced aspects of creating 3D characters on the computer. Students also examine facial animation, lip synchronization, scene design and lighting set-ups.

MTD 255 LightWave II
3 Credits

Prerequisite: MTD 155

This course further examines LightWave's Layout program with an emphasis on animation and animation techniques. It also touches on LightWave's Layout program for setting up scenes with advanced procedural texture maps and lighting.

MTD 261 Director II
3 Credits

Prerequisite: MTD 161

This course explores the interactive process within all areas of program design, courseware authoring, delivery techniques and instruction strategies. Students are introduced to advanced Lingo scripting to provide more interactive capabilities.

MTD 263 Sound Design II
3 Credits

Prerequisite: MTD 163

This course focuses on the application of sound with various multimedia software applications. Principles and techniques include MIDI orchestration and sequencing, digital multitrack recording and production, working with musicians and other talent, sound effects layering, integrated audio system production, and advanced audio mixing/sweetening. The student will explore synchronization techniques of audio with moving pictures, graphics, and animation.

MTD 271 Digital Video Editing II
3 Credits

Prerequisite: MTD 171

This course looks at the more complex and advanced techniques of digital video editing. Areas of editing such as masking, filtering, blue/green screening, track mattes, and image mattes will be examined. Students will produce a movie project in this class and discuss practical ways to distribute to various audiences.

MTD 272 After Effects II
3 Credits

Prerequisite: MTD 172

This course provides advanced skills and techniques for creating digital motion graphics. The course covers relevant tools and techniques as well as industry standards, specialized techniques, and additional tools and resources.

MTD 273 DVD Authoring
3 Credits

Prerequisite: MTD 161 and MTD 171

This course introduces students to all aspects of DVD authoring; covering source acquisition, DVD production, interface design, organization, management and appropriate DVD output solutions.

MTD 274 Game Design II
3 Credits

Prerequisite: MTD 174

This course explores more advanced features of game design. Students examine such things as integration of mainline code, subroutines and interrupts into game structure. I/O structure, playtesting and distribution are emphasized.

MTD 277 Multimedia Special Topics
3 Credits

Prerequisite: Permission of Instructor

This course provides an opportunity to examine new technology and advanced techniques in computer art.

MTD 282 Internships
3 Credits

Prerequisite: Permission of Advisor

This provides an opportunity for students to experience on-the-job shadowing and interacting with experts in their field of interest. Students intern at local professional businesses to prepare for the transition from student to professional.

MTD 285 Independent Study
3 Credits

Prerequisite: Permission of instructor

Independent study provides students an opportunity to teach themselves new technology skills not already taught in the classroom. Qualified instructors provide one-on-one outcome objectives review and oversee student progress.

MTD 286 Graphic Design Production
3 Credits

Prerequisite: Permission of Instructor

This course provides an opportunity to combine several draw and paint applications into one design and layout class. Students explore advanced techniques in creating and designing computer art.

MTD 287 Animation Production
3 Credits

This course examines development of 3D animation 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. The student will produce a 3D animation project.

MTD 288 Web Design Production
3 Credits

This course stresses Web site development and usability issues, as well as, pre-production, production and post-production concepts. Students will prepare project evaluations, objectives and analysis reports, project budgets, time-lines, content outlines, storyboards, and flow charts. Students will also examine interactive interface design for several Web applications. Projects will vary from semester to semester.

MTD 289 Management and Production
3 Credits

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.

MUS - MUSIC

MUS 100 Fundamentals of Music Theory
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 105 Introduction to Electronic/Computer Music
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 110 Music Theory I
3 Credits
Prerequisite: MUS 110 or permission of the instructor

This course and lab is a continuation of MUS 100 and resembles the Music Theory I course offered for university music school majors. Students learn to integrate theory. and analyze. Two-, three- and four-part writing 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. The course emphasizes the development of tools for intelligent listening and appreciation.

MUS 121 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 125 History of Jazz Music
3 Credits

This course reviews the history of jazz in America and provides basic listening skills for the understanding and appreciation of jazz music.

MUS 141 Private Instruction: Voice
(1st year, 1st term)

Private instruction consists of an individual lesson per week, with participation in studio classes and performance in a student recital. The course presents theory, repertory, and technique of the student's chosen instrument in order to achieve a basic understanding of that instrument. The student's progress, a result of practice and performance level, will determine the specific course content.

MUS 141 Private Instruction: Guitar
(1st year, 1st term)

MUS 141 Private Instruction: Piano
(1st year, 1st term)

MUS 142 Private Instruction: Voice
(1st year, 2nd term)

MUS 142 Private Instruction: Guitar
(1st year, 2nd term)

MUS 142 Private Instruction: Piano
(1st year, 2nd term)

MUS 143 Private Instruction: Voice
(1st year, 3rd term)

MUS 143 Private Instruction: Guitar
(1st year, 3rd term)

MUS 143 Private Instruction: Piano
(1st year, 3rd term)

MUS 151 Chorus Ensemble
(1st year, 1st term)
1 Credit

This course is open to students at all vocal levels. Concerts are performed every semester and are designed to include a wide variety of music.

MUS 152
Ensemble: Chorus (1st year, 2nd term)

MUS 222 Development of Music II (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 early Romantic period to the present is discussed.

MUS 241 Private Instruction: Voice
(2nd year, 1st term)

MUS 241 Private Instruction: Guitar
(2nd year, 1st term)

MUS 241 Private Instruction: Piano
(2nd year, 1st term)

MUS 242 Private Instruction: Voice
(2nd year, 2nd term)

MUS 242 Private Instruction: Guitar
(2nd year, 2nd term)

MUS 242 Private Instruction: Piano
(2nd year, 2nd term)

MUS 243 Private Instruction: Voice
(2nd year, 3rd term)

MUS 243 Private Instruction: Guitar
(2nd year, 3rd term)

MUS 243 Private Instruction: Piano
(2nd year, 3rd term)

MUS 251 Ensemble: Chorus
(2nd year, 1st term)

MUS 252 Ensemble: Chorus
(2nd year, 2nd term)

MUS 290 Special Topics

1-3 Variable Credits

This course is designed for flexible use and covers specific topics in music. This course is offered for credit appropriate to the topic and each offering includes a description of the topics(s).

MUS 299 Independent Study
1-3 Variable Credits

NUA - NURSING

NUA 101 Nurse Aide Theory/Lab
4 Credits
Co-requisite: NUA 102

This course prepares students to perform the fundamental skills of the nurse aide. Basic nursing skills, restorative services, personal care skills, safety and emergency care issues are covered in theory and lab. Students will learn skills that address mental health needs as well as patient/ resident/ client rights.

NUA 102 Nurse Aide Clinical
1 Credit
Co-requisite: NUA 101

This course applies knowledge gained from NUA 101 in a clinical setting.

NUT - NUTRITION

NUT 100 Fundamentals of Nutrition
3 Cred it

This course introduces basic nutrition, with an emphasis on personal nutritional information. Nutrients needed by the body throughout one's life span for vigor and quality of life will be examined. This course satisfies the nutritional requirement for nursing programs.

OSH - OCCUPATIONAL SAFETY TECHNOLOGY

OSH 112 Fire Protection and Analysis
3 Credits

This course enables students to recognize possible fire sources and emergency procedures. The course also offers an in-depth study of fires and the construction techniques of eliminating fires. This course includes history of fires, types of extinguishing agents and detecting devices. Topics also include construction techniques, extinguishing systems and detecting systems.

OSH 131 General Industry Standards
5 Credits

This course provides students with knowledge to implement an effective safety program for the general industry. 29CFR1910 Standards are covered.

OSH 134 Construction Standards
3 Credits

This course provides the knowledge needed to implement an effective safety program for any size/type of construction site. 29CFR1926 Standards are covered.

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.

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 covers Colorado Insurance Regulation 91-5 and explains how to design and implement a Certified Risk Management 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 students with an occupational safety major with the concepts and applications of current ergonomic theory. Discussions include work physiology, engineering anthropometry, biomechanics, work station design and controls. Students 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 that affect the environment. Regulations discussed are E.P.A., S.A.R.A, C.E.R.C.L.A., and RCRA. 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 are stressed.

OSH 240 Case Study Evaluation
5 Credits

This course teaches students OSHA's interpretations of regulations for the general industry and the construction industry.

OSH 250 Safety Training Methods
3 Credits

This course introduces current safety training methods. Organization, preparations and delivery are stressed.

OSH 255 Instrument Laboratory
2 Credits

This course prepares students to calibrate and utilize industrial hygiene instrumentation. Direct Reading Instruments and Personal Sampling Pums are covered.

OSH 261 Independent Study
3 Credits

This course provides an opportunity for students 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. Students may substitute internship credit for appropriate occupational safety courses required for the AAS degree or certificate. Appropriate credit is determined by an advisor.

OSH 296 Pre-Service Internship
5-12 Credits

This course is for those of students who do not have prior industrial experience in safety and wish to expand their understanding and knowledge of industrial processes and problems. Students may substitute internship credit for appropriate occupational safety courses required for the AAS degree. Appropriate credit is determined by an advisor.

PAP - PHYSICIAN ASSISTANT

Note: the Physician Assistant curriculum is under constant evaluation and elements of the required courses may be changed by the collegewithout notice. Admission to the PA Program is a prerequisite to each course.

PAP 200 Biochemistry and Cell Biology
3 Credits

This course introduces 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 are also covered. The basic conceptual background is provided to allow students to understand disease mechanisms, clinical lab tests and drug effects.

PAP 203 Health Care Issues
1 Credit

This course reviews the history of the physician assistant profession and describes the physician assistant's responsibilities and functions within a variety of health care delivery systems. The relationships between the physician assistant, the physician and other health care providers are explored. Legal and ethical issues and quality assurance in PA practice are discussed.

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 students with a solid understanding of the structure of the human body, with emphasis on normal vs. abnormal findings. Some of the areas covered include the musculoskeletal, nervous, cardiovascular, urinary, respiratory, digestive and reproductive systems.

PAP 207 Health Promotion and Disease Prevention
1 Credit

This course is intended for students who will provide clinical preventive services as part of primary care, counseling interventions, screening tests, immunizations and chemoprophylaxis. This course gives special emphasis to counseling patients about risk factors. Conventional and alternative prevention strategies will be discussed.

PAP 210 Human Physiology
3 Credits

This course provides students with an improved understanding of human physiology as it relates to clinical medicine. Through lectures and examinations, students study the functional organization of the human body, membrane physiology, nerve and muscle tissue function, the cardiovascular system, the lymphatic system, the immune system, respiration, digestion, renal function, metabolism and temperature regulation, endocrinology and human reproduction.

PAP 212 Introduction to Emergency Medicine

PAP 217 Introduction to Laboratory Medicine
1 Credit

This course to teacher students basic diagnostic and therapeutic clinical skills. The indications, normal findings, risks, benefits and costs of common basic diagnostic tests will be discussed.

PAP 218 Medical Literature
1 Credit

This course provides students with an approach to reading and understanding the medical literature. The fundamental principles of epidemiology will be addressed. Students will develop the necessary skills to evaluate study design and execution. Methods in which data are analyzed and interpreted will be described and evaluated.

PAP 219 Medical Interviewing Skills
1 Credit

This course teaches the oral techniques required to obtain a complete medical history. Students will develop and/or enhance their communication skills and learn to use these skills to interact effectively in professional relationships. This course explores the links between culture and communication. Communication techniques appropriate to multicultural society will be addressed.

PAP 220 Physical Examination Techniques
1 Credit

This course teaches the techniques required to perform a complete physical examination of patients of all ages. Practice sessions and mock patients are used to develop the practical skills necessary to perform these tasks in everyday clinical practice.

PAP 221 Clinical Medicine I
3 Credits

This course provides students with a beginning understanding of how clinicians approach the diagnosis and treatment of specific disease states. In conjunction with Human Pathology curriculum, students will learn to identify the signs and symptoms of common disorders, to further evaluate those disorders through appropriate testing and to prepare a treatment plan to preserve health or mitigate suffering. Topics to be covered include: cardiopulmonary, endocrine, dermatology, hematology, opthamology, otolaryngologic, oncology, immunologic, allergy and infectious disease.

PAP 222 Clinical Medicine II
3 Credits

Presentations and small group experiences will examine common patient conditions in pulmonary, gastrointestinal, genito-urinary, neuromuscular, men's health, orthopedics, rheumatoid and geriatrics. Emphasis will be on developing patient and assessment treatment plans. Students will learn to identify the

signs and symptoms of common disorders, to further evaluate those disorders through appropriate testing and to prepare a treatment plan to preserve health or mitigate suffering.

PAP 223 Pediatrics
2 Credits

The course is designed to emphasize primary care of the child from birth through adolescence. Students are exposed to techniques of history taking and physical examination specific to the pediatric population. Knowledge of problems unique to the adolescent will be discussed to enable students to develop skills in education of the adolescent on drug abuse, identity issues, human sexuality, peer pressure and resources for referral.

PAP 224 Introduction to Surgery
1 Credit

The object of this course is to provide the student with an introduction to the etiology, evaluation and initial management of common surgical complications and care of the surgical patient will be discussed.

PAP 225 Women's Health Care
1 Credit

This course provides an exposure to problems and issues associated with women's health care, primarily in the ambulatory setting. Emphasis is placed on family planning and birth control; recognition and treatment of sexually transmitted disease; cancer detection; prenatal care; and the evaluation of common gynecologic problems.

PAP 226 Clinical Procedures
1 Credit

This course is designed to teach students basic diagnostic and therapeutic clinical skills and procedures. Preparation of the patient, anatomical considerations, patient consent, potential complications and clarification of therapeutic and diagnostic value of clinical procedures will be discussed. WOund management, anesthesia, suturing techniques, injections and IV access, nasogastric incubation, and immobilization via casting and splinting will be covered.

PAP 230 Pharmacology I
1 Credit

This course begins the study of therapeutic pharmacology, with emphasis on pharmacokinetics and pharmacodynamics. The physiology that underlies drug contraindications, interactions and adverse effects are reviewed.

PAP 231 Pharmacology II
3 Credits

Students learn to apply the principles of pharmacology to the prevention and treatment of specific human disorders. Special emphasis is placed on the safe and appropriate use of medications.

PAP 235 Human Pathology
4 Credits
Co-requisite: Clinical Medicine

Learners focus on the clinical pathophysiology of human illness. Individual modules are devoted to an examination of the cellular and organ-based aspects of disease, with attention to how the disease process begins and proceeds. Where appropriate, presentations in Clinical Medicine will accompany the presentations in this course.

PAP 240 Behavioral Science for the Physician Assistant
3 Credits

Students explore the relationship between physical illness and psychosocial issues in the medical setting. Interviewing and communication styles unique to behavioral medicine will be discussed. The presentation and recognition of major psychiatric disorders, mood and anxiety disorders and substance abuse and the appropriate role of psychotherapeutic agents will be discussed.

PAP 260 - 269
4 Credits

This year-long series of highly structured off-campus clinical experiences pairs PA students with practicing clinicians who supervise them in the evaluation and treatment of patients. Rotations are conducted in a variety of inpatient, outpatient and long-term care settings.

PAR - 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
Prerequisite: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. Students 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 enjance the effectiveness of students 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 unarmed park rangers who work in local government parks and open space districts. The focus is on ranger safety, regulation enforcemtn, incident command, limits of authority, visitor contact, communications and situational control 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 rapair), 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/historical resource interpretation and provides students 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; preparing and presenting special activities such as demonstrations, living history, story telling, costumed 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 students 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.

PED - PHYSICAL EDUCATION

All the PED courses pertaining to mountain-oriented recreation have one or more field trips. Most field trips are single-day trips scheduled on a weekend. Courses marked with overnight camping.

PED 104 Volleyball
1 Credit

This hands-on course develops and/or enhances basic knowledge and skills for the game of volleyball. Emphasis is on practical skills and performance. Relevant concepts include proper technique, rules, etiquette, and equipment. Instructional practices and games will be conducted on-campus outdoors.

PED 106 Racquetball
1 Credit

This course is designed for individuals with intermediate to advanced racquetball skills. Emphasis is on individual performance, practical skills and competition.

PED 109 Tennis
1 Credit

This course covers the fundamental skills of forehand, backhand, serve and net volley. Scoring, rules and court etiquette are introduced in both the singles and doubles game.

PED 110 Fitness Conditioning
1 Credit

This course to creates a basic exercise and nutrition program based on individual goals and ability. Workouts include circuit training with a variety of other options including weight training, Ricochet, cardiovascular equipment and aerobic-style classes.

PED 111 Fitness Conditioning II
1 Credit
Prerequisite: PED 110

This course is designed for individuals interested in continuing their workout program to their cardiovascular fitness and strength. Free - weight training is introduced in conjunction with a personalized fitness program.

PED 113 Introduction to Flyfishing
1 Credit

In this course the student will gain the knowledge and skill of the fine art of Flyfishing including the selection and use of appropriate equipment, casting techniques, flyfishing entomology, and guiding techniques. This course includes several field trips to local flyfishing areas.

PED 116 Weight Training
1 Credit

This course provides a basic overview of weight training equipment and techniques for all levels of ability. This course is designed to improve one's fitness level while developing skills and knowledge in all areas of fitness.

PED 120 Fitness and Wellness
1 Credit

This course offers students a flexible way to improve their total fitness levels. Students have the freedom of using a variety of strength, aerobic and flexibility machines, as well as free-weights and aerobic classes.

PED 128 Outdoor Emergency Care
2 Credits

This comprehensive course will prepare the student without previous first aid training to handle emergency care problems seen at alpine and nordic ski areas. The knowledge and skills are orientated toward the wilderness extrications, and the special equipment ski patrollers need for emergency care and transportation in the outdoor environment. This is a National Ski Patrol course.

PED 143 Beginning Tai Chai
1 Credit

This course is designed to introduce Tai Chai as an expression of understanding of self-control, exercise and self-defense. The primary emphasis is to gain an understanding of the history (origin and changes) of Tai Chai, the movements and their names, application of movements and terminology.

PED 147 Introduction to Yoga
1 Credit

This course offers background information and guided instruction in yoga. Students practice yoga according to their individual fitness levels and abilities. Emphasis is placed on enhancing general health and well-being through the performance of yoga. Techniques such as yoga poses, breath work, flexibility, balance and relaxation exercises will be experienced.

PED 150 Basic Rock Climbing*
2 Credits

This eight-week course presents the basic concepts of rope handling, knots, climbing techniques, safety, belaying and top roping on climbs that are rated from 5.0 to 5.8. The course includes field trips to local climbing areas.

PED 151 Intermediate Rock Climbing
2 Credits

This eight-week course is designed for the climber wanting to learn more advanced techniques, such as protection placement, anchors, setting up safe top roping sessions and an introduction to safe lead climbing. The course includes field trips to local climbing areas.

PED 152 Avalanche Safety I
1 Credit

This course emphasizes the latest information available about the study of avalanches, snow science, rescue equipment and rescue techniques. This course will provide students with the knowledge and skills necessary to help instill good judgement and sound skills when making day-to-day travel decisions in the winter environment. This course fulfills the National Ski Patrol's Basic (Level I) Avalanche requirements.

PED 153 Hiking
1 Credit

This course provides wilderness sites and their specific location in Colorado where one can go to hike or camp. The course includes selected wilderness sites in other western states. Information is included about how to use guide books and selected maps. Field days are spent hiking.

PED 154 Backpacking
3 Credits

This course emphasizes the fundamentals of backpacking. The course includes trip planning, the selection of proper clothing and equipment, backpack cooking and nutrition, "Leave No Trace" hiking and camping, wilderness route finding, environmental hazards and safety procedures. The course includes field days and an overnight backpacking trip.

PED 155 Outdoor Expedition
3 Credits

This course is a group expedition covering seven to 10 days backpacking, hiking, paddling, or climbing in remote North American regions. The course includes the rationale for organizing and conducting wilderness trips.

PED 157 Basic Mountaineering
3 Credits

This course emphasizes the fundamentals of mountaineering on terrain that may include rock, snow and ice. Belaying, rappelling, ice axe techniques, proper clothing and equipment, backcountry weather forecasting and safe route finding will be presented. The course includes field trips and a peak attempt.

PED 156 Snow and Glacier Climbing
3 Credits

This course emphasizes the use of ice axe, crampons and roped climbing on snow. The course includes route finding and crevasse rescue.

PED 162 Map and Compass for the Outdoors Person
3 Credits

This course covers reading highway, forest service and topographic maps that include symbols, legends, border information and contour lines. The course includes the usage of a magnetic compass in an outdoor environment and functions that plot a course on maps. Supplemental navigational skills are included.

PED 159 Colorado's Fourteeners
2 Credits

This course presents an historical look into the naming and climbing of Colorado's 14,000-foot mountain peaks. The course includes information on the current routes to ascend the peaks.

PED 161 Backcountry Cooking
1 Credit

This course covers menu planning and nutritional requirements for wilderness camping. The course includes cooking a backpack meal.

PED 163 Orienteering/Route finding
3 Credits

This course combines the topics of using different types of topographic maps and compasses in order to safely plan a route in the wilderness with Orienteering (organized competitive cross-country walk/run using map and compass with a specific list of rules and map clues). Field trips may include student participation in a scheduled Orienteering meet.

PED 165 Wilderness Survival Skills
3 Credits

This course emphasizes the physiological and psychological principles of survival. Survival equipment, wilderness improvising techniques and wilderness dangers are included.

PED 167 Basic Search and Rescue
3 Credits

This course covers the basic fundamentals required for basic search and rescue in a wilderness environment. The course includes tracking techniques and field trips.

PED 176 Introduction to Flyfishing
1 Credit

In this course the student will gain knowledge and skill of the fine art of flyfishing including the selection and use of appropriate equipment, casting techniques, flyfishing entomology, and guiding techniques. This course includes several field trips to local flyfishing areas.

PED 177 Basic Sailing
1 Credit

This course focuses on relaxation, stress management and wellness through a variety of physical and mental activities.

PED 178 Scuba Diving
1 Credit

This course offers basic instruction and skills in scuba diving. Individuals taking this course are required to provide their own scuba equipment or rent equipment.

PED 181 Bicycle Camping
2 Credits

This course covers the fundamentals of using the bicycle for camping recreation and includes equipment, clothing, repair procedures and camping techniques.

PED 185 Nordic Skiing
2 Credits

The classroom portion of this six-week course includes proper selection and care of equipment, types of skis and boot binding systems, the art and science of cross country ski waxing, appropriate clothing and safe route selection. Field sessions include skill building and ski techniques for cross-country skiing in the backcountry.

PED 186 Snowshoeing
1 Credit

This course emphasizes basic skills, equipment, clothing and techniques of snowshoeing. The course includes the objective dangers involved with winter recreation.

PED 202 Bowling

PED 210 Fitness and Conditioning III
1 Credit
Prerequisites: PED 111

This course is designed to improve cardiovascular fitness and strength. This course provides students with the opportunity to create an advanced workout routine and nutrition program.

PED 211 Fitness and Conditioning IV
1 Credit
Prerequisites: PED 210

This course offers students the opportunity to continue advancing in their physical fitness program. Advanced weight training, weight management and aerobic techniques are offered in conjunction with improved nutrition and dietary analysis.

PED 237 Paddle Sports
2 Credits

This course focuses on the methods and skills of conducting and leading safe lake and river trips in of watercraft such as canoes, kayaks, or rafts. Students will learn modern river paddling techniques, trip planning and organization, basic river rescue and safety skills, federal and local permit systems and minimal impact camping, and boating techniques for a river corridor.

PED 240 Whitewater Rafting Guide
2 Credits
Prerequisite:PHE 237 or permission from the instructor

This course meets the requirements of Colorado Statue 33-32-105.5 which provides for the minimum qualifications of professional whitewater rafting guides. The classroom portion includes a review of the logistics, equipment, clothing, safety considerations, risk management, outdoor ethics, river reading fundamentals, and leadership skills. The remainder of the course will be spent with a licensed outfitter practicing all related and required skills while on the river.

PED 250 Wilderness Ethics
3 Credits

This course emphasizes the motivation, aesthetics and ethics of wilderness. Viewpoints to be examined include Native American, Western, historical and those of modern environmental writers.

PED 252 Outdoor Equipment and Facilities
3 Credits

This course is designed to acquaint and familiarize students with wilderness equipment and program facilities. The course includes a field trip.

PED 255 Winter Mountaineering
3 Credits

This course further develops the individual's mountaineering techniques on snow and ice, and teaches safety, rescue. It includes climbing a peak of moderate difficulty over two to four days.

PED 256 Mountaineering Teaching Concepts
3 Credits

This course covers planning and methods required to teach mountaineering skills. Students give lectures and conduct field trips.

PED 257 Winter Survival Skills
3 Credits

This course emphasizes winter survival techniques in the nivean environment at or near timberline. Winter ecology, basic snow science and avalanche safety and rescue are also be presented in a backcountry setting. The course includes field days and an overnight in a snowcave.

PED 289 Outdoor Leadership
2 Credits

This course is an introduction to the development, acquisition and application of outdoor leadership skills and knowledge. Students 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, judgment, decision making, group dynamics and trip logistics. These skills enhance the effectiveness of students as a professional outdoor leader.

PED 297 Cooperative Internship

PHI - PHILOSOPHY

PHI 111 Introduction to Philosophy (Core)
3 Credits
Prerequisite: College level reading and writing skills

This course introduces significant human questions and emphasizes understanding the meaning and methods of philosophy. The course includes the human condition, knowledge, freedom, ethics, religion and the nature of mind.

PHI 112 Ethics (Core)
3 Credits
Prerequisite:College level reading and writing skills

This course examines human life, experience and thought to discover and develop principles and values for pursuing a more fulfilled existence. Theories to justify ethical judgments are applied to a selection of contemporary personal and social issues.

PHI 113 Logic (Core)
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. The course 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 students 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 117 Psychology of Religion
3 Credits
This class is cross listed as PSY 117

The Psychology of Religion consists the application of psychological principles and theories to religious phenomena, including religious practices, beliefs and rituals. As an introduction to this field, this course begins a historical appreciation of psychologists' attempts to understand religion, continues with an exploration of select theories, and concludes with an analysis of modern problems and future directions.

PHI 118 Religion in American Culture
3 Credits
This class is cross listed as HUM 118
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 ways in which religion and American culture interface.

PHI 119 Early Christian Literature
3 Credits
This class is cross listed as HUM 119

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 noncanonical 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 120 Literature of Ancient Israel
3 Credits

This course surveys the literature produced by ancient Israel from its inception in the 10th century B.C.E. to its absorption into the Roman Empire. The Hebrew Scriptures along with selected Apocryphal writings will be examined. The course will focus on the interpretation of these texts in light of the historical and cultural milieu from which they arose. Particular attention will be paid to the comparison of the literature of ancient Israel to that of its neighbors.

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. The course covers the uses of language, the art of definitions and explanations, the nature of argumentation and debate, the searching for the presuppositions and the preparations of outlines and speeches.

PHI 202 Religion and Film
3 Credits

This course introduces basic concepts to the academic study of religion and illustrates those concepts by examining the ways in which a number of contemporary films embody religious themes. Particular attention will be paid to the challenges modernity and postmodernity pose to traditional religion.

PHI 280-285 Special Topics in Philosophy
3 Credits
Prerequisite: Prior philosophy course, sophomore standing or instructor permission

Students explore indepth specific topics, movements, or persons in the history of philosophy. This study might include 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.

PHY - PHYSICS

A grade of "C" or better is required in all prerequisite courses.

PHY 105 Conceptual Physics (Core)
4 Credits
Prerequisite: MAT 090 or permission from the instructor
Co-requisite: PHY 105 Lab

This course examines the basic concepts of mechanics, gravitation, vibrations, heat, electricity, magnetism, sound, light and some modern physics. This course satisfies the core requirements for an AA degree and includes a laboratory component.

PHY 111 College Physics I: Algebra-Based (Core)
5 Credits
Co-requisite: PHY 111 LAB
Prerequisite: MAT 160

This course studies mechanics and heat and includes laboratory.

PHY 112 College Physics II: Algebra-Based (Core)
5 Credits
Co-requisite: PHY 112 LAB
Prerequisite: PHY 111 or permission of instructor

This course enables students to learn about electricity and magnetism, light and modern physics. This course includes laboratory.

PHY 211 General Physics I: Calculus-based (Core)
5 Credits
Co-requisite: PHY 211 Lab
Prerequisite: MAT 201 or permission from the instructor

This course examines the basic concepts of mechanics and heat. Students will learn several problem solving techniques used by physicists and engineers. This course satisfies the core requirements for an AS degree and includes a laboratory component.

PHY 212 General Physics II: Calculus-based (Core)
5 Credits
Co-requisite: PHY 212 Lab
Prerequisite: MAT 202 or permission from the instructor; PHY 211 or permission from the instructor

This course examines the basic concepts of waves, electricity , magnetism and light. Students learn several problem-solving techniques used by physicists and engineers. A continuation of PHY 211, this course satisfies the core requirements for an AS degree and includes a laboratory component.

PLU - PLUMBING

PLU 101 Introduction to Plumbing
4 Credits

This course introduces the student to the plumbing trade, along with the opportunity to learn basic skills needed to work in the plumbing industry. The course includes work in the classroom and shop with plastic, copper, steel and cast iron pipe. Students will be able to identify and apply common DWV, copper and threaded fittings. Job safety and introduction to isometric drawing are also included in this course.

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.

PLU 110 Waste and Vent/Code Requirements
4 Credits
Prerequisite: PLU 101 and CON 105 or permission of the instructor

This course gives the student the opportunity to learn how to design drain, waste and vent systems. Chapters 7,8,9 and 10 of the plumbing code will be discussed in the classroom and applied in the shop. Other topics include DWV materials, sizing systems, terminology, practical application of code tables, traps and interceptors. Students will design DWV systems in the classroom and build the system in the shop, thereby developing their isometric drawing skills. (Offered spring semester only)

PLU 112 Residential Plumbing
4 Credits
Prerequisite: PLU 101, 105, 110 or permission of the instructor

The student will learn how to design and install residential plumbing systems. (Course does not cover DWV systems: see PLU 110.) Students will work in the shop installing systems, and in the classroom designing systems. Topics include the application of code requirements, fuel piping systems, water piping systems, rough-in measurements and installation practices. Students will also learn to install components, such as water heaters, tub/shower valves, a variety of shower enclosures and other fixtures. (Offered fall semester only)

PLU 116 Soldering and Brazing Skill
0.5 Credit

This course allows the student to learn proper soldering and brazing skills when joining copper tube and fittings. Topics include safety, proper soldering and brazing skills, how to assess joint quality and basic center-to-center measurement. The skills learned in this course are helpful to plumbers preparing to take the Colorado practical plumbing test.

PLU 118 Plumbing Service
4 Credits

This course teaches allow the student how to diagnose and repair common problems associated with plumbing components and systems. Topics includes faucet repair, water heater replacement and repair, drain cleaning, water closet repair, piping repairs, finding the source of leaks and evaluating problems for repair or replacement. Students will learn customer relations and communication skills. (Offered fall semester only)

PLU 200 Backflow Prevention Certification
3 Credits

This course is designed to prepare students 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 students to take the backflow, cross-connection test.

PLU 202 Backflow Prevention Re-Certification
1 Credit
Prerequisite: A current Colorado Cross Connection Control Technician Certification

This course is for technicians who have a current Colorado Cross Connection Control Certification and need to renew the certification. The course will review current state and federal regulations applicable to re-certification.

PLU 206 Hot Water Heating Systems
4 Credits
Prerequisite: PLU 105; AHR 103, 105 or permission of the instructor

This course covers the theory of operation behind these systems, as well as installation, maintenance and repair. The course 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 105 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 212 Commercial and Multi-Story Projects
3 Credits
Prerequisite:PLU 110

This course introduces students 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 110 or permission of instructor

The information in this course is designed to assist students 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.

PLU225 Technical Project
3-12 Credits

This course enables students to participate in individual study on a special project which is related to the plumbing program. This technical project consists of a written and approved proposal and scheduled progress reports.

PLU 255 Medical Gas
2-3 Credits

This course pursues medical gas certification and brazing testing. Specialty training includes anesthesia, respiratory and inhalation therapies. Medical gas system components, medical gas compressors and NFPA standards are examined. This course includes the training time required to meet the Colorado Examining Board of Plumbers requirements.

POS - POLITICAL SCIENCE

POS 105 Introduction to Political Science (Core)
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 (Core)
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 semester.

PRODUCTION AND DESIGN TECHNOLOGY

(See Multimedia Technology)

For Your Information

Affirmative Action/ Equal Opportunity

Red Rocks Community College is committed to diversity in its people and programs. The college is an equal opportunity educational institution and does not discriminate on the basis of race, color, religion, national origin, sex, age, veteran status or disability. It also does not tolerate acts of 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. The plan 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 **303.914.6570**. Other inquiries may be made to the Director of Affirmative Action for the Community Colleges of Colorado, 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 Educational 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
- Local address
- Local telephone number
- Field of study
- Most recent previous school attended
- Photographic/video-taped images
- Date and place of birth
- Full-time or part-time status
- Class schedule
- Class roster
- E-mail address
- Degrees and certificates awarded
- Participation in officially recognized activities and sports
- Dates of attendance

If you do not want the collegeto release directory information about you without your specific consent, sign a Directory Restriction form in the Admissions Office. Your directory restriction will remain in effect until you cancel the request for nondisclosure.

Information: **303.914.6303**

Students with Disabilities

Red Rocks Community College offers many special services to students with permanent or temporary disabilitiesy. 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 youd require an accommodation to participate in any class, program, service or other activity at Red Rocks, contact the Office of Special Services 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 the Human Resources Office.

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

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

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

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

Illegal Substances
A listing of controlled substances is on file for your reference in the 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	**303.914.6570**
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**

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.

Notification of Rights Under FERPA for Postsecondary Institutions

The Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to their education records. These rights include:

1. The right to inspect and review students' education records within 45 days of the day Red Rocks Community College (RRCC) receives a request for access. Students should submit to the registrar or coordinator of Student Records, written requests that identify the record(s) they wish to inspect. The RRCC. official will make arrangements for access and notify students of the time and place where the records may be inspected.
2. The right to request the amendment of students' education records that the student believes are inaccurate or misleading. Students may ask RRCC. to amend a record that they believe is inaccurate or misleading. They should write the above RRCC. official responsible for the record, clearly identify the part of the record they want changed, and specify why it is inaccurate or misleading. If RRCC. decides not to amend the record as requested by the student, RRCC. will notify the student of the decision and advise students of the right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the students' when notified of the right to a hearing.
3. The right to consent to disclosures of personally identifiable information contained in the student's education records, except to the extent that FERPA authorizes disclosure without consent. One exception which permits disclosure without consent is disclosure to a school official with legitimate educational interests. A school official is a person employed by the collegein an administrative, supervisory, academic or research, or support staff position (including law enforcement unit personnel and health staff); a person or company with whom the collegehas contracted (such as an attorney, auditor, or collection agent); a person serving on the State Board for Community Colleges and Occupational Education, or serving on a collegeadvisory committee; or a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another school official in performing his or her tasks. A school official has a legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional responsibility.
4. The right to file a complaint with the U.S. Department of Education concerning alleged failures by RRCC. to comply with the requirements of FERPA.

Family Policy Compliance Office
U.S. Department of Education
600 Independence Avenue, SW
Washington, DC 20202-4605

Directory

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President

Vi Rapuano
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Cliff Richardson
Vice President of Administrative and Institutional Support Services

Paulann Doane
Executive Director of RRCC Foundation

Bruce Walthers
Vice President Student Services and Enrollment Management

Administrators

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Director of Enrollment Services
M.Ed., Eastern New Mexico University, 1995; B.S., Eastern New Mexico University, 1989

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Master Electrician

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M.A., University of Colorado at Denver, 1997; B.A., San Diego State University, 1972; A.A., Grossmont Junior College,1969

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Dr. P.H. Loma Linda University, 1995; M.S., Slippery Rock University, 1987; B.S., Colorado State University, 1985

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B.S., Indiana State University, 1979

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Dean Arvada Campus
M.Ed., Colorado State University, 1989; B.Ed., Colorado State University, 1980

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M.Ed., Texas Tech University, 1974; B.S., Texas Tech University, 1969; A.A., Schreiner College, 1966

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M.S., University of Colorado at Denver, 1987; B.A., University of Northern Colorado, 1974

John Mackey
Chief of Police
B.S., University of Massachusetts-Boston, 1980

Casey Mahon
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M.A., University of Northern Colorado, 1998; B.A., Southwest Texas State University, 1987

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B.A., St. Joseph College, 1971

Peggy Morgan
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B.S., Mesa State College, 1996

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M.Ed., University of Florida, 1984; B.S., Virginia Polytechnic Institute and State University, 1979

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M.Ed., Colorado State University, 1994; B.S., Regis University, 1993

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M.P.A., University of Colorado, 1987; B.S., Metropolitan State College, 1978

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Joan Smith
Executive Director of Grants and Instutional Research
B.S., Colorado Christian University, 2000

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Vice President Student Services and Enrollment Management
M.A., Bowling Green State University, 1978; B.A., Colorado State University, 1977

Ben Yohe
Dean 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

Classified Staff

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Media Specialist IV,
Media Resources

Kim Arellano
Administrative Assistant II
Enrollment Services

Claudia Aspinall
Administrative Assistant II
Physical Plant

Janet Baker
Program Assistant I
Instructional Services

Jane Banzhaf
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More than four hundred adjunct 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 part-time faculty also changes; it is not feasible to individually list them. The college takes this opportunity to recognize the outstanding contributions made by our adjunct faculty who provide timely, quality instruction to Red Rocks Community College students.

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