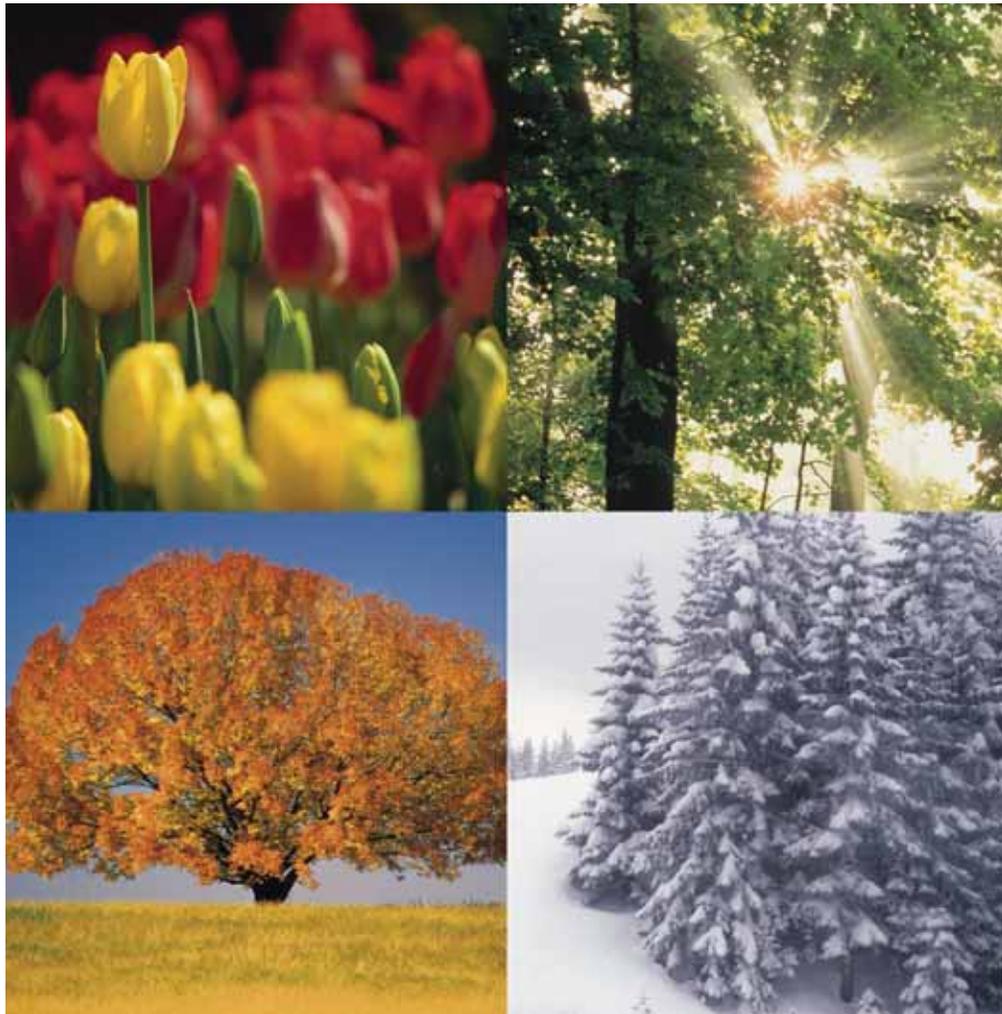


Catalog



2005-2006

RED COMMUNITY
ROCKS COLLEGE

Where Learning Is For Life

Degree programs, courses and transfer agreements are constantly under review, and subject to periodic changes. Check the Red Rocks website for the latest updates to catalog and schedule information.

www.rrcc.edu

Red Rocks reserves the right, whenever it judges necessary to meet changing academic, instructional, student or fiscal needs, to modify without notice the information contained in the college catalog or class schedule.



Contents

This catalog applies to students beginning their Red Rocks studies from fall semester 2005 through fall semester 2006.

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General Information

Learn facts about Red Rocks, how to apply, tuition and financial aid, services for students, flex and distance learning, academics and graduation.



Welcome



Welcome to Red Rocks Community College and 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 importantly, the wealth of classes and learning options we offer to help you achieve your educational goals.

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 our strong personal commitment to providing students with an excellent educational opportunity to fit their needs. Whether you seek retraining for a changing job market, plan on transferring our courses to a four-year institution, desire new skills to enhance performance at work or simply want to learn something new, use this catalog as a resource to help you chart your course.

If you know exactly what you want to learn, you will 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. We have hundreds of outstanding certificate and two-year degree programs. Because we know you have a busy life beyond your educational goals, we offer day, evening, weekend, online and self-directed classes to fit your schedule.

If this is your first orientation to Red Rocks, I invite you to visit our campus to experience our comfortable and welcoming learning environment of which we are so proud. Our faculty and staff are dedicated to helping you reach your educational goals. Let us help you onto your path to success.

Sincerely,
Cliff Richardson
Interim Chief Administrative Officer,
President's Office



About RRCC

Red Rocks is a community of 14,000 learners each year, studying at campuses in Lakewood and Arvada – and around the world through online courses.

We are one of 13 Colorado community colleges charged with preparing a state workforce for the emerging needs of employers.

We also offer an affordable start for students who plan to earn a four-year degree.

Lakewood Campus

The Lakewood campus is located on a 140-acre site on a hillside with sweeping views of the Front Range.

The quarter-mile-long building houses everything from state-of-the-art multimedia graphics computer labs to construction technology worksites, traditional classrooms and labs and health-careers practice areas.

The building's long main hallway is filled with students from around the metro area, the state, the country and 40 foreign countries.

The full range of services for students includes academic advising, tutoring, financial aid, a cafeteria and coffee shop, recreational facilities and a fitness center, library, a project center and student employment center.

Arvada Campus

The Arvada campus is known for its innovative schedule options and its friendly, helpful atmosphere. The campus, which lies just northwest of the intersection of I-70 and Kipling, has state-of-the-art "smart" classrooms and offers a variety of courses from Anthropology to Speech. We also offer general education core courses and basic-skills courses in Math and English.

The LARC (Learning and Resource Center) is the centerpiece of the building, housing the Computer Commons, assessment, online support, library services, tutorial services in math and basic skills, free computerized Pre-GED testing, career resources, study areas and access to the Internet. Students can receive advising, register for classes, and receive financial aid information in one convenient location.

The Arvada campus also offers a series of free business seminars. For a complete listing, visit www.rrcc.edu/arvada.

Guiding Principles

Vision: The vision of Red Rocks Community College is to be the college of first choice.

Mission: Our mission is to create a passion for learning through our dedication to students, our commitment to excellence and our own love of learning.

Values: These are the principles that define our values and guide us in our actions and decisions:

- Innovation
- Teamwork
- Diversity
- Communication
- Integrity

Red Rocks Community College is:

- A committed business partner; responding to industry and community needs through innovative solutions.
- A coalition builder; initiating opportunities for creative problem solving through teamwork
- A proponent for diversity; providing an environment that respects differences among us.
- A believer in communication; fostering a culture that promotes an open exchange of ideas.
- A model of integrity; supporting our mission with thoughtful and judicious decision making.

Affiliations

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 Colorado Community College System
9101 E. Lowry Blvd.
Denver, CO 80230-6011
Information: 303.620.4000



Admissions

Four steps and you're in:

1. Apply
2. Test your skills
3. See an advisor
4. Pick your classes

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

Admission does not ensure 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 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. 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.

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 instruction. 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.

International students should contact the International Education Office at **303.914.6416** to begin their admission process.

1. Submit an Application for Admission, including the declaration of program, major or area of study. Applications are in the schedule and online at www.rccc.edu.
2. Take the ACCUPLACER basic-skills assessment or show proof of ACT/SAT qualifying scores 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 RRCC 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: Red Rocks Community College welcomes high school students who are at least 16 years old and can benefit from our instructional programs. To get started, follow these simple steps:

1. Talk to your high school counselor. Upon approval from your counselor, you may take courses at RRCC for dual credit (high school and college credit). Ask your counselor about Post-Secondary Enrollment Options (PSEO), Warren Tech, and other concurrent enrollment options.
2. Fill out paperwork, available in your high school counseling center.
 - Complete a Red Rocks Community College Application for Admission
 - Complete a Statewide Agreement form (for high school concurrent enrollment).
 - Depending on the program through which you enter Red Rocks, you may need additional forms.
3. Complete the assessment process. Submit qualifying ACT or SAT scores (www.rccc.edu/assessment/minimum.htm) or complete the free ACCUPLACER assessment at the college. The ACCUPLACER measures your readiness for college-level course work; it is not a test of whether or not you can attend Red Rocks, but a tool to help advisors place you in appropriate college courses. Call, 303.914.6720 or visit www.rccc.edu/assessment/timecomp.htm for more information on where and when to take the ACCUPLACER test.
4. Visit a Red Rocks advisor. Call the High School Relations Office at 303.914.6350 to schedule an appointment for academic advising and registration.



Admissions

Advising

Visit the Advising Center after completing the assessment process. Academic advisors can help you select and schedule courses, identify course prerequisites, obtain specific program information, prepare for graduation and evaluate assessment results. Advisors can also help with specific program planning if you intend to transfer to a four-year college or university. All students are strongly encouraged to consult with an advisor before determining a degree or certificate program.

Information: 303.914.6255

Armed Forces Recruiting

ROTC is offered in conjunction with Colorado School of Mines. For Armed Forces recruiting information and ROTC information, please come to Room 1200.

Information: 303.914.6353

Assessment

At RRCC we assess the basic-skills proficiency of all new students who plan to enroll in courses leading to a degree. If you previously enrolled at the college while still attending high school, you are considered a new student when you enter the college after graduation.

The ACCUPLACER takes approximately ninety minutes and is available on a walk-in basis. Test times are listed in the current schedule. The test is free for new students. Retesting is available for a fee of \$5 per test section.

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 or a career change, or want to enhance your existing job skills, consider our Career Development Workshops. You will:

- Clarify career options based on personal results from the Strong Interest Inventory® and Myers/Briggs Type Inventory®.
- Learn about the world of work through use of online resources, inventory results and ACT Discover (an online career planning program).
- Determine a plan of action and develop a step-by-step guide to achieve your goals.
- Receive valuable take-home materials for further career exploration and goal setting.

A fee is charged for the workshop.

Information: 303.914.6255.

Red Rocks also offers individual appointments for the Myers-Briggs and Strong Interest Inventory. To make an appointment, please call the Arvada campus at 303.914.6016.

In the fall and spring semester, PSY 110, Career Development, is offered one night per week as a hybrid 3 credit course.

PSY 110 covers all areas of career development including assessment, career exploration, labor-market information, goal and decision making, networking, informational interviewing, resume and cover letter writing and interviewing skills. At the end of this course you will come up with your own career plan.

Information: 303 914-6016.

ESL/Foreign Language Lab

The ESL/Foreign Language Lab offers CD-ROM, videotape and audio-cassette materials to help students and staff learn more than 100 world languages. Tutoring is available in Spanish, French, German, Italian and English as a Second Language (ESL). The lab also maintains a resource library of world beat music CDs and foreign-language movies with English subtitles.

Information: 303.914.6719

Transcripts

If you need your Red Rocks transcript forwarded to a third party, a Transcript Request form is available in Admissions, or on the Red Rocks website. There is a \$3 charge per transcript. Transcripts will not be released for students who have not fulfilled all financial obligations to the college.

Information: 303.914.6352



Admissions

Transfer of Credits

The Colorado Community College System launched a common course-numbering and competency project to improve transfer and to ensure curriculum quality across our system. It will not jeopardize your credit and transfer. Information will be posted online at www.cccs.edu. Once you are on the site, click on CCCS Common Courses.

1. Initial transcript evaluation is done in Student Records. Transcripts must be sent from a previous college to RRCC.
2. Grade point average (GPA) from transfer institutions is not calculated into the RRCC 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.
5. All received and/or evaluated transcripts become property of RRCC. Only grades of C or better will be accepted for transfer. 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. Transcripts will not be evaluated until you are registered. If you are a veteran using VA 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 change.

Information: **303.914.6355**

Transferring to Four-Year Colleges and Universities

Red Rocks Community College has established transfer agreements with the following institutions:

Adams State College
 Colorado School of Mines
 Colorado State University, Fort Collins
 Colorado State University, Pueblo
 Colorado Technical University
 Fort Lewis College
 Fort Wayne State University
 Franklin University
 Mesa State College
 Metropolitan State College of Denver
 Regis University
 Rocky Mountain College of Art and Design
 Southwest Acupuncture College
 St. Francis University
 University of Colorado, Boulder
 University of Colorado, Colorado Springs
 University of Colorado at Denver
 University of Colorado Health Sciences Center
 University of Denver
 University of Northern Colorado
 Western State College

These agreements specify how Red Rocks courses transfer and identify their equivalents at these institutions. They are written guarantees of transferability when a prescribed curriculum is satisfactorily completed.

Information: **303.914.6255**

Warren Tech

WarrenTech is the career and technical high school for Jeffco Public Schools. Classes follow the WarrenTech/Jeffco Public Schools calendar. Deadlines and class start and end dates differ from those of RRCC. Anyone who has graduated from high school, received a GED, or is age 21 or older may attend

WarrenTech by enrolling through Red Rocks Community College. Adults attend WarrenTech on a space-available basis. WarrenTech classes are conducted on a block schedule – usually for 15 hours per week.

Adult students pay tuition to Red Rocks Community College but attend programs on the WarrenTech campus. Typically WarrenTech programs are the equivalent of 14 college credit hours per semester. Costs for all day programs in Hairstyling and Culinary Arts are higher.

WarrenTech Information Guides are available at WarrenTech or Red Rocks Community College. For more information interested students should contact the RRCC-WT Liaison at 303-982-8603 or the Rocks Community College Admissions Office at 303-914-6543. Admissions and registration requirements can be obtained from either office. All students that apply to a Warren Tech program are required to take the ACCUPLACER test at RRCC.

The following WarrenTech programs are available to RRCC students on a space available basis:

Auto Collision Repair
 Automotive Technology
 Culinary Arts
 Dental Assisting
 Entertainment and Event Planning
 Esthetician
 Hairstyling
 Hospitality, Travel & Tourism
 Nail Tech
 Precision Machining Technology
 Print Media



Tuition

Tuition at Colorado's community colleges is about half that charged at state four-year colleges.

If cost is a problem, we have many scholarships and other financial aid options that will help.

Financial Aid

About one-third of our 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 can provide details for the following:

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

Once you have applied for financial aid, it may take eight to ten 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, contact the Financial Aid Office, or visit us on the web at www.rccc.edu/finaid.

Information: 303.914.6256

Priority Dates to Receive Financial Aid

Fall:	Previous April
Spring:	Previous September
Summer:	Previous February

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 financially obligated for full tuition and fees for all classes you have not officially dropped by the drop/refund date. Do not assume you have

been dropped from a class for missing payment deadlines or for not attending a class.

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.

College Opportunity Fund

The State of Colorado historically subsidized higher education for in-state students by giving money directly to the colleges. In 2004 the Colorado Legislature enacted a new law establishing the College Opportunity Fund ("COF"). Under this new law, starting in the Fall semester 2005, the State will give this money for the subsidy to students by sending it to the institution the student designates. This money, known as College Opportunity Fund stipends, will be applied to an in-state student's tuition if the student applies for and authorizes the use of the stipend. The college you are attending will receive the money and it will appear as a credit on your tuition bill. At press time, the College Opportunity Fund (COF) stipend was estimated to be worth \$80.00 per credit hour.



Where Learning
Is For Life

Foundation

The RRCC Foundation has provided more than \$1.3 million in institutional support and scholarships to help RRCC students achieve their dreams.

If you are a student needing assistance or a donor wishing to participate, call us at 303.914.6425.

The Red Rocks Community College Foundation is a not-for-profit organization founded in 1993 to provide financial support to the college and to its students and to increase public and business awareness of the college's important role in the community. The Foundation came to be because of individuals who believed in the value of a college education and the need for students of all income levels to have access to higher education.

The Foundation began with one donor, a loyal board of directors and the Foundation staff, who all aspired to assist students and make a difference in their lives. Now, more than 10 years later, we have hundreds of donors who help us each year. The Foundation has raised more than \$5 million, awarded more than \$1.2 million in scholarships to nearly 1,600 students and provided over \$500,000 to the college for the Learning and Resource Centers at the Lakewood and Arvada campuses, mini-grants for innovative faculty, the Teaching Chair program that recognizes excellence in the classroom, instructional equipment, and other faculty, staff and student grants.

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 June of each year. Scholarships are given on the basis of both need and merit.

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.

Only with the assistance of people who care can we continue to meet our goals and successfully assist our students. If you are a student needing assistance, or a donor wishing to participate, call us at 303.914.6425.

Foundation Board

The Foundation is governed by a board of up to 30 community and business leaders.

- Dr. Agneta Albinsson
- Cynthia R. Andrews
- Robert E. Barber
- Kevin J. Bervik
- Timothy K. Bradley
- John G. Brant
- Tim Campbell
- Michael Coughlin
- Kristen M. Fiala
- Jacquie Haughton
- Dan Leach
- Thomas W. Lemcke
- Al Meiklejohn
- Bert Mizke
- Aldo G. Notarianni
- Skip Olson
- Jane Petrie
- Cliff Richardson
- Bob Short
- Glenn Stroehler
- Shirleen Tucker
- Denise Waddell
- Duane Youse
- Paulann Doane, executive director



LARC

The LARC – Learning and Resource Center – is a one-stop spot for skills assessment, tutoring, library and Internet resources, and adaptations for students with disabilities.

The Learning and Resource Center (LARC) is a welcoming place where students can study on their own or meet with a tutor, a study group, or their instructor. The LARC is equipped with 36 networked computers that provide state-of-the-art computer technology.

Information: 303.914.6705

Tutoring

Tutoring is provided by professional and peer tutors. Walk-in tutoring in math, writing, sciences, accounting, Microsoft applications, and other subjects is free to RRCC students. Stop by the LARC and pick up a tutoring schedule.

One-to-one tutoring is available to vocational students having difficulty with their classes and to transfer majors whose grades fall below average in selected content areas.

GED Pre-test and Preparation

A free practice test for the GED (General Education Development) is offered on a walk-in basis at the Arvada and Lakewood campuses. The GED pre-test allows students to determine whether or not they are ready for the official GED. The GED preparation course offered on the Lakewood campus is open-entry, so students may begin at any time. The course is self-paced, so students learn based on their individual needs with personalized help from friendly, supportive tutors. The free practice test is also offered en Español at the Lakewood campus.

Assessment

Credit for Prior Learning (CPL)

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 RRCC and related to your current program.

Methods available for CPL are the following:

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

CPL handbook and forms are online:

www.rrcc.edu/assessment

Other tests available:

- ACCUPLACER (Red Rocks assessment test) Test times are listed in the schedule. No appointment is required. Sample tests are available online:
www.rrcc.edu/assessment
- Special testing for outside organizations.
- Authorized PROMETRIC Testing Center. Computerized certification and license testing for software publishers, state and federal government and educational entrance exams.

Information: **303.914.6720**

College Success for All Students

Want to be a better student, but just don't know how? AAA 090 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 academic success. This course is also available through RRCC online. Go to rrcc.edu/online for more information.



LARC

Library

The library offers extensive print, audio-visual and electronic information research resources. The library's online services access the library's book, electronic book and audiovisual holdings; thousands of full-text articles plus several full-text encyclopedias; the holdings of other area libraries; and the research resources of the World Wide Web. All online services are accessible from on and off campus. The library's video collection provides an alternative means of learning about subjects taught in RRCC classes while the book, electronic book and article collections support traditional research. Interlibrary Loan lets you borrow materials from virtually any library in the world.

Information: 303.914.6740 or www.rrcc.edu/library

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 makes determinations and provisions regarding access and reasonable accommodations, and provides advocacy services for students, and visitors with disabilities. The office is also a resource for the college community on disability issues. Services include sign language interpreters, books in alternate format, note takers, readers, tutoring for remedial classes, test accommodations and adaptive technology. The office also arranges orientations for new and potential students with disabilities.

Information: 303.914.6733 (V) or 303.914.6737 (TTY)

Weekend College

Did you know that you can take classes leading to a two-year degree by going to school only on weekends? Or, if you want to pick up elective classes or just take classes for fun, you have more than 100 classes to choose from during the spring and fall semesters. In fact, you can start new classes just about any time throughout a semester.

Information: **303.914.6606**

Writing Center and Online Writing Center

The mission of the Writing Center is to help students become better writers. English tutors 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, research papers and essay exams. Tutors 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.edu/writing. The OWC provides links to information about writing and grammar, and students may submit papers and questions for feedback from tutors.

Information: **303.914.6701**



Alternatives

You can earn a certificate or a degree from Red Rocks without ever coming on campus through our distance learning opportunities.

Flex learning fits RRCC courses to your life. Study at night, on weekends, via television, in a hybrid of online and classroom or at your own pace.

It's your choice.

Online Courses

RRCC Online Courses

Courses through RRCC Online are taken, anytime, anywhere at your convenience. Most courses follow a traditional semester schedule and many also have accelerated 7-week online sections. They 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.

RRCC Online courses are designated by 450 (summer), 460 (fall), 470 (spring) section numbers. They are available in a wide variety of subjects that meet degree and certificate program requirements.

You can 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 RRCC Lakewood campus or to the Arvada Campus Learning and Resource Center.

Tuition is \$136.40 per credit hour for both residents and nonresidents.

Information: **303.914.6444** or **www.rrcc.edu/online**

CCCOOnline Courses

Colorado Community College Online provides a centralized website where you can take classes, earn a certificate or even complete an associate's degree online from the community college of your choice. See an advisor for details. Tuition cost is \$136.40 per credit hour for both residents and nonresidents.

All courses taken through CCCOOnline are transferable to the Colorado community college of your choice within the system. Choose RRCC as your home college, and your transcript will show your CCCOOnline courses as RRCC courses.

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

Information: **800.801.5040** or **www.cconline.org**

Computer Specifications

You never need to come to campus if you have a computer with Internet access. Minimum hardware: Pentium III or faster with Windows 98 or newer, or a Macintosh with MacOS 7.5.5 or later, with 64MB of RAM, a 56 Kbps modem, sound card and speakers, and a valid e-mail account.

Internships

(Also known as Cooperative Education)

As an extension and application of classroom learning, internships provide valuable work experience under the supervision of professional business and industry personnel. A qualified faculty member oversees the internship, evaluates your progress and issues a grade upon completion. The Student Employment/Internship office facilitates the internship placement and enrollment process, and maintains all internship student records.

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 three-way partnership enhances your success during the internship – the employer (mentor), you (intern), and a RRCC faculty/staff member (support).



Alternatives

A minimum of 45 clock hours of work experience is required to earn each hour of college internship credit. Most programs offer work experience opportunities, and some require them for graduation. The total number of credits, which may apply toward a degree in a specific area, is identified in the "Instructional Programs" section of this catalog. For programs not requiring work experience, internships are considered an approved substitute or an elective upon permission of the faculty advisor.

Transferability of internship college credit is contingent on approval of the receiving institutions. General education internship credit has been formally articulated for transfer to the University of Colorado - Denver and Colorado State University. All internship courses carry a specific course prefix and course number, and can be found in the respective program listings and course descriptions in the catalog. Permission of the faculty coordinator is required to enroll, and all students interested in pursuing an internship should begin their enrollment process in the Student Employment/Internship office.

Information: **303.914.6258**

Independent Study

Most areas of study at RRCC offer opportunities to engage in intensive study and/or research on a topic under the direction of a qualified faculty member. The student and the instructor determine independent study course content, credit and contact hours jointly. Permission of the instructor is required prior to registering. Independent Study may be taken an unlimited number of times, but no more than six credits may be applied to any associate degree program.

Service Learning

Service Learning 'SL' is a way for students to get involved in the community and to combine experiential learning with classroom learning. The Service Learning program at Red Rocks Community College connects community service with academic instruction, focusing on critical, reflective thinking and personal and civic responsibility. With the support of faculty and fellow students, service can take on a meaningful context through classroom discussions and reflection. Students have the opportunity to serve their community while applying knowledge gained in the classroom. Community organizations benefit from students' involvement, while students enhance their own sense of personal outreach in meeting community needs. It's a win-win situation!

Students with a final SL class grade of 'C' or better will receive Service Learning designation on their official transcript. Students interested in pursuing Service Learning in any non-designated SL classes can ask their instructor for permission to pursue individual service projects. Transcript designation is available to these students as well.

For further information:
<http://www.rcc.edu/servlearn/index.htm>,
 or contact your classroom instructor.



International education

International Students

Admission Information

International students are those students admitted into the U.S. on an F1 non-immigrant student visa. If you are an international student, submit the following documents:

1. Red Rocks Community College "International Student Admissions Application, available in the International Education office."
2. A statement of financial resources sufficient for tuition and living expenses while in the U.S. (Currently \$16,550/year based on tuition of \$4,250/full time per semester). Tuition and fees are subject to change without notice.

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

Upon arrival in the U.S., you will need to provide proof of health insurance coverage, including medical evacuation and repatriation. Health insurance is available through the International Education Office.

Application Deadlines

International students should apply as early as possible in order to allow sufficient time for the college to assess all necessary documents and for the U.S. State Department's VISA interview process. The following deadlines are application submission guidelines only.

Fall, July 15 Spring, Dec. 1 Summer, April 15

New admissions are not accepted after classes begin.

Assessment

Prior to registering for classes, you must take the basic-skills assessment (ACCUPLACER) test and follow its placement requirements. The ACCUPLACER takes about 90 minutes and is available on a walk-in basis. Test times are listed in the current schedule. The test is free for new students; retesting is available for \$5. You will be placed in English as a second language, developmental or college classes as appropriate.

Guaranteed

Transfer to Universities

Many of your Red Rocks courses will transfer. Please consult with a Red Rocks academic advisor, as well as a transfer counselor at the institution you wish to attend.

Generally,

If you

- complete your AA or AS degree including 35 credits of state-guaranteed general education courses, and
- earn a C grade or better in each course,

Then

- at least 60 hours of your AA/AS degree will transfer completely, upon admission, to a baccalaureate Liberal Arts and Sciences program in Colorado's public four-year institutions*

And

- you are guaranteed to be able to finish your Liberal Arts and Sciences baccalaureate degree in just another 60 hours.

*See your transfer advisor as soon as possible for a list of applicable degrees. Special articulation agreements for Teacher Education, Business, Nursing and Engineering specify which lower-division credits you need.

Certain majors require essential lower-division courses. Please see an advisor for information about obtaining a transfer guide that will help you select lower-division credits to speed you on your way to finishing your baccalaureate degree.

Credit earned for prior learning, Advanced Placement, correspondence courses, CLEP and other credit from "testing out" of a course may not apply. The institution to which you transfer will evaluate these credits according to its own policies.

Housing/Family Homestay Assistance

American family homestay opportunities are often available to you, in addition to a variety of local housing arrangements.

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 full-time English instruction (20-25 hours per week) at six levels of beginning, intermediate and advanced skills.

Information: **303.914.6416, 303.914.6536 or 303.914.6538,**
international@rrcc.edu, www.rrcc.edu/international



Student services

Student services meet the needs of 7,000 diverse Red Rocks students.

From a hot meal to get you through the day to a fitness center to help you work off the calories, from child care to a job to a volleyball game to work off some energy, we've got something for every student.

Bookstore

The Red Rocks Bookstore supplies new and used textbooks, recommended titles, reference books and supplies for art and drafting. college specialty items and clothing are also available. Please visit us on the web at www.rccbstore.com

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

Child Care

The Children's Center at Red Rocks offers full-service, full-day care for children from 18 months to kindergarten entry. The high quality program provides secure and nurturing care. The center serves families of students, staff, faculty and the community. Some subsidies are available through the center for low-income families of students. 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 PED 110 or 111. 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 one-hour orientation. Upon completion of the orientation, arrange your own hours of participation to meet the course requirements.

Information: 303.914.6375

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 RRCC 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

The Lakewood Campus Student Center offers various services and activities including:

- Campus/community events and entertainment
- FAX and copy services
- Leadership opportunities
- Publications and bulletin boards
- Recreation
- Student clubs and organizations
- Student ID cards
- Bus passes, sports tickets and movie tickets
- Computers for academic and leisure use

Students who are taking courses at other RRCC 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 table, foosball, ping pong, vending machines, fitness center, coffee bar, The Den, the Student Life Desk, The Mart (vendor space) and the Student Project Center.

Information: 303.914.6370 or 303.914.6900

The Student Voice

The Student Voice represents the interests of the student body with the college's administration, in setting policy and planning various activities. To join The Student Voice, you must be an enrolled student, complete the application process and maintain a 2.5 GPA. It is an excellent opportunity to develop leadership skills that will assist you in your educational and professional endeavors.

Information: 303.914.6248



Student rights

As a Red Rocks student, you have specific rights that ensure you are treated equitably, that you are provided all you need to learn, and that your privacy is protected.

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 based on 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 State Board for Community Colleges and Occupational Education has approved the RRCC Affirmative Action/Equal Opportunity Program Plan (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 W. Sixth Avenue, Box 17
Lakewood, CO 80228-1255
303.914.6570

Other inquiries may be made to:

Vice President for Legal Affairs
Colorado Community College System
9101 E. Lowry Boulevard
Denver, CO 80230-6011
303.595.1549

or

Office for Civil Rights
U.S. Department of Education
Federal Building,
1244 Speer Boulevard, Ste. 310
Denver, CO 80204-3582
303.894.7822

Students with Disabilities

Red Rocks Community College offers many special services to students with disabilities. 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 based on disability.

Reasonable accommodation is provided upon request for persons with disabilities. If you require an accommodation to participate in any class, program, service or other activity at RRCC, contact the Office of Special Services.

Information: **303.914.6733** or direct line **303.914.6737** TTY

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 or abuse of alcohol 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 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,



Student rights

pancreatitis, cirrhosis of the liver, mental illness, death, low birth weight babies and babies with drug addictions. Personal relationships, family dynamics and 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 Prevent. Network **303.234.1288**
 Mile High Council on 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**.

Privacy Notification

The Family Educational Rights and Privacy Act of 1974 (FERPA) permits Red Rocks Community College to release "directory information" about you to interested parties. This does not include grades, but does include:

- Your name
- Address
- Telephone number
- Field of study
- Most recent previous school attended

- Photographic/videotaped images
- Date and place of birth
- Full-time or part-time status
- E-mail address
- Degrees, certificates and awards received
- Participation in officially recognized activities and sports
- Dates of attendance
- Grade level

If you do not want the college to 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: **303.914.6356**

Notification of Rights Under FERPA for Postsecondary Institutions

The Family Educational Rights and Privacy Act (FERPA) affords you certain rights with respect to your education records. For more information, contact the college registrar at **303.914.6303**.

Your rights include:

1. The right to inspect and review your education records within 45 days of the day Red Rocks Community College (RRCC) receives a request for access. You should submit to the Registrar or Coordinator of Student Records written requests that identify the record(s) you wish to inspect. The RRCC official will make arrangements for access and notify you of the time and place where the records may be inspected.
2. The right to request the amendment of education records that you believe are inaccurate or misleading. You may ask RRCC to amend a record that you believe is inaccurate or misleading. You should write the above RRCC official

responsible for the record, clearly identify the part of the record you want changed, and specify why it is inaccurate or misleading. If RRCC does not amend the record as you request, RRCC will notify you of the decision and advise you of the right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to you when you are notified of the right to a hearing.

3. The right to consent to disclosures of personally identifiable information contained in your 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 college in 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 college has 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 college advisory 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



Academics

Like you, Red Rocks takes your education seriously. It's our great pleasure to recognize the successes of Red Rocks students.

Academic Integrity

At RRCC, 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 we expect students to follow:

- 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, 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 to three hours of outside preparation for each hour spent in class. For example: A 15 credit load represents a commitment of 45-60 hours per week, consisting of 15 hours in class and 30-45 hours of outside preparation.

The average full-time course load is 15 credits for each fall and spring semester. During the summer semester, the average full-time course load is 12 credits. Students registering for fewer than 12 credits are classified as part-time. You need written permission from your advisor or the registrar to enroll for more than 20 credits during any semester.

Grades

Your final course grades are assigned at the end of each semester for classes taken during that semester.

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) or
2. Log on to www.rrcc.edu or
3. Call Student Records at 303.914.6356.

If you need an earlier grade report, contact the instructor.

Grading Symbols

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



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(AU) Audit. If you want to take a course without earning 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 credit for the course. The college will not award 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.

(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 may assign a grade of incomplete at his or her discretion. Before you are 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 to sign an Incomplete Grade Contract. If you do not complete the course work by the agreed upon deadline, the instructor will change the I to the letter grade stipulated in the contract.

(S) Satisfactory. Equivalent to a grade of C or higher and is only available for certain predesignated courses

(U) Unsatisfactory. Equivalent to less than a grade of C and is only available for certain predesignated courses

(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 to sign an SP Grade Contract. If you do not complete the course work by the agreed upon deadline, the instructor will change the SP to the letter grade stipulated in the contract.

(Z) No grade received. 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.

You must also take a minimum of 15 credits of new course work at RRCC 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.

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 credit hours assigned to that course. Attempted hours are not used to calculate your GPA.

Academic Second Chance

All course work taken at RRCC is reflected on your permanent transcript; however, you can initiate a petition to remove from your cumulative grade point average (GPA) up to 15 credits of substandard grades you earned. Before submitting the required written request, you must wait at least two years after the course work was completed.

Calculating your GPA

Prefix	Grade	Pts	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

$$\text{GPA} = \frac{\text{Total QPTS} = 35}{\text{Total QHRS} = 12} = 2.917$$



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(EHRS) Earned Credit Hours. If you earn a final course grade of A, B, C, D or S you will receive earned 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 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 GPA. Grading symbols: W, I, S, U, 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 credit hours (QHRS). The GPA's highest possible numerical value is 4.0.

Petitioning for Waivers/Program Substitutions

If 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. Complete the request, have it approved by your faculty advisor and the appropriate instructional dean, and submit it to Student Records, where it will be kept on file.

Information: 303.914.6353.

Repeating Courses

You may repeat any course. Each grade received is listed on your transcript. You may make a written request to Student Records for only the most recent grade to be used to calculate your GPA. Information: 303.914.6352.

Recognition of Achievement

Honors List

The Honors List recognizes students who have achieved an outstanding level of academic success at RRCC. 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 credits, a cumulative GPA of 3.85 (or higher);
- Taken at least 15 credits of course work through RRCC; 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 credits.

Information: 303.914.6353

Honors Program

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

Information: 303.914.6226

Phi Theta Kappa

Red Rocks sponsors a chapter of Phi Theta Kappa, the international honor society for two-year colleges. Members provide service to the college and the community, raise money for charity and conduct educational forums. To be eligible for membership, you must have completed at least 12 credits of study at RRCC, have a minimum GPA of 3.5 and a faculty letter of recommendation. Membership opportunities occur twice a year, once in the fall and once in the spring semesters.

Information: 303.914.6372

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, the Veterans Administration will suspend you from certification for one academic term. Reinstatement will only occur after approved counseling has been received.

Because credit is not given for audited courses, they 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.



Graduation

***Each year,
more than
1,300 students
graduate from
Red Rocks.***

***Our
graduates are
nurses and
builders, teach-
ers and engi-
neers,
artists and
programmers
and
firefighters.***

***What's in
your future?***

Catalog Requirements

You will graduate under the catalog requirements in effect for the semester that you were first enrolled. If you interrupt attendance for two consecutive semesters (excluding summer term) or more, and then return, you must meet the requirements of the catalog in effect at the time you re-enroll. You may choose to use the catalog that is in effect the semester you graduate. Be sure to keep a copy of your catalog.

Meet with an academic advisor before beginning any program of study. 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.

Graduation Requirements

1. You must earn a cumulative grade point average of 2.0 (C average). Some programs may require at least a B or C in specific courses.
2. The college reserves the right to substitute or delete courses in degree or certificate programs.
3. Not all programs or courses are available each semester.
4. Courses numbered below 100 will not count toward any degree or certificate.
5. You must submit an Application for Graduation during the term in which you intend to graduate, according to the deadline published in the class schedule for that session.



Degrees & Certificates

Look here for information about the degrees and certificates you can earn at Red Rocks, and the courses required for each.

Accounting	38	Facility Maintenance	80
Air Conditioning, Heating and Refrigeration	39	Fine Woodworking	80
Apprentice-Related Technology	44	Fire Protection Technology	82
Art	45	Fire Science Technology	83
Associate of Applied Science Degree	24, 33	Foreign Languages	86
Associate of Arts Transfer Degree, University Parallel	24, 25	Geology	86
Associate of General Studies – Generalist Career-Oriented Degree	24, 31	Health Professions	86
Associate of General Studies – Specialist Articulated Transfer Degree	24, 29	Heating	88
Associate of Science Transfer Degree, University Parallel	24, 27	History	88
Auto Collision Technology	45	HVAC/R	88
Automotive Service Technology	47	International Studies	88
Biology	49	Management/ Marketing	88
Biotechnology	49	Manufacturing Technology	89
Building Codes	50	Mathematics	91
Building Maintenance	50	Medical Office Technology	91
Business	50	Multimedia Graphic Design	93
Business Technology	52	Painting	96
Carpentry	53	Park Ranger Technology	96
Chemistry	54	Philosophy	97
Codes	54	Photography	98
Communication and Speech	54	Physical Education/ Outdoor Education	98
Computer Information Systems	55	Physician Assistant	100
Computer Science	62	Physics	101
Construction Technology	63	Plumbing	101
Criminal Justice	66	Political Science	103
Early Childhood Education Program	69	Pre-Nursing	103
Economics	71	Process Technology	103
Electricity Commercial/ Industrial/ Residential	72	Psychology	104
Elementary Education	75	Radiologic Technology	104
Emergency Management and Planning	76	Real Estate and Small Business Start-Up	105
Emergency Medical Services	77	Rocky Mountain Education Center (RMEC)	37
Engineering	78	Sociology	105
Engineering Graphics Technology	78	Speech and Communication	105
English	80	Teacher Education	105
Entrepreneurship	80	Theatre Arts	106
		Theatre Technology	107
		Water Quality Management Technology	109
		Woodworking	110

Course numbers and descriptions are subject to change. The Colorado Community College System has begun a project to set common course numbers and common competencies 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 website at www.cccs.edu/ccns/Home.html for updated information on course numbers and course competencies.



Associate degrees

Associate of Arts Transfer Degree, University Parallel

The Associate of Arts degree (60 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. This degree 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, you must complete the state designated general education requirements for a total of 35-37 credits. Other requirements are found on the degree requirement checklists and individual catalog emphasis areas. Emphases are available in the following areas:

- Art
- Business
- Communication Disorders
- Early Childhood Education
- Economics
- Elementary Education
- English and Literature
- Foreign Languages:
- French
- German
- History
- Humanities
- International Studies
- Musical Theatre
- Outdoor Physical Education
- Philosophy
- Political Science
- Psychology
- Sociology
- Spanish
- Speech and Communication
- Theatre Arts

Associate of Science Transfer Degree, University Parallel

The Associate of Science degree (60 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, engineering, nursing, mathematics, and the organic and physical sciences. To earn the Associate of Science degree, you must first complete the state designated general education requirements for a total of 36-39 credits. Emphases are available in the following areas:

- Biology
- Biotechnology
- Chemistry
- Computer Science
- Engineering
- Geology
- Mathematics
- Nursing
- Physics

Associate of General Studies – Specialist Articulated Transfer Degree

The Associate of General Studies-Specialist degree (60 credits) is for the student who wants to complete the Associate of Arts state designated general education transfer course requirements and have an emphasis in a career-oriented program of study. Transfer agreements exist between RRCC and certain four-year colleges for the following career areas:

- Criminal Justice
- Emergency Medical Services
- Graphics and Animation Technology
- Multimedia 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 a combination of college-level general education courses and a variety of vocational courses. Courses are considered for transfer on an individual basis by the receiving four-year college or university.

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; however, courses are considered for transfer on an individual basis by the receiving four-year college or university.

Degree Requirements

State-guaranteed general education courses (35-39 credits)

Communication: 2 courses	(6 credits)	Social and Behavioral Science: 3 courses (9 credits) Select 3 courses, 1 of which must be History, with no more than 2 courses from any 1 category
English 121 English Composition I	(3)	
English 122 English Composition II	(3)	
Mathematics: 1 course	(3 credits minimum)	History
MAT 120 Mathematics for the Liberal Arts	(4)	HIS 101 History of Western Civilization I (3)
MAT 121 College Algebra	(4)	HIS 102 History of Western Civilization II (3)
MAT 125 Survey of Calculus	(4)	HIS 201 U.S. History I (3)
MAT 135 Introduction to Statistics	(3)	HIS 202 U.S. History II (3)
MAT 201 Calculus I	(5)	Economic & Political Systems
MAT 202 Calculus II	(5)	ECO 201 Macro Economics (3)
Arts and Humanities: 3 courses	(9 credits)	ECO 202 Micro Economics (3)
Select 3 courses, with no more than 2 courses from any 1 category		POS 105 Introduction to Political Science (3)
		POS 111 American Government (3)
Arts		Geography
ART 110 Art Appreciation (3)		GEO 105 World Geography (3)
ART 111 Art History I (3)		Human Behavior & Social Systems
ART 112 Art History II (3)		ANT 101 Cultural Anthropology (3)
HUM 121 Survey of Humanities I (3)		ANT 111 Physical Anthropology (3)
HUM 122 Survey of Humanities II (3)		PSY 101 General Psychology I (3)
HUM 123 Survey of Humanities III (3)		PSY 102 General Psychology II (3)
MUS 120 Music Appreciation (3)		SOC 101 Introduction to Sociology I (3)
MUS 121 Music History I (3)		SOC 102 Introduction to Sociology II (3)
MUS 122 Music History II (3)		
THE 105 Introduction to Theatre Arts (3)		Physical and Life Sciences: 2 courses (8 credits minimum).
THE 211 Development of Theatre I (3)		Additional credits beyond 8 apply as electives toward AA degree
THE 212 Development of Theatre II (3)		AST 101 Astronomy I (4)
Literature		AST 102 Astronomy II (4)
LIT 115 Introduction to Literature (3)		BIO 105 Science of Biology (4)
LIT 201 Masterpieces of Literature I (3)		BIO 111 General College Biology I (5)
LIT 202 Masterpieces of Literature II (3)		BIO 112 General College Biology II (5)
Ways of Thinking		CHE 101 Introduction to Chemistry I (5)
PHI 111 Introduction to Philosophy (3)		CHE 111 General College Chemistry I (5)
PHI 112 Ethics (3)		CHE 112 General College Chemistry II (5)
PHI 113 Logic (3)		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 (23-25 credits) _____

SPE 115 or SPE 125

(This elective is required by the Colorado Community College System)

Each course is 3 credits and either of these two courses will fulfill this requirement.

Total Credits (60 required) _____

You will graduate under the catalog requirements listed for the semester that you were first enrolled. If you interrupt attendance for two consecutive semesters (excluding summer term) or more, and then return, you must meet the requirements of the catalog in effect at the time you re-enroll. You may choose to use the catalog that is in effect the semester you graduate. Be sure to keep a copy of your catalog.

Approved electives 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	Health and Wellness	HWE	100
Anthropology	ANT	All courses	History	HIS	All courses
Art	ART	All courses	Humanities	HUM	All courses
Astronomy	AST	All courses	Literature	LIT	All courses
Biology	BIO	All courses	Management	MAN	226
Business	BUS	115, 216, 217 and 226	Marketing	MAR	216
(See AA degree, emphasis in business)			Mathematics	MAT	All courses 120 and above
Chemistry	CHE	All courses	Music	MUS	All courses
Communications		All courses	Philosophy	PHI	All courses
Computer Info. Systems. (generally transferable)	CIS	115, 118, 243, 251, 268	Physical Education (Maximum 3 credits apply toward degree)	PED	All courses
Computer Science (generally transferable)	CSC	119, 160, 161, 165, 240, 261	Photography	PHO	All courses
Early Childhood Education	ECE	111, 112 and All courses above 200	Physics	PHY	All courses except 105
Economics	ECO	All courses	Political Science	POS	All courses
Education	EDU	All courses above 200	Psychology	PSY	101, 102, 110, 215, 226, 227, 235, 238 and 249
English	ENG	All courses above 122	Sociology	SOC	All courses
Environmental Science	ENV	101	Speech	SPE	All courses
Foreign Language	FRE, GER, SPA, FOL	All courses except 101, 102	Theatre	THE	All courses
Geography	GEO	All courses	Many 4-year colleges transfer guides are available via CCHE website at:		
Geology	GEY	All courses	http://www.state.co.us/cche/academic/transfer/guides.html		

Other AA degree requirements

1. A minimum of 60 credits is required for the Associate of Arts degree. These must include 35 credits in general education transfer courses and 25 credits in the areas specified above in approved electives.
2. You must complete 23-25 semester elective credits. These must be college-level transfer courses and may include no more than three credits in physical education (PED)—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 general education 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. The grade in all state general education transfer courses must be a C or better.
4. If you are planning to transfer to a four-year college or university, you should meet with an appropriate faculty advisor and consult the Transfer Guide.
5. You must complete a minimum of 15 credits 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. 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 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. 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.

Degree Requirements

State-guaranteed general education courses (36–39 credits)

Communication: 2 courses (6 credits)

English 121 English Composition I (3)
English 122 English Composition II (3)

Mathematics: 1 course (4 to 5 credit hours)

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

Arts & Humanities: 3 courses (9 credit hours)

Select 3 courses, with no more than 2 courses from any 1 category

Arts

ART 110 Art Appreciation (3)
ART 111 Art History I (3)
ART 112 Art History II (3)
HUM 121 Survey of Humanities I (3)
HUM 122 Survey of Humanities II (3)
HUM 123 Survey of Humanities III (3)
MUS 120 Music Appreciation (3)
MUS 121 Music History I (3)
MUS 122 Music History II (3)
THE 105 Introduction to Theatre Arts (3)
THE 211 Development of Theatre I (3)
THE 212 Development of Theatre II (3)

Literature

LIT 115 Introduction to Literature (3)
LIT 201 Masterpieces of Literature I (3)
LIT 202 Masterpieces of Literature II (3)

Ways of Thinking

PHI 111 Introduction to Philosophy (3)
PHI 112 Ethics (3)
PHI 113 Logic (3)

Social and Behavioral Science: 3 courses (9 credits)

Select 3 courses, 1 of which must be History, with no more than 2 courses from any 1 category

History

HIS 101 History of Western Civilization I (3)
HIS 102 History of Western Civilization II (3)
HIS 201 U.S. History I (3)
HIS 202 U.S. History II (3)

Economic & Political Systems

ECO 201 Macro Economics (3)
ECO 202 Micro Economics (3)
POS 105 Intro to Political Science (3)
POS 111 American Government (3)

Geography

GEO 105 World Geography (3)

Human Behavior & Social Systems

ANT 101 Cultural Anthropology (3)
ANT 111 Physical Anthropology (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)

Physical and Life Sciences: 2 courses (8 credits)

Additional credits beyond 8 will apply as electives toward AS degree

AST 101 Astronomy I (4)
AST 102 Astronomy II (4)
BIO 111 General College Biology I (5)
BIO 112 General College Biology II (5)
CHE 111 General College Chemistry I (5)
CHE 112 General College 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 (23-25 credits) _____

Total Credits (60 required) _____

You will graduate under the catalog requirements listed for the semester that you were first enrolled. If you interrupt attendance for two consecutive semesters (excluding summer) and then return, you must meet the requirements of the catalog in effect at the time you re-enroll. You may choose to use the catalog that is in effect the semester you graduate. You should be sure to keep a copy of your catalog.

Approved electives 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. For specific information, please consult an advisor in the Advising Center.

NOTE: To get the most out of your elective choices, examine your program of study found in the RRCC catalog or speak with your academic advisor.

Anthropology	ANT	All courses	Health and Wellness	HWE	100
Astronomy	AST	All courses	Mathematics	MAT	All course above 121
Biology	BIO	All courses except 105	Psychology	PSY	235
Chemistry	CHE	All courses	Physics	PHY	All courses except PHY 105
Computer Info. Sys.	CIS	118, 243, 251, 268	Speech	SPE	All courses
Computer Science	CSC	119, 160, 161, 165, 240, 261	* Please see an advisor for details.		
Economics	ECO	All courses	Many 4-year colleges transfer guides are available via CCHE website at:		
Education		All courses above 200	http://www.state.co.us/cche/academic/transfer/guides.html		
English		All courses above ENG 122			
Environmental Science	ENV	101			
Foreign Language*	FRE, GER, ITA, SPA	Except 101, 102			
Geography	GEO	All courses			
Geology	GEY	All courses			

Other AS degree requirements

1. A minimum of 60 credits is required for the Associate of Science degree.
2. You must complete an additional 18 credits in any of the science or math disciplines listed above. Please see an advisor in your program of study for specific course suggestions. Credits earned above the minimum to satisfy a requirement may be applied to a different area.
3. You must earn a cumulative grade point average of 2.0 (C average) in order to graduate. The grade in all state general education transfer courses must be a 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. See an advisor in the Advising Center at Red Rocks Community College (RRCC) and consult the Transfer Guide.
5. You must complete a minimum of 15 credits at RRCC.
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. 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 courses allowed to count toward a degree. In individual cases, the limit will be determined by the program of study. If you are taking special-topics courses, you should consult with your advisor regarding how these credits will apply toward a degree.
9. If you are applying for an additional degree at RRCC, you must complete an additional 15 credits at RRCC and the requirements for the degree.

Degree Requirements

State-guaranteed general education courses (35–37 credits)

Communication: 2 courses (6 credits)

- English 121 English Composition I (3)
- English 122 English Composition II (3)

Mathematics: 1 course (3 credits minimum)

- MAT 120 Mathematics for the Liberal Arts (4)
- MAT 121 College Algebra (4)
- MAT 125 Survey of Calculus (4)
- MAT 135 Introduction to Statistics (3)
- MAT 201 Calculus I (5)
- MAT 202 Calculus II (5)

Arts and Humanities: 3 courses (9 credits)

Select 3 courses with no more than 2 courses from any 1 category.

Arts

- ART 110 Art Appreciation (3)
- ART 111 Art History I (3)
- ART 112 Art History II (3)
- HUM 121 Survey of Humanities I (3)
- HUM 122 Survey of Humanities II (3)
- HUM 123 Survey of Humanities III (3)
- MUS 120 Music Appreciation (3)
- MUS 121 Music History I (3)
- MUS 122 Music History II (3)
- THE 105 Introduction to Theatre Arts (3)
- THE 211 Development of Theatre I (3)
- THE 212 Development of Theatre II (3)

Literature

- LIT 115 Intro to Literature (3)
- LIT 201 Masterpieces of Literature I (3)
- LIT 202 Masterpieces of Literature II (3)

Ways of Thinking

- PHI 111 Introduction to Philosophy (3)
- PHI 112 Ethics (3)
- PHI 113 Logic (3)

Social and Behavioral Science: 3 courses (9 credits)

Select 3 courses, 1 of which must be History, with no more than 2 courses from any 1 category

History

- HIS 101 History of Western Civilization I (3)
- HIS 102 History of Western Civilization II (3)
- HIS 201 U.S. History I (3)
- HIS 202 U.S. History II (3)

Economic & Political Systems

- ECO 201 Macro Economics (3)
- ECO 202 Micro Economics (3)
- POS 105 Introduction to Political Science (3)
- POS 111 American Government (3)

Geography

- GEO 105 World Geography (3)

Human Behavior & Social Systems

- ANT 101 Cultural Anthropology (3)
- ANT 111 Physical Anthropology (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)

Physical and Life Sciences: 2 courses (8 credits minimum)

Additional credits beyond 8 apply as electives toward AA degree

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

Electives – only in Criminal Justice, Early Childhood Professions, Emergency Medical Services, Graphics and Animation Technology, Multimedia Technology, or Production and Design Technology (23-25 credits)

See area of emphasis for required electives. See a faculty advisor for course information.

Total credits (60 required) _____

You will graduate under the catalog requirements listed for the semester that you were first enrolled. If you interrupt attendance for two consecutive semesters (excluding summer term) or more, and then return, you must meet the requirements of the catalog in effect at the time you re-enroll. You may choose to use the catalog that is in effect the semester you graduate. Be sure to keep a copy of your catalog.

Other AGS-Specialist degree requirements

1. A minimum of 60 credits is required for the Associate of General Studies degree. These must include 35 to 37 credits in general education transfer courses and 23 to 25 credits in your area of emphasis. Please see your advisor.
2. You must earn a cumulative grade point average of 2.0 (C average) in order to graduate. The grade in all state general education transfer courses must be a C or better.
3. You must complete a minimum of 15 credits in your program area at Red Rocks.
4. 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. You must apply to graduate within one year of completing requirements.
5. No more than six credits of independent study course work may be applied toward an associate degree program.
6. 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.
7. The college reserves the right to substitute or delete courses.
8. 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.
9. With the approval of a faculty advisor, up to three credits of internship may count toward a degree.

Degree Requirements

The AGS -- Generalist degree is available if you would like to complete a broad program of both college transfer and/or career courses without the constraints of specialization. The AGS general education course requirements transfer to 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.

General education requirements (16 credits)

Communication:	(3 credits)	Social and Behavioral Science:	(3credits)
ENG 121 English Composition I		Select one course from the following list.	
Mathematics:	(3 credits minimum)	ANT 101 Cultural Anthropology	(3)
Select one course from the following list.		ANT 111 Physical Anthropology	(3)
MAT 120 Mathematics for the Liberal Arts (4)		ECO 201 Macro Economics	(3)
MAT 121 College Algebra (4)		ECO 202 Micro Economics	(3)
MAT 125 Survey of Calculus (4)		GEO 105 World Geography	(3)
MAT 135 Introduction to Statistics (3)		HIS 101 History of Western Civilization I	(3)
MAT 201 Calculus I (5)		HIS 102 History of Western Civilization II	(3)
MAT 202 Calculus II (5)		HIS 201 U.S. History I	(3)
Arts and Humanities:	(3 credits)	HIS 202 U.S. History II	(3)
Select one course from the following list.		POS 105 Introduction to Political Science	(3)
ART 110 Art Appreciation (3)		POS 111 American Government	(3)
ART 111 Art History I (3)		PSY 101 General Psychology I	(3)
ART 112 Art History II (3)		PSY 102 General Psychology II	(3)
HUM 121 Survey of Humanities I (3)		SOC 101 Introduction to Sociology I	(3)
HUM 122 Survey of Humanities II (3)		SOC 102 Introduction to Sociology II	(3)
HUM 123 Survey of Humanities III (3)		Science:	(4 credits minimum)
LIT 115 Intro to Literature (3)		Select one course from the following list.	
LIT 201 Masterpieces of Literature I (3)		AST 101 Astronomy I	(4)
LIT 202 Masterpieces of Literature II (3)		AST 102 Astronomy II	(4)
MUS 120 Music Appreciation (3)		BIO 105 Science of Biology	(4)
MUS 121 Music History I (3)		BIO 111 General College Biology I	(5)
MUS 122 Music History II (3)		BIO 112 General College Biology II	(5)
PHI 111 Introduction to Philosophy (3)		CHE 101 Introduction to Chemistry I	(5)
PHI 112 Ethics (3)		CHE 111 General College Chemistry I	(5)
PHI 113 Logic (3)		CHE 112 General College Chemistry II	(5)
THE 105 Introduction to Theatre Arts (3)		GEY 111 Physical Geology	(4)
THE 211 Development of Theatre I (3)		GEY 121 Historical Geology	(4)
THE 212 Development of Theatre II (3)		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)

College level electives—(14 credits)

Select any generally transferable academic courses from the list on the next page.

General electives—(30 credits)

Select any courses numbered 100 or above.

Total Credits (60 required) _____

You will graduate under the catalog requirements listed for the semester that you were first enrolled. If you interrupt attendance for two consecutive semesters (excluding summer term) or more, and then return, you must meet the requirements of the catalog in effect at the time you re-enroll. You may choose to use the catalog that is in effect the semester you graduate. Be sure to keep a copy of your catalog.

Courses numbered below 100 do not count toward any degree.

Approved elective credit courses for the Associate of General Studies–Generalist 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-Generalist 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	Literature	LIT	All courses
Anthropology	ANT	All courses	Management	MAN	226
Art	ART	All courses	Marketing	MAR	216
Astronomy	AST	All courses	Mathematics	MAT	All courses 120 and above
Biology	BIO	All courses	Music	MUS	All courses
Business	BUS	115, 216, 217 and 226	Philosophy	PHI	All courses
Chemistry	CHE	All courses	Physical Education	PED	All courses
Computer Info. Systems.	CIS	115, 118, 243, 251, 268	(Maximum 3 credits apply toward degree)		
Computer Science	CSC	119, 160, 161, 165, 240, 261	Photography	PHO	All courses
Early Childhood Education	ECE	111, 112 and All courses above 200	Physics	PHY	All courses except 105
Economics	ECO	All courses	Political Science	POS	All courses
Education	EDU	All courses above 200	Psychology	PSY	101, 102, 110, 215, 226 227, 235, 238 and 249
English	ENG	All courses above 122	Sociology	SOC	All courses
Environmental Science	ENV	101	Speech	SPE	All courses
Foreign Language	FRE, GER, SPA, FOL	All courses except 101, 102	Theatre	THE	All courses
Geography	GEO	All courses			
Geology	GEY	All courses	Many 4-year colleges transfer guides are available via CCHE website at:		
Health and Wellness	HWE	100			
History	HIS	All courses			
Humanities	HUM	All courses			

<http://www.state.co.us/cche/academic/transfer/guides.html>

Other AGS-Generalist degree requirements

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 meet with an appropriate faculty advisor and consult the Transfer Guide.
4. You must complete a minimum of 15 credits at Red Rocks.
5. 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. You must apply to graduate within one year of completing requirements
6. No more than 6 credits of independent study course work may be applied toward an associate degree program.
7. 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.
8. 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.
9. With the approval of a faculty advisor, up to three credits of internship may count toward a degree.

The Associate of Applied Science degree is for the student who is preparing for entry-level employment in a career-oriented program of study or upgrading skills in a specific occupation.

This degree is not intended for transfer; however, courses are considered for transfer on an individual basis by the receiving 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.
2. If you are planning to transfer to a four-year college or university, you should meet with an appropriate faculty advisor and consult the Transfer Guide.
3. You must complete a minimum of 15 credits in your program area at Red Rocks.
4. No more than six credits of independent study course work may be applied toward an associate degree program.
5. There is no limit on special-topics courses that 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 faculty advisor regarding how these credits will apply toward a degree.
6. The college reserves the right to substitute or delete courses in a degree or certificate program.
7. 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.
8. 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)

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 with emphases in:
Management and Supervision*
Real Estate*
Interdisciplinary

Business Technology with emphasis in:

Administrative Professional

Computer Information Systems* with emphases in:

Cisco Network Associate*
Computer Support Technician*
Microsoft Application Developer (MCAD)*
Microsoft Database Administrator (MCDBA)*
Microsoft Network System Administrator(MCSA)*
Microsoft Network System Engineer (MCSE)*
PC Application Specialist*
Programming Specialist*
Web Design*
Web Development*

Construction Technology with emphases in:

Air Conditioning, Heating and Refrigeration*
Refrigeration*
Air Conditioning*
Residential Heating, Ventilation, Air Conditioning
Building Automation
Building Code Enforcement*
Building Maintenance Technician*
Carpentry *
Construction Management*
Construction Technology Technician*
Electrical
Construction Electrician* (CCOnline)
Heating
Hydronic Heating
IEBW/NECA Construction Technician
Power Technology (CCOnline)
Fine Woodworking*
Fire Protection Technology
Line Technician

The Associate of Applied Science degree is for the student who is preparing for entry-level employment in a career-oriented program of study or upgrading skills in a specific occupation.

<p>Plumbing United Association of Plumbing and Pipefitting Trades Degree</p> <p>Apprentice-related Technology with emphases in: (In partnership with the CITC) Carpentry* Electrical* Masonry* Painting* Plumbing* Sheetmetal*</p> <p>Criminal Justice* with emphases in: Corrections Law Enforcement Victim Assistance Direct Service*</p> <p>Early Childhood Education</p> <p>Emergency Management and Planning* (CCCOnline)</p> <p>Engineering Graphics Technology with emphases in: Architecture* Mechanical*</p>	<p>Fire Science Technology with emphases in: Fire Science Technology Fire Science Management</p> <p>Medical Assisting*</p> <p>Medical Office*</p> <p>Multimedia Technology with emphases in: Graphics/Animation Technology* Motion Graphics Animation* Production and Design Technology*</p> <p>Outdoor Education</p> <p>Paramedicine</p> <p>Paraeducator</p> <p>Physical Education</p> <p>Public Administration (through CCCOnline)</p> <p>Radiologic Technology</p> <p>Theatre Technology*</p> <p>Water Quality Management Technology * Certificate is also available.</p>
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Degree Requirements

(See faculty advisor for degree worksheet.)

Specific program requirements (45-60 credits)

General education requirements (15 credits)

Communications
(ENG, COM, or SPE)

Mathematics
(MAT 106 and above)

3 **Credit from any two of the following three areas:** **6**
Arts and Humanities (ART, CMD, COM, FRE, GER, HUM, LIT, MUS, PHI, SPE, SPA, THE)
3 Science (AST, BIO, CHE, GEY, PHY)
Social Science (ANT, ECO, HIS, POS, PSY, SOC)

Electives from any of the above subjects: **3**
Note: Individual departments may specify particular courses for general education.

You will graduate under the catalog requirements listed for the semester that you were first enrolled. If you interrupt attendance for two consecutive semesters (excluding summer term) or more, and then return, you must meet the requirements of the catalog in effect at the time you re-enroll. You may choose to use the catalog that is in effect the semester you graduate. Be sure to keep a copy of your catalog.

Courses numbered below 100 will not count toward any degree.

Other AAS Degree Requirements

1. You must earn a cumulative grade point average of 2.0 (C average) in order to graduate.
2. If you are planning to transfer to a four-year college or university, you should meet with an appropriate faculty advisor and consult the Transfer Guide.
3. You must complete a minimum of 15 credits in your program area at Red Rocks.
4. 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.) You must apply to graduate within one year of completing requirements.
5. No more than six credits of independent study course work may be applied toward an associate degree program.
6. 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.
7. The college reserves the right to substitute or delete courses in a degree or certificate program.
8. 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.
9. With the approval of a faculty advisor, no more than five credits of internship may count toward a degree. (Some AAS degrees will require internship credits.)

Certificates



In addition to two-year degrees, Red Rocks students can earn certificates in a variety of specialties.

A certificate can require as few as five credits and may count toward a two- or four-year degree.

1. You must earn a cumulative grade point average of 2.0. Some programs may require at least a C in specified courses.
2. You must complete at least 50 percent of your coursework at Red Rocks to receive a certificate.
3. The college reserves the right to substitute or delete courses in a degree or certificate program.

Basic Law Enforcement Training Academy

Business:

- Accounting Clerk
- Bookkeeping Clerk
- Management and Supervision
- Small Business Start Up
- Real Estate

Business Technology:

- Clerical Assistant
- Office Professional

Computer Information Systems:

- Cisco Network Associate
- Computer Support Technician
- Microsoft Application Developer (MCAD)
- Microsoft Database Administrator (MCDBA)
- Microsoft Network System Administrator(MCSA)
- Microsoft Network System Engineer (MCSE)
- PC Application Specialist
- Programming Specialist
- Web Design
- Web Development

Construction Technology:

- Air Conditioning
- Building Automation
- Building Code
- Building Code Enforcement
- Building Maintenance Technician
- Carpentry
- Colorado Plumbing Code Test Preparation
- Commercial Refrigeration Apprenticeship
- Comprehensive Residential Heating
- Construction Electrician
- Construction Fundamentals
- Construction Management
- Construction Technology Technician
- Control System Technician
- Electrical Installation
- Fire Alarm and Detection Technician
- Fire Code
- Forced Air Heating
- HVAC
- HVAC Apprenticeship

- HVAC Controls Technician
- Hydronic Heating
- International Residential Code
- International Plumbing & Mechanical Codes
- Journey Level Plumbing
- Level I Refrigeration
- Level II Refrigeration
- Maintenance Electrician
- National Electrical Code
- Plumbing and Heating Maintenance (Basic)
- Refrigeration
- Residential Construction Electrician
- Residential Plumbing
- Residential Plumbing and Heating
- Post-Degree Specialization:
 - Advanced Construction Electrician
 - Advanced Maintenance Electrician

Criminal Justice:

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

Early Childhood Education:

- Preschool Group Leader
- Infant/Toddler Group Leader
- School-age Child Care
- Director

Emergency Management and Planning

Emergency Medical Services:

- Emergency Medical Technician Certificate I
- Emergency Medical Technician Certificate II

Engineering Graphics:

- Architectural
- Industry Upgrade
- Mechanical

Fine Woodworking:

- General Fine Woodworking
- Woodworking Fundamentals
- Wood Turners
- Luthier Fundamental
- Cabinetmaker
- Craftsman
- Joiner
- Artisan
- Post-Degree Master Craftsman

Fire Science:

- Drive Operator
- Firefighter I
- Fire Inspector
- Fire Instructor
- Fire Investigator
- Fire Officer I
- Fire Officer II
- Fire Officer III
- Hazardous Materials



Certificates

degrees & certificates

Technical Heavy Rescue
Wildland Management

Health Careers:

Holistic Health/Holistic Nursing
L.P.N. Refresher
Medical Assisting
Medical Office
Nurse Aide
Physician Assistant
Phlebotomy
R.N. Refresher

Multimedia Technology:

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

Paraeducator

Park Ranger Technology:

Law Enforcement
Outdoor Recreation
Public Safety
Resource Interpretation

Outdoor Recreation Leadership:

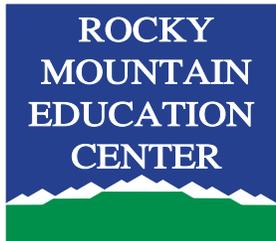
Outdoor Generalist
Mountaineering Skills
Winter Skills
Water-based Skills

Theatre:

Stagehand Basics
Stagecraft
Costume Basics
Costume and Fashion



Noncredit



Rocky Mountain Education Center (RMEC)

Continuing Education/Workforce Development

The Rocky Mountain Education Center (RMEC), located at the Lakewood campus, is the continuing education department of Red Rocks Community College. Our mission has expanded over the years from environmental safety and health training to include all professional workforce development training. In 1992, the Department of Labor/OSHA selected RRCC as one of four training centers in the U.S. to offer OSHA training. We are the Department of Labor's only authorized OSHA Training Institute in region VIII which consists of CO, WY, MT, SD, ND and UT.

The RMEC specializes in customizing all facets of health, safety management and supervisory training programs. From computer training to basic skills, we are your one-stop training organization dedicated to providing high quality, effective and affordable training to our customers. As with all our programs, we can customize each course to fit your organization's needs and bring that course to your company. To receive a schedule of courses call or visit our website at www.rrcc.edu/rmec

Information: 303.914.6420

The RMEC provides workforce development in areas from health and safety to software applications and management strategies.

Accounting

Degrees: Associate of Applied Science

**Accounting Paraprofessional
Accounting Technician**

Certificates:

**Bookkeeping Clerk
Accounting Clerk**

If you plan to transfer to a four-year college or university to complete a major in accounting you should consider the AA degree with a business emphasis. You should consult with an accounting faculty advisor early in your college career to explore all your educational options. You must earn a C or better in all accounting courses to graduate with a degree or certificate in accounting.

AAS degree:

Accounting Paraprofessional

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

Required Courses

ACC 121 Accounting Principles I	4
ACC 122 Accounting Principles II	4
ACC 131 Income Tax I	3
ACC 135 Spreadsheet Applications for Accounting	3
ACC 138 Payroll and Sales Tax	3
ACC 211 Intermediate Accounting I	4
ACC 226 Cost Accounting	3
ACC 245 Computerized Accounting with a Professional Package	3
BTE 108 Ten-Key by Touch or elective with faculty advisor approval	1
BUS 115 Introduction to Business	3
BUS 216 Legal Environment of Business	3
BUS 217 Business Communication & Report Writing	3
CIS 118 Introduction to PC Applications	3
Approved Electives: See faculty advisor	5

General Education Courses Required

COM 105 Career Communication or	
SPE 125 Interpersonal Communication	3
ENG 121 English Composition I	3

MAT 107 Career Math/Business or Any higher MAT course	3
Credit from two of the following areas: Social Science, Arts and Humanities, Science	6
Total Required Credits	60

AAS degree: Accounting Technician

This program prepares you to perform bookkeeping and accounting tasks.

Required Courses

ACC 101 Fundamentals of Accounting or elective with faculty advisor approval	3
ACC 121 Accounting Principles I	4
ACC 122 Accounting Principles II	4
ACC 135 Spreadsheet Applications for Accounting	3
ACC 138 Payroll and Sales Tax	3
ACC 245 Computerized Accounting with a Professional Package	3
BTE 108* Ten-Key by Touch or elective with faculty advisor approval	1
BUS 115 Introduction to Business	3
BUS 216 Legal Environment of Business	3
BUS 217 Business Communication & Report Writing	3
CIS 118 Introduction to PC Applications	3
CIS 135 Complete PC Word Processing	3

Approved Electives: See faculty advisor 9

General Education Courses Required

COM 105 Career Communications or	
SPE 125 Interpersonal Communication	3
ENG 121 English Composition I	3
MAT 107 Career Math/Business or any higher MAT course	3

Credit from two of the following areas

Social Science, Arts and Humanities, Science	6
Total Required Credits	60

Accounting Certificate: Bookkeeping Clerk

Completing this program prepares you to perform entry-level bookkeeping and accounting tasks.

Required Courses	Credits
ACC 101 Fundamentals of Accounting or	3
ACC 121 Accounting Principles I	4
ACC 138 Payroll and Sales Tax	3
BTE 100 Computer Keyboarding or elective with faculty advisor approval	1
BTE 108 Ten-Key by Touch or elective with faculty advisor approval	1
BUS 115 Introduction to Business	3
CIS 118 Introduction to PC Applications	3
Total Required Credits	14

Accounting Certificate: Accounting Clerk

Completing this program prepares you 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	Credits
ACC 101 Fundamentals of Accounting or elective with faculty advisor approval	3
ACC 121 Accounting Principles I	4
ACC 122 Accounting Principles II	4
ACC 135 Spreadsheet Applications for Accounting	3
ACC 138 Payroll and Sales Tax	3
ACC 245 Computerized Accounting with a Professional Package	3
BTE 100 Computer Keyboarding or elective with faculty advisor approval	1
BTE 108 Ten-Key by Touch or elective with faculty advisor approval	1
BUS 115 Introduction to Business	3
CIS 118 Introduction to PC Applications	3
COM 105 Career Communications or	
SPE 125 Interpersonal Communications	3
Total Required Credits	31

Air Conditioning, Heating and Refrigeration (HVA)

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

Degrees:

**Air Conditioning, Heating and
Refrigeration**
Refrigeration
Air Conditioning
Building Automation
Hydronic Heating
Heating

Certificates:

Level I Refrigeration
HVAC Controls Technician
Level II Refrigeration
Building Automation
Control Systems Technician
Comprehensive Heating
Refrigeration
Air Conditioning
Forced-Air Heating
Heating, Ventilation, Air Conditioning
(HVAC)
Hydronic Heating
Air Conditioning, Heating/Refrigeration
Apprenticeship program
Commercial Refrigeration
Apprenticeship program
Basic Plumbing/Heating Maintenance
(see Construction Technology)

AAS Degree: Air Conditioning, Heating and Refrigeration

Required Courses	Credits
HVA 100 Safety for the Trades	0.5
HVA 102 Basic Refrigeration	4
HVA 105 Electricity for HVAC/R	4
HVA 110 Fundamentals of Gas Heating	4
HVA 113 Refrigerant Recovery Training	1
HVA 132 Air Conditioning and Refrigeration Controls	4
HVA 134 Air Conditioning Systems	4
HVA 162 Heating Controls	4
HVA 206 International Mechanical Code	4
HVA 240 Servicing Forced Air Systems	4
HVA 247 Hot Water Heating Systems	4
General Education Requirements See Page 63	15
Construction Technology Requirements See Page 63	10
Total Required Credits	62.5

AAS Degree: Refrigeration

Required Courses	Credits
HVA 100 Safety for the Trades	0.5
HVA 111 Piping Skills	4
HVA 102 Basic Refrigeration	4
HVA 105 Electricity for HVAC/R	4
HVA 113 Refrigerant Recovery Training	1
HVA 122 Commercial Refrigeration	4
HVA 132 Refrigeration and Air Conditioning Controls	4
HVA 206 International Mechanical Code	4
HVA 231 Pneumatic Controls	4
HVA 233 Evaporative Cooling Systems and Water Treatment	4
HVA Electives	4
General Education Requirements See Page 63	15
Construction Technology Requirements See Page 63	10
Total Required Credits	62.5

AAS Degree: Air Conditioning

Required Courses	Credits
HVA 100 Safety for the Trades	0.5
HVA 111 Piping Skills	4
HVA 102 Basic Refrigeration	4
HVA 105 Electricity for HVAC/R	4
HVA 113 Refrigerant Recovery Training	1
HVA 132 Air Conditioning/Refrigeration Controls	4
HVA 134 Air Conditioning Systems	4
HVA 140 Basic Sheet Metal	4
HVA 206 International Mechanical Code	4
HVA 260 Estimating HVAC/R Systems	4
HVA 261 Air Conditioning Systems Service and Repair	4
General Education Requirements See Page 63	15
Construction Technology Requirements See Page 63	10
Total Required Credits	62.5

AAS Degree: Building Automation

Required Courses	Credits
HVA 100 Safety for the Trades	0.5
HVA 102 Basic Refrigeration	4
HVA 105 Electricity for HVAC/R	4
HVA 113 Refrigerant Recovery Training	1
HVA 132 Air Conditioning/Refrigeration Controls	4
HVA 134 Air Conditioning Systems	
HVA 231 Pneumatic controls	4
HVA 251 Building Automation 1	4
HVA 253 Building Automation 2	4
HVA 252 Building Automation 3	4
HVA 261 Air Conditioning Systems Service and Repair	4
General Education Requirements See Page 63	15
Construction Technology Requirements See Page 63	10
Total Required Credits	62.5

AAS Degree: Hydronic Heating

Required Courses	Credits
HVA 110 Fundamentals of Gas Heating	4
HVA 105 Electricity for HVAC/R	4
HVA 111 Piping Skills	4
HVA 257 Low Pressure Steam Heating	4
HVA 162 Heating Controls	4
PLU 208 International Fuel Gas Code	4
HVA 247 Hot Water Heating Systems	4
HVA 267 Radiant Heating Systems	4
HVA 206 International Mechanical Code	4
General Education Requirements See Page 63	15
Construction Technology Requirements See Page 63	10
Total Required Credits	61

AAS Degree: Heating

Required Courses	Credits
HVA 111 Piping Skills	4
HVA 105 Electricity for HVAC/R	4
HVA 110 Fundamentals of Gas Heating	4
HVA 140 Basic Sheet Metal	4
HVA 162 Heating Controls	4
HVA 206 International Mechanical Code	4
PLU 208 International Fuel Gas Code	4
HVA 247 Hot Water Heating Systems	4
HVA 257 Low Pressure Steam Heating	4
General Education Requirements See Page 63	15
Construction Technology Requirements See Page 63	10
Total Required Credits	61

Certificate: Level I Refrigeration

Required Courses	Credits
HVA 100 Safety for the Trades	0.5
HVA 102 Basic Refrigeration	4
HVA 105 Electricity for HVAC/R	4
HVA 113 Refrigerant Recovery Training	1
Total Required Credits	9.5

Certificate: HVAC Controls Technician

Required Courses	Credits
HVA 105 Electricity for HVAC/R	4
HVA 132 Air Conditioning/Refrigeration Controls	4
HVA 162 Heating Controls	4
HVA 231 Pneumatic Controls	4
Total Required Credits	16

Certificate: Level II Refrigeration

Required Courses	Credits
HVA 100 Safety for the Trades	0.5
HVA 102 Refrigeration fundamentals	4
HVA 105 Electricity for HVAC/R	4
HVA 113 Refrigeration recovery certificate	1
HVA 132 Air Conditioning/Refrigeration Controls	4
HVA 233 Advanced Refrigeration	
or	
HVA 261 A/C Systems Service and repair	4
Total Required Credits	17.5

Certificate: Building Automation

Required Courses	Credits
HVA 132 Air Conditioning/Refrigeration Controls	4
HVA 134 Air Conditioning Systems	4
HVA 231 Pneumatic Controls	4
HVA 251 Building Automation 1	4
HVA 252 Building Automation 2	4
HVA 253 Building Automation 3	4
Total Required Credits	24

Certificate: Control Systems Technician

Required Courses	Credits
HVA 105 Electricity for HVAC/R	4
HVA 132 Air Conditioning/Refrigeration Controls	4
HVA 162 Heating Controls	4
HVA 231 Pneumatic Controls	4
EIC 220 Industrial Electrical Controls	4
EIC 225 Programmable Controls	4
EIC 240 Fire Alarm Fundamentals	4
Total Required Credits	28

Certificate: Comprehensive Heating

Required Courses	Credits
HVA 111 Piping Skills	4
HVA 105 Electricity for HVAC/R	4
HVA 110 Fundamentals of Gas Heating	4
HVA 140 Basic Sheet Metal	4
PLU 150 Code and Piping Calculations	4
HVA 162 Heating Controls	4
HVA 206 International Mechanical Code	4
PLU 208 International Fuel Gas Code	4
HVA 240 Servicing Forced Air Systems	4
HVA 247 Hot Water Heating Systems	4
HVA 257 Low Pressure Steam Heating	2
HVA 260 Estimating Residential HVAC Systems	4
HVA 267 Radiant Heating Systems	4
CON 105 Construction Technology	4
CON 230 Construction Blueprint Reading	4
CON 251 Construction Process	4
Total Required Credits	62

Certificate: Refrigeration

Required Courses	Credits
HVA 100 Safety for the Trades	0.5
HVA 102 Basic Refrigeration	4
HVA 105 Electricity for HVAC/R	4
HVA 111 Piping Skills	4
HVA 113 Refrigerant Recovery Training	1

HVA 122 Commercial Refrigeration	4
or	
HVA 233 Advanced Refrigeration	4
HVA 132 A/C and Refrigeration Controls	4
HVA 206 International Mechanical Code	4
HVA XXX HVA Electives	4
Total Required Credits	29.5

Certificate: Air Conditioning

Required Courses	Credits
HVA 100 Safety for the Trades	0.5
HVA 111 Piping Skills	4
HVA 102 Basic Refrigeration	4
HVA 105 Electricity for HVAC/R	4
HVA 113 Refrigerant Recovery Training	1
HVA 132 Air Conditioning and Refrigeration Controls	4
HVA 134 Air Conditioning Systems	4
HVA 140 Basic Sheet Metal	4
HVA 206 International Mechanical Code	4
HVA 261 Air Conditioning Systems Service and Repair	4
Total Required Credits	33.5

Certificate: Forced-Air Heating

Required Courses	Credits
HVA 105 Electricity for HVAC/R	4
HVA 110 Fundamentals of Gas Heating	4
HVA 140 Basic Sheet Metal	4
PLU 150 Code and Piping Calculations	2
HVA 162 Heating Controls	4
HVA 202 International Residential Code Mechanical and Fuel Gas	2
HVA 206 International Mechanical Code	4
PLU 208 International Fuel Gas Code	4
HVA 240 Servicing Residential Forced Air Systems	4
Total Required Credits	32

Certificate: HVAC

Required Courses	Credits
HVA 100 Safety for the Trades	0.5
HVA 102 Basic Refrigeration	4
HVA 105 Electricity for HVAC/R	4
HVA 110 Fundamentals of Gas Heating	4
HVA 111 Piping Skills	4
HVA 113 Refrigeration Recovery Training	1
HVA 132 Air Conditioning and Refrigeration Controls	4
HVA 134 Air Conditioning Systems	4
HVA 140 Basic Sheet Metal	4
PLU 150 Code and Piping Calculations	2
HVA 162 Heating Controls	4
HVA 200 International Residential Code Mechanical and Fuel Gas	2
HVA 206 International Mechanical Code	4
PLU 208 International Fuel Gas Code	4
HVA 240 Servicing Forced Air Systems	4
HVA 247 Hot Water Heating Systems	4
HVA 260 Estimating Residential HVAC Systems	4
HVA 261 Air Conditioning Systems Service And Repair	4
HVA 267 Radiant Heating Systems	4
Total Required Credits	65.5

Certificate: Hydronic Heating

Required Courses	Credits
HVA 111 Piping Skills	4
HVA 105 Electricity for HVAC/R	4
HVA 110 Fundamentals of Gas Heating	4
HVA 162 Heating Controls	4
HVA 206 International Mechanical Code	4
PLU 208 International Fuel Gas Code	4
HVA 247 Hot Water Heating Systems	4
HVA 257 Low Pressure Steam Heating	4
HVA 267 Radiant Heating Systems	4
Total Required Credits	36

Certificate: Air Conditioning, Heating/Refrigeration Apprenticeship Program

Required Courses	Credits
HVA 100 Safety for the Trades	0.5
HVA 102 Basic Refrigeration	4
HVA 105 Basic Electricity	4
HVA 110 Fundamentals of Gas Heating	4
HVA 113 Refrigerate Recovery Training	1
HVA 132 Air Conditioning and Refrigeration Controls	4
HVA 140 Basic Sheet Metal	4
HVA 162 Heating Controls	4
PLU 208 International Fuel Gas Code	4
HVA 206 International Mechanical Code	4
or	
CON 230 Blueprint Reading	4
Total Required Credits	33.5

Certificate: Commercial Refrigeration Apprenticeship Program

Required Courses	Credits
HVA 100 Safety for the Trades	.5
HVA 111 Piping Skills	4
HVA 102 Basic Refrigeration	4
HVA 105 Basic Electricity	4
HVA 113 Refrigerate Recovery Training	1
HVA 122 Commercial Refrigeration I	4
HVA 132 Air Conditioning and Refrigeration Controls	4
HVA 206 International Mechanical Code	4
HVA 258 Independent Study	4
CON 105 Construction Technology	4
or	
CON 230 Blueprint Reading	4
Total Required Credits	33.5

Apprentice-Related Technology

Degree:
Associate of Applied Science

Apprentice-Related

Certificates:

Apprentice- Related Carpentry

Apprentice- Related Electrical

Apprentice- Related Masonry

Apprentice- Related Painting

Apprentice- Related Plumbing

Apprentice- Related Sheet Metal

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.

AAS Degree:

Apprentice-Related

(Applicable Trade)

General Education Requirements 15
See Page 63

Construction Technology Requirements 10
See Page 63

Apprentice Trade-Related Certificate 16-40

Construction Technology Electives 4-20
(see CT Advisor)

Total Required Credits 60-85

Certificate:

Apprentice- Related Carpentry

Required Courses	Credits
ARE 110 Carpentry I	4
ARE 120 Carpentry II	4
ARE 130 Carpentry III	4
ARE 140 Carpentry IV	4
ARE 210 Carpentry V	4
ARE 220 Carpentry VI	4
ARE 230 Carpentry VII	4
ARE 240 Carpentry VIII	4
Total Required Credits	32

Certificate:

Apprentice- Related Electrical

Required Courses	Credits
ARE 112 Electrical I	4
ARE 122 Electrical II	4
ARE 132 Electrical III	4
ARE 142 Electrical IV	4
ARE 152 Electrical V	4
ARE 157 Electrical VI	4
ARE 162 Electrical VII	4
ARE 167 Electrical VIII	4
Total Required Credits	32

Certificate:

Apprentice- Related Masonry

Required Courses	Credits
ARE 113 Masonry I	4
ARE 123 Masonry II	4
ARE 133 Masonry III	4
ARE 143 Masonry IV	4
ARE 153 Masonry V	4
ARE 163 Masonry VI	4
Total Required Credits	24

Certificate:

Apprentice- Related Painting

Required Courses	Credits
ARE 111 Painting I	4
ARE 121 Painting II	4
ARE 131 Painting III	4
ARE 141 Painting IV	4
ARE 151 Painting V	4
ARE 156 Painting VII	4
Total Required Credits	24

Certificate:

Apprentice- Related Plumbing

Required Courses	Credits
ARE 114 Plumbing I	4
ARE 124 Plumbing II	4
ARE 134 Plumbing III	4
ARE 144 Plumbing IV	4
ARE 154 Plumbing V	4
ARE 158 Plumbing VI	4
ARE 164 Plumbing VII	4
ARE 168 Plumbing VIII	4
Total Required Credits	32

Certificate: Apprentice- Related Sheet Metal

Required Courses	Credits
ARE 115 Sheet Metal I	4
ARE 125 Sheet Metal II	4
ARE 135 Sheet Metal III	4
ARE 145 Sheet Metal IV	4
ARE 155 Sheet Metal V	4
ARE 159 Sheet Metal VI	4
ARE 165 Sheet Metal VII	4
ARE 169 Sheet Metal VIII	4
Total Required Credits	32

Art

Degree: Associate of Arts

If you plan to transfer to a four-year college or university to complete a major in Art you should complete the following courses. Consult with a faculty or academic advisor before beginning this program of study. These courses provide the basic preparation leading to Art-related careers.

Required Courses	Credits
ART 111 Art History I*	3
ART 112 Art History II*	3
ART 121 Drawing I	3
ART 122 Drawing II	3
ART 131 2-D Design	3
ART 132 3-D Design	3
ART 211 Painting I	3

*Fulfills General Education requirement

Additional General Education Courses See page 25	32
Approved electives	7
Total Required Credits	60

Auto Collision Technology

(In cooperation with and taught at Warren Tech)

The two-year Automotive Collision Technology program is offered at WarrenTech. Students attend this program either in the morning (7:30-10:30 M-F) or the afternoon (12:00-5:00 M-W) for four semesters. Students enroll in specified blocks of classes each semester with instructor approval. In order to begin the enrollment process, students must first be accepted by WarrenTech. A WarrenTech application and Accuplacer test results must be submitted to the WarrenTech counseling office. Contact the RRCC-WarrenTech liaison at 303-982-8603 for application deadlines and other procedural questions.

Degree: Associate of Applied Science

Auto Collision Technology

Certificates:

Non-Structural Analysis and Damage Repair

Painting and Refinishing

Plastic Repair

Structural Analysis and Damage Repair

Mechanical and Electrical Components

Management

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 and 15 general education credits are required for the AAS degree. Some 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.

AAS Degree: Auto Collision Technology

Required Courses Credits

A minimum of 46 credits from the following courses:

ACT 101 Introduction to Automotive Collision Tech	4
ACT 110 Safety in Collision Repair	2
ACT 111 Metal Welding and Cutting I	3
ACT 121 Non-Structural Repair Preparation	3
ACT 122 Panel Replacement and Alignment	3
ACT 123 Metal Finishing and Body Filling	3
ACT 124 Exterior Panel Replacement (Weld-on)	3
ACT 131 Structural Damage Diagnosis	3
ACT 132 Structural Damage Repair	3
ACT 141 Refinishing Safety	1
ACT 142 Surface Preparation I	2
ACT 143 Spray Equipment Operation	2
ACT 144 Refinishing I	2
ACT 151 Plastics and Adhesives I	1
ACT 160 Custom Painting	3
ACT 170 Automotive Collision Technology Lab Experiences I	9
ACT 171 Automotive Collision Technology Lab Experiences II	9
ACT 172 Auto Collision Technology Lab Experiences III	9
ACT 175 Special Topics	1
ACT 180 Auto Collision Repair Internship Level I	9
ACT 181 Automotive Collision Repair Level II Internship	9
ACT 205 Estimating and Shop Management	3
ACT 211 Metal Welding and Cutting II	2
ACT 220 Structural Repair II	2
ACT 226 Production	4
ACT 231 Advanced Structural Damage Diagnosis and Repair	3
ACT 232 Fixed Glass Repair	2
ACT 241 Paint Defects	3
ACT 242 Surface Preparation II	2
ACT 243 Refinishing II	2
ACT 244 Final Detail	2
ACT 251 Plastics and Adhesives II	1
General Education Requirements See page 34	15
Total Required Credits	61

Certificates

The following certificates follow competencies as mandated by NATEF (National Automotive Technicians Education Foundation). For these certificates the student must successfully complete the following CORE courses (prerequisites):

ACT 101 Introduction to Automotive Collision Tech	4
ACT 110 Safety in Collision Repair	2

Certificate: Non-Structural Analysis/Damage Repair

Required Courses	Credits
ACT 111 Metal Welding and Cutting I	3
ACT 121 Non-Structural Repair Preparation	3
ACT 122 Panel Replacement and Alignment	3
ACT 123 Metal Finishing and Body Filling	3
ACT 124 Exterior Panel Replacement (Weld-on)	3
ACT 170 Automotive Collision Technology Lab Experiences I	9
ACT 171 Automotive Collision Technology Lab Experiences II	9
ACT 175 Special Topics	1
ACT 180 Auto Collision Repair Internship Level I	9
ACT 211 Metal Welding and Cutting II	2
Total Required Credits	45

Certificate: Painting and Refinishing

Required Courses	Credits
ACT 141 Refinishing Safety	1
ACT 142 Surface Preparation I	2
ACT 143 Spray Equipment Operation	2
ACT 144 Refinishing I	2
ACT 160 Custom Painting	3
ACT 170 Automotive Collision Technology Lab Experiences I	9
ACT 175 Special Topics	1
ACT 180 Auto Collision Repair Internship Level I	9
ACT 241 Paint Defects	3
ACT 242 Surface Preparation II	2
ACT 243 Refinishing II	2
ACT 244 Final Detail	2
Total Required Credits	38

Certificate: Plastic Repair

Required Courses	Credits
ACT 151 Plastics and Adhesives I	1
ACT 170 Auto Collision Technology Lab Experiences I 9	
ACT 251 Plastics and Adhesives II	1
Total Required Credits	11

Certificate: Structural Analysis and Damage Repair

Required Courses	Credits
ACT 111 Metal Welding and Cutting I (co-requisite)	3
ACT 131 Structural Damage Diagnosis	3
ACT 132 Structural Damage Repair	3
ACT 171 Auto Collision Tech Lab Experiences II	9
ACT 172 Auto Collision Tech Lab Experiences III	9
ACT 175 Special Topics	1
ACT 211 Metal Welding and Cutting II (co-requisite)	2
ACT 220 Structural Repair II	2
ACT 231 Advanced Structural Damage Diagnosis and Repair	3
ACT 232 Fixed Glass Repair	2
Total Required Credits	37

Certificate: Mechanical and Electrical Components

See Janis Eagan, 303.914.6543 for course listings and further information about this Red Rocks/Warren Tech program.

Certificate: Management

Required Courses	Credits
ACT 172 Automotive Collision Technology Lab Experiences III	9
ACT 181 Automotive Collision Repair Level II Internship	9
ACT 205 Estimating and Shop Management	3
ACT 226 Production	4
Total Required Credits	25

Automotive Service Technology

(In cooperation with and taught at Warren Tech)

The two-year Automotive Service Technology program is offered at WarrenTech. Students attend this program either in the morning (7:30-10:30 M-F) or the afternoon (12:00-5:00 M-W) for four semesters. Students enroll in specified blocks of classes each semester with instructor approval. In order to begin the enrollment process, students must first be accepted by WarrenTech. A WarrenTech application and Accuplacer test results must be submitted to the WarrenTech counseling office. Contact the RRCC-WarrenTech liaison at 303-982-8603 for application deadlines and other procedural questions.

Degree: Associate of Applied Science

Certificates:

- Lubrication and Tire Service**
- Brake Specialist**
- Suspension and Steering**
- Heating and Air Conditioning**
- Manual Drive Train and Axles**
- Automatic Transmission**
- Engine Performance**
- Electrical and Electronic Systems**
- Engine Repair**
- Auto Parts Specialist**

This program is a nationally certified automotive repair program (NATEF). Provides 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 can begin at several designated starting times during the year. Therefore, you can 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. The instructors are ASE Certified Technicians. You should consult with an automotive service technology advisor before beginning your program of study.

AAS Degree:

Required Courses

Credits

A minimum of 60 credits must be taken from the following courses.

ASE 101 Auto Shop Orientation	2
ASE 102 Introduction to the auto shop	2
ASE 110 Brakes I	3
ASE 210 Brakes II	3
ASE 140 Suspension and Steering I	3
ASE 240 Suspension and Steering II	3
ASE 265 Heating and A/C	5
ASE 150 U joint and Axle Shaft Service	2
ASE 151 Manual Transmission/Transaxles	2
ASE 152 Differentials and 4WD/AWD	2
ASE 250 Auto Trans/Transaxle Service	3
ASE 251 Auto Trans/Transaxle Diagnosis	5
ASE 130 General Engine Diagnosis	2
ASE 132 Ignition System Diagnosis/Repair	2
ASE 134 Automotive Emissions	2
ASE 233 Fuel Injection/Exhaust	4
ASE 235 Drivability Diagnosis	1
ASE 120 Basic Automotive Electricity	2
ASE 123 Automotive Battery, Starting, Charging	2
ASE 221 Auto body Electrical	5
ASE 231 Automotive Computers	2
ASE 160 Engine Removal and Install	3
ASE 161 Engine Disassembly, Diagnose, Assemble	5
ASE 201 Automotive Parts Management	6
ASE 282 Internship: General I	1-5

General Education Courses Required 15
See page 34

Total Required Credits 75

Certificates

The Following certificates follow competencies as mandated by NATEF (National Automotive Technicians Education Foundation).

Certificate:

Lubrication and Tire Service

Required Courses

Credits

ASE 101 Auto Shop Orientation	2
(Required for all students new to the program)	
ASE 102 Introduction to the auto shop	2
Total Required Credits	4

Certificate:

Brake specialist

Required Courses

Credits

ASE 110 Brakes I	3
ASE 210 Brakes II	3
Total Required Credits	6

Certificate:

Suspension and Steering

Required Courses

Credits

ASE 140 Suspension and Steering I	3
ASE 240 Suspension and Steering II	3
Total Required Credits	6

Certificate:

Heating and Air Conditioning

Required Courses

Credits

ASE 265 Heating and A/C	5
Total Required Credits	5

Certificate:

Manual Drive Train and Axles

Required Courses

Credits

ASE 150 U joint and Axle Shaft Service	2
ASE 151 Manual Transmission/Transaxles	2
ASE 152 Differentials and 4WD/AWD	2
Total Required Credits	6

Certificate: Automatic Transmission/Transaxles

Required Courses	Credits
ASE 250 Auto Trans/Transaxle Service	3
ASE 251 Auto Trans/Transaxle Diagnosis	5
Total Required Credits	8

Certificate: Engine Performance

Required Courses	Credits
ASE 130 General Engine Diagnosis	2
ASE 132 Ignition System Diagnosis/Repair	2
ASE 134 Automotive Emissions	2
ASE 233 Fuel Injection/Exhaust	4
ASE 235 Drivability Diagnosis	1
Total Required Credits	11

Certificate: Electrical and Electronic Systems

Required Courses	Credits
ASE 120 Basic Automotive Electricity	2
ASE 123 Automotive Battery, Starting, Charging	2
ASE 221 Auto body Electrical	4
ASE 231 Automotive Computers	2
Total Required Credits	10

Certificate: Engine Repair

Required Courses	Credits
ASE 160 Engine Removal and Install	3
ASE 161 Engine Disassembly, Diagnose, Assemble	5
Total Required Credits	8

Certificate: Auto Parts Specialist

Required Courses	Credits
ASE 201 Automotive Parts Management	6
ASE 282 Internship: General I	1-5
Total Required Credits	Minimum of 7

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 should consult with a biology faculty advisor before beginning any program of study. These courses provide the basic preparation leading to Biology related careers. Some courses might not be offered each semester.

Required Courses	Credits
BIO 111 General College Biology I*	5
BIO 112 General College Biology II*	5
MAT 121 College Algebra*	4
BIO 201 Human Anatomy and Physiology I	4
BIO 202 Human Anatomy and Physiology II	4
BIO 208 Microbiology	5

*Fulfills General Education requirement

Additional General Education Courses	24
See page 27	
Approved electives	9
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 should consult with a biology faculty advisor before beginning any program of study. These courses provide the basic preparation leading to Biotechnology related careers. Some courses might not be offered each semester.

Required Courses	Credits
BIO 111 General College Biology I*	5
BIO 201 Human Anatomy and Physiology I	4
BIO 202 Human Anatomy and Physiology II	4
BIO 208 Microbiology	5
MAT 121 College Algebra *	4
BIO 211 Cell Biology	4
BIO 212 Molecular Biology	4

*Fulfills General Education requirement

Additional General Education Courses	28
See page 27	
Approved electives	2
Total Required Credits	60

Building Codes

(See Construction Technology)

Building Maintenance

(See Construction Technology)

Business

Degree: Associate of Arts
Business

Degrees:
Associate of Applied Science
Business-Management and Supervision
Business - Interdisciplinary
Business - Real Estate

Certificates:
Management and Supervision
Real Estate
Small Business Startup

AA Degree: Business

If you plan to transfer to a four-year college or university to complete a major in Business or a closely related field, you should complete the following courses. This degree reflects the business transfer agreement with the public four-year colleges and universities in Colorado. Consult with a faculty or academic advisor before beginning this program of study.

Students not pursuing a Business 4 year-degree, may complete an Associate of Arts degree by meeting the General Education requirements on page 25.

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 Communications & Report Writing	3
BUS 226 Business Statistics	3

Required General Education Courses

MAT 123 Finite Mathematics	
or	

MAT 121 College Algebra and	4
MAT 125 Survey of Calculus	4
ECO 201 Principles of Macroeconomics	3
ECO 202 Principles of Microeconomics	3
SPE 115 Public Speaking	3
HIS 101, HIS 102, HIS 201, or HIS 202	3

Other General Education Courses

(See page 25)

Communications	6
Arts and Humanities	6
Physical and Life Sciences	8

Total Required Credits 60

AAS degrees

Businesses are looking for people who can help them achieve their goals. Training in business helps increase your opportunity for advancement within a corporate or administrative structure. If you plan to transfer to a four-year college or university to major in business you should consider the AA degree with a business emphasis. You should consult with a business faculty advisor early in your college career to explore all your educational options.

AAS degree: Business – Management and Supervision

Required Courses	Credits
ACC 121 Accounting Principles I	4
ACC 122 Accounting Principles II	4
BUS 115 Introduction to Business	3
BUS 204 Introduction to E-Business	3
BUS 216 Legal Environment of Business	3
BUS 217 Business Communication & Report Writing	3
CIS 118 Introduction to PC Applications	3
MAN 116 Principles of Supervision	3
MAN 117 Time Management	1
MAN 226 Principles of Management	3
MAR 216 Principles of Marketing	3

Approved Electives: See faculty advisor 12

General Education Courses Required

ENG 121 English Composition I	3
MAT 107 Career Math/Business or any MAT course 100 or higher	3
ECO 201 Principles of Macroeconomics	3
PHI 112 Ethics	3

General education elective with faculty advisor approval 3

Total Required Credits 60

AAS Degree:

Business -- Interdisciplinary

This program allows you to add a business and management emphasis to another career area.

Required Courses	Credits
ACC 121 Accounting Principles I	4
ACC 122 Accounting Principles II	4
BUS 115 Introduction to Business	3
BUS 204 Introduction to E-Business	3
BUS 216 Legal Environment of Business	3
BUS 217 Business Communication & Report Writing	3
MAN 226 Principles of Management	3
MAR 216 Principles of Marketing	3
Approved Electives: See faculty advisor	4

Interdisciplinary credits	15
Fifteen credits in 100-level courses (or higher) in one vocational program within the Community Colleges of Colorado or the equivalent through an articulation agreement. See faculty advisor.	

General Education Courses Required	
ENG 121 English Composition I	3
MAT 107 Career Math/Business or any MAT course 100 or higher	3
ECO 201 Principles of Macroeconomics	3
PHI 112 Ethics	3
General education elective with faculty advisor approval	3
Total Required Credits	60

AAS Degree:

Business – Real Estate

Required Courses	Credits
ACC 121 Accounting Principles I	4
ACC 122 Accounting Principles II	4
BUS 115 Introduction to Business	3
BUS 204 Introduction to E-Business	3
BUS 216 Legal Environment of Business	3
BUS 217 Business Communication and Report Writing	3
CIS 118 Introduction to PC Applications	3
MAN 116 Principles of Supervision	3
MAN 226 Principles of Management	3
MAR 216 Principles of Marketing	3
REE 103* Real Estate Broker's I	6
REE 104* Real Estate Broker's II	5

*REE 103 and REE 104 may change number and credits

Approved Electives: See faculty advisor **3**

General Education Courses Required	
ENG 121 English Composition I	3
MAT 107 Career Math/Business or any MAT course 100 or higher	3
ECO 201 Principles of Macroeconomics	3
PHI 112 Ethics	3
General education elective with faculty advisor approval	3
Total Required Credits	61

Certificate:

Management and Supervision

Required Courses	Credits
ACC 121 Accounting Principles I	4
BUS 115 Introduction to Business	3
BUS 216 Legal Environment of Business	3
BUS 217 Business Communication & Report Writing	3
CIS 118 Introduction to PC Applications	3
MAN 116 Principles of Supervision	3
MAN 226 Principles of Management	3
MAR 216 Principles of Marketing	3
Approved Electives: See faculty advisor	5
Total Required Credits	30

Certificate:

Real Estate

Required Courses	Credits
REE 103* Real Estate Broker's I	6
REE 104* Real Estate Broker's II	5
Total Required Credits	11

*REE 103 and REE 104 may change number and credits

Certificate: Small Business Startup

Required Courses	Credits
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
SBM 175 Special Topics	1
or	
MAN 117 Time Management	1
or	
Elective with approval of faculty advisor	1
Total Required Credits	8

Business Technology

Degree: Associate of Applied Science Administrative Professional

Certificates: Clerical Assistant Office Professional

These program options are designed to prepare the student for entry-level positions and/or advancement in business, governmental agencies and other institutions that employ people in office occupations. If the student aspires to advanced work placement, they 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. The student must earn a minimum grade of C in all BTE, CIS, and ACC courses required for a certificate or degree.

AAS Degree: Administrative Professional

Required Courses	Credits
ACC 101 Fundamentals of Accounting	3
BTE 102 Keyboarding Applications I	2
BTE 108 Ten-key by Touch	1
BTE 111 Keyboarding Speedbuilding I	2
BTE 112 Keyboarding Speedbuilding II	2
BTE 125 Records Management	3
BTE 166 Business Editing Skills	3
BTE 202 Office Simulation I	3
BTE 203 Office Simulation II	3
BTE 225 Administrative Office Management	3
BTE 287 Cooperative Education/Internship	3
CIS 118 Introduction to PC Applications: MS Office	3
CIS 130 Introduction to the Internet	1
CIS 135 Complete PC Word Processing: Word	3
CIS 140 Microsoft Outlook	1
CIS 145 Complete PC Database: Access	3
CIS 155 PC Spreadsheet Concepts: Excel	3
CIS 165 Presentation Graphics: PowerPoint	3
ENG 121 English Composition I	3
MAT 121 College Algebra (or higher)	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	61

Certificate: Clerical Assistant

Required Courses	Credits
BTE 100 Computer Keyboarding	1
BTE 102 Keyboarding Applications I	2
BTE 125 Records Management	3
BTE 166 Business Editing Skills	3
BTE 287 Cooperative Education/Internship	3
CIS 118 Introduction to PC Applications: MS Office	3
CIS 130 Introduction to the Internet	1
CIS 140 Microsoft Outlook	1
MAT 107 Career Math/Business	3
Total Required Credits	20

Certificate: Office Professional

Required Courses		Credits
BTE 100	Computer Keyboarding	1
BTE 102	Keyboarding Applications I	2
BTE 111	Keyboarding Speedbuilding I	2
BTE 125	Records Management	3
BTE 166	Business Editing Skills	3
BTE 225	Administrative Office Management	3
BTE 287	Cooperative Education/Internship	3
CIS 118	Introduction to PC Applications: MS Office	3
CIS 130	Introduction to the Internet	1
CIS 135	Complete PC Word Processing: Word	3
CIS 140	Microsoft Outlook	1
CIS 155	PC Spreadsheet Concepts: Excel	3
CIS 165	Presentation Graphics: PowerPoint	3
MAT 107	Career Math/Business	3
Total Required Credits		34

Carpentry

Degree: Associate of Applied Science Carpentry

Certificate: Carpentry

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. 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.

AAS Degree: Carpentry

Required Courses		Credits
CAR 156	Shop Tools: Stationary, Hand and Portable	4
CAR 133	Construction Framing & Safety	4
CAR 134	Exterior Finishes and Trim	4
CAR 136	Remodeling, Renovation, and Additions	4
CAR 144	Interior Trim & Finish Methods	4
CAR 155	Interior Trim-Built-ins	4
CAR 166	Stair Design & Construction	4
CAR/FIW Electives		8
Construction Technology or FIW Electives		10
Options Include		
CON 105	Construction Technology	4
CON 230	Blueprint Reading	4
CON 251	Construction Process	4
General Education Electives		15
See Page 63		
Total Required Credits		61

Certificate: Carpentry

Required Courses		Credits
CAR 156	Shop Tools: Stationary, Hand and Portable	4
CAR 133	Construction Framing & Safety	4
CAR 134	Exterior Finishes and Trim	4
CAR 144	Interior Trim & Finish Methods	4
CAR/FIW Electives		12
Total Required Credits		28

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 chemistry faculty advisor before beginning any program of study. These courses provide the basic preparation leading to Chemistry related careers. Some courses might not be offered each semester.

Required Courses	Credits
CHE 111 General College Chemistry I *	5
CHE 112 General College Chemistry II *	5
CHE 211 Organic Chemistry I	5
CHE 212 Organic Chemistry II	5
MAT 201 Calculus I *	5
MAT 202 Calculus II	5
*Fulfills General Education requirement	
Additional General Education Courses See page 27	27
Approved electives	3
Total Required Credits	60

Codes

(See Construction Technology)

Communication and Speech

Degree:
Associate of Arts
**Communication Disorders
Speech and Communication**

AA Degree:
Communication Disorders

This program is designed to provide the student for orientation into a course of study in the Communication Disorders area. It is the intent of this program to better prepare the student who would like to pursue an undergraduate degree in the Hearing Disorders or Speech-Language Pathology areas. It is highly recommended that the student consult a faculty advisor before beginning this course of study.

Required Courses	Credits
CMD 160 Introduction to Human Communication Disorders	3
CMD 260 Introduction to Phonetics	2
CMD 265 Physiological and Biological Acoustics	2
CMD 266 Normal Language Development	3
CMD 267 Anatomy and Physiology of the Speech and Hearing Mechanism	3
ASL 121 American Sign Language	5
SPE 125 Interpersonal Communication* or	
COM 126 Communication in Healthcare*	3
BIO 201 Anatomy and Physiology I	4
*RRCC Graduation requirement	

General Education Courses **35**
See Page 25

Recommended Gen Ed courses:	
BIO 111 General College Biology with Lab	5
MAT 121 College Algebra	4

Total Required Credits **60**

**Highly recommended for transfer to UNC
(see faculty):**

BIO 202 Anatomy and Physiology II	4
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AA Degree: Speech and Communication

The field of Speech and Communication helps one to develop oral and written communication skills. Critical thinking, problem solving, interpersonal skills, presentation skills and teamwork are some of the concepts addressed. This program provides basic preparation leading to communication related careers in organizations and corporations dealing with education, business, public service, tourism, journalism, public relations, politics, broadcasting and sales.

Completion of the following courses is intended to be appropriate for those who plan to transfer to a four-year college or university to complete a major in Communication.

The student is encouraged to consult with a faculty advisor prior to beginning any program of study.

Required Courses	Credits
SPE 115 Public Speaking*	3
SPE 125 Interpersonal Communication*	3
SPE 216 Principles of Speech Communication II	3
SPE 217 Group Communication	3
SPE 220 Intercultural Communication	3
SPE 230 Argumentation and Debate	3

*RRCC Graduation requirement

General Education Courses See Page 25	35
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Approved Electives See Page 26	7
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Recommended Approved Elective course: ASL 121 American Sign Language	5
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Total Required Credits	60
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Computer Information Systems

Degree:

Associate of Applied Science

Cisco Network Associate
Computer Support Technician
Microsoft Application Developer (MCAD)
Microsoft Database Administrator (MCDBA)
Microsoft Network System Administrator (MCSA)
Microsoft Network System Engineer (MCSE)
PC Applications Specialist
Programming Specialist
Web Design
Web Development

Certificates:

Cisco Network Associate
Computer Support Technician
Microsoft Application Developer (MCAD)
Microsoft Database Administrator (MCDBA)
Microsoft Network System Administrator (MCSA)
Microsoft Network System Engineer (MCSE)
PC Applications Specialist
Programming Specialist
Web Design
Web Development

The Computer Information Systems Associate of Applied Science degree prepares you for entry-level positions in all areas of emphasis that are listed following the core requirements. You must earn a minimum grade of C in all CIS, CNG, CSC, and CWB courses required for a certificate or degree.

Core Curriculum Requirements for all AAS degrees

Faculty advisor approved business course		3
or		
ACC 121	Accounting Principles I	4
ENG 121	English Composition I	3
ENG 122	English Composition II	3
or		
ENG 131	Technical Writing	3
MAT 121	College Algebra (or higher)	4
SPE 115	Public Speaking	3
CIS 268	System Analysis and Design I	3
CIS 201	Computer Issues	1
CIS 289	Capstone	3

Credit from any two of the following three areas: 6

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)

Total Required Core Credits 29-30**AAS Degree:****Cisco Network Associate**

This area of emphasis prepares the student to take the Cisco INTRO and Cisco ICND (Interconnecting Network Devices) certification exams equating to the Cisco Certified Network Associate (CCNA) certification. Content includes basic network principles, basic router and switch configuration, Intermediate routing and switching, and Wide Area Networking (WAN). Focus is on hands-on performance and assessment.

Required Courses	Credits
CNG 121 Computer Technician I: A+	4
CNG 122 Computer Technician II: A+	4
CNG 211 Windows XP Configuration	3
CNG 260 Cisco Network Associate I	5
CNG 261 Cisco Network Associate II	5
CNG 262 Cisco Network Associate III	5
CNG 263 Cisco Network Associate IV	5
Minimum Required Credits for Area of Emphasis	31
Core Curriculum Requirements (see above)	29-30
Total Required Credits	60-61

AAS Degree:**Computer Support Technician**

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

Required Courses	Credits
CNG 121 Computer Technician I: A+	4
CNG 122 Computer Technician II: A+	4
CNG 211 Windows XP Configuration	3
CNG 212 Manage MS Windows Server Environment	4
CNG 213 Manage MS Windows Network Infrastructure	4
CNG 260 Cisco Network Associate I	5
CNG 261 Cisco Network Associate II	5
CNG 262 Cisco Network Associate III	5
and	
CNG 263 Cisco Network Associate IV	5
or	
CNG 124 Networking I: Net+	3
and	
CNG 125 Networking II: Net+	3

Minimum Required Credits for Area of Emphasis 35-39**Core Curriculum Requirements (see this page) 29-30****Total Required Credits 64-65****AAS Degree:****Microsoft Application Developer (MCAD)**

This area of emphasis provides the skills necessary to develop and maintain applications, components, Web or desktop clients and back-end data services using the MS .NET technology.

Required Courses	Credits
CIS 145 Complete PC Database: Access	3
or	
CIS 240 Database Design and Development	3
CIS 251 Intro to Structured Query Language (SQL)	3
CSC 119 Introduction to Programming	3
and	
CSC 154 Introduction to MS Visual Basic .NET (OOP)	3
or	
CSC 160 Computer Science I	4
CSC 250 Programming with MS ADO .NET	3
CSC 251 Programming in Visual Basic .NET	3
or	

CSC 261	Programming in C# .NET	3
CSC 253	MS ASP .NET Web Application Development	3
CSC 262	VS.NET Application Development: VB & C#	3
CSC 263	MS ASP .NET XML Web Service Development	3
CSC 264	Building COM+ Apps using MS .NET Entrp Svcs	3
CWB 164	XML	3

Minimum Required Credits for Area of Emphasis 31-33
Core Curriculum Requirements (see page 56) 29-30
Total Required Credits 60-63

AAS Degree:

Microsoft Database Administrator (MCDBA)

This area of emphasis provides students with the skills necessary to design, implement, and administer Microsoft SQL Server databases.

Required Courses	Credits
CSC 119 Introduction to Programming and	3
CSC 154 Introduction to MS Visual Basic .NET (OOP) or	3
CSC 160 Computer Science I	4
CIS 145 Complete PC Database: Access	3
CIS 240 Database Design and Development	3
CIS 251 Intro. to Structured Query Language (SQL)	3
CIS 253 Programming Microsoft SQL Server Database	3
CNG 212 Manage MS Windows Server Environment	4
CNG 227 Administering a Microsoft SQL Server Database	3
CSC 250 Programming with MS ADO .NET	3
CWB 164 XML	3

Choose one elective 3

CSC 252 MS Visual Basic .NET Application Development	3
CSC 253 MS ASP .NET Web Application Development	3
CSC 262 VS.NET Application Development: VB & C#	3
CSC 263 MS ASP .NET XML Web Service Development	3

Minimum Required Credits for Area of Emphasis 32-34
Core curriculum requirements (see page 56) 29-30
Total Required credits 61-64

AAS Degree:

Microsoft Network System Administrator (MCSA)

This area of emphasis provides the skills necessary to manage and troubleshoot system environments based on Microsoft Windows Platforms.

Required Courses	Credits
CSC 119 Introduction to Programming or	3
CSC 154 Introduction to MS Visual Basic .NET (OOP)	3
CNG 121 Computer Technician I: A+	4
CNG 122 Computer Technician II: A+	4
CNG 124 Networking I: Net+	3
CNG 125 Networking II: Net +	3
CNG 211 Windows XP Configuration	3
CNG 212 Manage MS Windows Server Environment	4
CNG 213 Manage MS Windows Network Infrastructure	4

Choose one elective 3

CNG 217 Implement Security in a MS Windows Environment	3
CNG 226 Implementing and Managing Microsoft Exchange	3
CNG 227 Administering a Microsoft SQL Server Database	3

Minimum Required Credits for Area of Emphasis 31
Core curriculum requirements (see page 56) 29-30
Total Required Credits 60-61

AAS Degree:

Microsoft Network System Engineer (MCSE)

This area of emphasis provides the skills necessary to design and implement an infrastructure solution based on the Windows platform and Microsoft Servers software.

Required Courses	Credits
CNG 211 Windows XP Configuration	3
CNG 212 Manage MS Windows Server Environment	4
CNG 213 Manage MS Windows Network Infrastructure	4
CNG 214 Plan MS Windows Server Network Infrastructure	4

CNG	216	Plan MS Windows Server Active Directory Infrastructure	3
CNG	221	Design MS Directory and Network Infrastructure	3
CSC	119	Introduction to Programming	3
CSC	154	Introduction to MS Visual Basic .NET (OOP)	3

Choose 2 electives **6 – 8**

CNG	121	Computer Technician I: A+	
CNG	122	Computer Technician II: A+	
CNG	124	Networking I: Net+	
CNG	125	Networking II: Net +	
CNG	217	Implement Security in a MS Windows Environment	
CNG	226	Implementing and Managing Microsoft Exchange	
CNG	227	Administering a Microsoft SQL Server Database	

Minimum Required Credits for Area of Emphasis 33-35

Core Curriculum Requirements (see page 56) **29-30**

Total Required Credits **62-65**

AAS Degree:

PC Applications Specialist

This area of emphasis prepares you as an entry-level micro-computer specialist with an emphasis in applications. Upon completion of the course work, you will be prepared to sit for the Microsoft Office Specialist (MOS) examinations for MOS certification.

Required Courses **Credits**

CIS	118	Introduction to PC Applications: MS Office	3
CIS	128	Windows Complete	3
CIS	135	Complete PC Word Processing: Word	3
CIS	140	Microsoft Outlook	1
CIS	145	Complete PC Database: Access	3
CIS	155	PC Spreadsheet Concepts: Excel	3
CIS	165	Complete Presentation Graphics: PowerPoint	3
CNG	124	Networking I: Network+	3
CSC	119	Introduction to Programming	3
CWB	110	Complete Web Authoring: HTML	3

Faculty approved elective **3**

Minimum Required Credits for Area of Emphasis **31**

Core Curriculum Requirements (see page 56) **29-30**

Total Required Credits **60-61**

AAS Degree:

Programming Specialist

This area prepares 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.

Required Courses **Credits**

CIS	145	Complete PC Database: Access	3
	or		
CIS	240	Database Design and Development	3
CIS	220	Fundamentals of UNIX	3
CIS	221	UNIX Shells scripting	3
	or		
CWB	205	Complete Web Scripting: JavaScript	3
CNG	124	Networking I: Network+	3
CSC	119	Introduction to Programming	3
	and		
CSC	154	Introduction to MS Visual Basic .NET (OOP)	3
	or		
CSC	160	Computer Science I	4

Two object oriented programming languages with at least one second semester course **6**

Faculty advisor approved electives **9**

Minimum Required Credits for Area of Emphasis 31-33

Core Curriculum Requirements (see page 56) **29-30**

Total Required Credits **60-63**

AAS Degree:

Web Design

This area of emphasis prepares you for an entry-level position in Internet Web design. The student will learn necessary skills using a variety of our programs, all focusing on page design and implementation.

Required Courses **Credits**

CIS	128	Windows Complete	3
CSC	119	Introduction to Programming	3
CWB	110	Complete Web Authoring: HTML	3
CWB	115	Web Design Fundamentals	3
CWB	130	Complete Web Editing Tools: Dreamweaver	3
CWB	162	Image Editing I: Photoshop	3
CWB	205	Complete Web Scripting: JavaScript	3
CWB	245	Complete Web Animation I: Flash	3
CWB	246	Complete Web Animation II: Flash	3
CWB	262	Image Editing II: Photoshop	3

Faculty advisor approved electives **3**

Minimum Required Credits for Area of Emphasis **33**

Core Curriculum Requirements (see page 56) **29-30**

Total Required Credits **62-63**

AAS Degree:

Web Development

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

Required Courses			Credits
CIS 145	Complete PC Database: Access		3
	or		
CIS 240	Database Design and Development		3
CIS 220	Fundamentals of UNIX		3
CIS 251	Intro. to Structured Query Language (SQL)		3
CNG 124	Networking I: Network+		3
CSC 119	Introduction to Programming		3
	and		
CSC 154	Introduction to MS Visual Basic .NET (OOP)		3
	or		
CSC 160	Computer Science I		4
CSC 240	Java Programming		3
	or		
CSC 261	Programming in C# .NET		3
CSC 248	Internet Java Programming		3
	or		
CSC 253	MS ASP .NET Web Application Development		3
CWB 110	Complete Web Authoring: HTML		3
CWB 164	XML		3
CWB 205	Complete Web Scripting: JavaScript		3

Minimum Required Credits for Area of Emphasis	31-33
Core Curriculum Requirements (see page 56)	29-30
Total Required Credits	60-63

Certificate Programs

Certificate:

Cisco Network Associate

This certificate prepares the student to take the Cisco INTRO and Cisco ICND (Interconnecting Network Devices) certification exams equating to the Cisco Certified Network Associate (CCNA) certification. Content includes basic network principles, basic router and switch configuration, Intermediate routing and switching, and Wide Area Networking (WAN). Focus is on hands-on performance and assessment.

Required Courses			Credits
CNG 121	Computer Technician I: A+		4
CNG 122	Computer Technician II: A+		4
CNG 211	Windows XP Configuration		3
CNG 260	Cisco Network Associate I		5
CNG 261	Cisco Network Associate II		5
CNG 262	Cisco Network Associate III		5
CNG 263	Cisco Network Associate IV		5
CIS 201	Computer Issues		1
Total Required Credits			32

Certificate:

Computer Support Technician

This certificate provides both hardware and operating systems experience needed to work as a support person for both local and wide area network environments.

Required Courses			Credits
CNG 121	Computer Technician I: A+		4
CNG 122	Computer Technician II: A+		4
CNG 211	Windows XP Configuration		3
CNG 212	Manage MS Windows Server Environment		4
CNG 213	Manage MS Windows Network Infrastructure		4
CNG 260	Cisco Network Associate I		5
CNG 261	Cisco Network Associate II		5
CNG 262	Cisco Network Associate III		5
	and		
CNG 263	Cisco Network Associate IV		5
	or		
CNG 124	Networking I: Net+		3
	and		
CNG 125	Networking II: Net+		3
CIS 201	Computer Issues		1
Total Required Credits			36-40

Certificate:

Microsoft Application Developer (MCAD)

This certificate provides the skills necessary to develop and maintain applications, components, Web or desktop clients and back-end data services using the MS .NET technology.

Required Courses		Credits
CIS 145	Complete PC Database: Access or	3
CIS 240	Database Design and Development	3
CIS 201	Computer Issues	1
CIS 251	Intro to Structured Query Language (SQL)	3
CSC 119	Introduction to Programming and	3
CSC 154	Introduction to MS Visual Basic .NET (OOP) or	3
CSC 160	Computer Science I	4
CSC 250	Programming with MS ADO .NET	3
CSC 251	Programming in Visual Basic .NET or	3
CSC 261	Programming in C# .NET	3
CSC 253	MS ASP .NET Web Application Development	3
CSC 262	VS.NET Application Development: VB & C#	3
CSC 263	MS ASP .NET XML Web Service Development	3
CSC 264	Building COM+ Apps using MS .NET Entrp Svcs	3
CWB 164	XML	3
Total Required Credits		32-34

Certificate:

Microsoft Database Administrator (MCDBA)

This certificate provides students with the skills necessary to design, implement, and administer Microsoft SQL Server databases.

Required Courses		Credits
CSC 119	Introduction to Programming and	3
CSC 154	Introduction to MS Visual Basic .NET (OOP) or	3
CSC 160	Computer Science I	4
CIS 145	Complete PC Database: Access	3
CIS 240	Database Design and Development	3
CIS 251	Intro. to Structured Query Language (SQL)	3

CIS 253	Programming Microsoft SQL Server Database	3
CNG 212	Manage MS Windows Server Environment	4
CNG 227	Administering a Microsoft SQL Server Database	3
CSC 250	Programming with MS ADO .NET	3
CWB 164	XML	3
CIS 201	Computer Issues	1

Choose one elective **3**

CSC 252	MS Visual Basic .NET Application Development	3
CSC 253	MS ASP .NET Web Application Development	3
CSC 262	VS.NET Application Development: VB & C#	3
CSC 263	MS ASP .NET XML Web Service Development	3

Total Required Credits **33-35**

Certificate:

Microsoft Network System Administrator (MCSA)

This certificate provides the skills necessary to manage and troubleshoot system environments based on Microsoft Windows Platforms.

Required Courses		Credits
CNG 121	Computer Technician I: A+	4
CNG 122	Computer Technician II: A+	4
CNG 124	Networking I: Net+	3
CNG 125	Networking II: Net +	3
CNG 211	Windows XP Configuration	3
CNG 212	Manage MS Windows Server Environment	4
CNG 213	Manage MS Windows Network Infrastructure	4
CIS 201	Computer Issues	1
CSC 119	Introduction to Programming or	3
CSC 154	Introduction to MS Visual Basic .NET (OOP)	3
Choose one elective		3
CNG 217	Implement Security in a MS Windows Environment	3
CNG 226	Implementing and Managing Microsoft Exchange	3
CNG 227	Administering a Microsoft SQL Server Database	3
Total Required Credits		32

Certificate:

Microsoft Network System Engineer (MCSE)

This certificate provides the skills necessary to design and implement an infrastructure solution based on the Windows platform and Microsoft Servers software.

Required Courses	Credits
CNG 211 Windows XP Configuration	3
CNG 212 Manage MS Windows Server Environment	4
CNG 213 Manage MS Windows Network Infrastructure	4
CNG 214 Plan MS Windows Server Network Infrastructure	4
CNG 216 Plan MS Windows Server Active Directory Infrastructure	3
CNG 221 Design MS Directory and Network Infrastructure	3
CSC 119 Introduction to Programming	3
CSC 154 Introduction to MS Visual Basic .NET (OOP)	3
CIS 201 Computer Issues	1
Choose 2 electives	6-8
CNG 121 Computer Technician I: A+	
CNG 122 Computer Technician II: A+	
CNG 124 Networking I: Net+	
CNG 125 Networking II: Net +	
CNG 217 Implement Security in a MS Windows Environment	
CNG 226 Implementing and Managing Microsoft Exchange	
CNG 227 Administering a Microsoft SQL Server Database	
Total Required Credits	34-36

Certificate:

PC Applications Specialist

This certificate prepares 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 Specialist (MOS) examinations for MOS certification.

Required Courses	Credits
CIS 118 Introduction to PC Applications: MS Office	3
CIS 128 Windows Complete	3
CIS 135 Complete PC Word Processing: Word	3
CIS 140 Microsoft Outlook	1
CIS 145 Complete PC Database: Access	3
CIS 155 PC Spreadsheet Concepts: Excel	3

CIS 165 Complete Presentation Graphics: PowerPoint	3
CNG 124 Networking I: Network+	3
CSC 119 Introduction to Programming	3
CIS 201 Computer Issues	1
Total Required Credits	26

Certificate:

Programming Specialist

This certificate prepares 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.

Required Courses	Credits
CIS 145 Complete PC Database: Access	3
or	
CIS 240 Database Design and Development	3
CIS 220 Fundamentals of UNIX	3
CIS 221 UNIX Shellscripting	3
or	
CWB 205 Complete Web Scripting: JavaScript	3
CNG 124 Networking I: Network+	3
CSC 119 Introduction to Programming	3
and	
CSC 154 Introduction to MS Visual Basic .NET (OOP)	3
or	
CSC 160 Computer Science I	4
CIS 201 Computer Issues	1
Two object oriented programming languages with at least one second semester course	6
Faculty advisor approved electives	9
Total Required Credits	32-34

Certificate:

Web Design

This certificate prepares you for an entry-level position in Internet Web design. The student will learn necessary skills using a variety of our programs, all focusing on page design and implementation.

Required Courses	Credits
CIS 128 Windows Complete	3
CIS 201 Computer Issues	1
CSC 119 Introduction to Programming	3
CWB 110 Complete Web Authoring: HTML	3
CWB 115 Web Design Fundamentals	3

CWB 130	Complete Web Editing Tools: Dreamweaver	3
CWB 162	Image Editing I: Photoshop	3
CWB 205	Complete Web Scripting: JavaScript	3
CWB 245	Complete Web Animation I: Flash	3
CWB 246	Complete Web Animation II: Flash	3
CWB 262	Image Editing II: Photoshop	3
Faculty advisor approved electives		3
Total Required Credits		34

Certificate:

Web Development

This certificate prepares you for an entry-level position in Internet Web development with a focus on the programming and database aspects of websites. Course offerings provide a mix of programming and applications that examine both the client and server aspects of websites. Creation of dynamic Web pages using databases is explored.

Required Courses		Credits
CIS 145	Complete PC Database: Access or	3
CIS 240	Database Design and Development	3
CIS 201	Computer Issues	1
CIS 220	Fundamentals of UNIX	3
CIS 251	Intro. to Structured Query Language (SQL)	3
CNG 124	Networking I: Network+	3
CSC 119	Introduction to Programming and	3
CSC 154	Introduction to MS Visual Basic .NET (OOP) or	3
CSC 160	Computer Science I	4
CSC 240	Java Programming or	3
CSC 261	Programming in C#.NET	3
CSC 248	Internet Java Programming or	3
CSC 253	MS ASP .NET Web Application Development	3
CWB 110	Complete Web Authoring: HTML	3
CWB 164	XML	3
CWB 205	Complete Web Scripting: JavaScript	3
Total Required Credits		32-34

Computer Science

Important note: Please refer to the CIS department website, www.rcc.edu/cis, or talk to an advisor for the most current course, degree and certificate information. You must earn a minimum grade of C in all CIS, CNG, CSC, and CWB courses required for a certificate or degree.

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.

Required Courses			Credits
CSC 160	Computer Science I		4
CSC 161	Computer Science II		4
CSC 165	Discrete Structures		3
MAT 201	Calculus I *		5
MAT 202	Calculus II		5
PHY 211	Physics: Calculus-based I*		5
PHY 212	Physics: Calculus-based II*		5

*Must be taken to fulfill General Education Requirement.

Additional Gen Ed Courses	24
See Page 27	
Electives	5
See Page 28	
Total Required Credits	60

Construction Technology

Degrees:

Associate of Applied Science

- Construction Management
- Construction Technology Technician
- Building Maintenance Technician
- Building Code Enforcement
- Trades Degree

Certificates:

- Construction Management
- Construction Technology Technician
- Construction Technology Fundamentals
- Building Maintenance Technician
- Building Codes
- Basic Plumbing/Heating Maintenance
- International Residential Code
- International Plumbing and Mechanical Codes
- Building Code Enforcement

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

AAS Degree:

Construction Management

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. 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.

Construction Technology Requirements

CON 105	Construction Technology	4
CON 230	Blueprint Reading	4
CON 251	Construction Process	4
CON 145	Construction Project Management	2
CON 146	Construction Scheduling	2
CON XXX	Electives Approved by your advisor	8
MAN, BUS, Trade Electives Approved by Advisor		22

General Education Requirements 15
See Page 63

Total Required Credits 61

Requirements for all areas of emphasis in Construction Technology

General Education Requirements

English/Speech (ENG, SPE - any level above 100)	3
Mathematics (MAT 107)	3
Credit from 2 of these areas:	6
Humanities (ART, FRE, GER, HUM, LIT, MUS, PHI, SPA)	
Science (AST, BIO, CHE, GEY, PHY)	
Social and Behavioral Sciences (ANT, ECO, GEO, HIS, POS, PSY, SOC)	
General Education Electives	3
Total General Education Requirements	15

Construction Technology Requirements

Choose a minimum of 10 credits from the following classes:

CON 105	Construction Technology	4
CON 110	Introduction to Construction	3
CON 145	Construction Project Management	2
CON 146	Construction Scheduling	2
CON 230	Blueprint Reading	4
CON 251	Construction Process	4
Total Construction Technology Requirements	10	

AAS Degree:

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 See Page 63	15
Construction Technology Requirements See Page 63	10
Required Major Courses	36
Total Required Credits	61

AAS Degree:

Building Maintenance Technician

You must complete a total of 36 credits, including one course from the areas listed on page 66. No more than four courses from any one area will count toward the completion of this degree. Meet with your Construction Technology advisor.

General Education Requirements See Page 63	15
Construction Technology Requirements See Page 63	10
Required Major Courses	36
Total Required Credits	61

AAS Degree:

Building Code Enforcement

A partnership with International Code Council. All courses available through CCCOnline.

Required Major Courses	Credits
CON 140 Introduction the Building Code Enforcement	3
CON 241 Overview of International Codes	3
CON 242 Residential and Non-Residential Plan Review	3
EMP 105 Emergency Planning	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:	
ENG 131 Technical Writing	3
MAT 106 Survey of Algebra	3
SPE 115 Principles of Speech Comm.	3
PHY 111 Algebra Based Physics	3

GEY 111 Physical Geology	3
Suggested Elective Courses(Other Choices available if approved by advisor)	
MAN 116 Principles of Supervision	3
MAN 226 Principles of Management	3
EMP 101 Intro to Emergency Planning	3
EMP 109 Incident Command Systems	3
ECO 201 Principles of Macroeconomics	3
EMP 247 Decision Making in a Crisis	3
Total Required Credits	60

AAS Degree: Trades Degree

The trades AAS degree program consists of a maximum of 58 credits 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 credits of core general education courses at RRCC. For those registered apprentices who complete a three-year registered apprenticeship program, 20 RRCC credits 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.

Certificate:

Construction Management

Required Major Courses	Credits
CON 105 Construction Technology	4
CON 230 Blueprint Reading	4
CON 251 Construction Process	4
CON 145 Construction Project Management	2
CON 146 Construction Scheduling	2
CON XXX Electives Approved by your advisor	14
Total Required Credits	30

Certificate:

Construction Technology Technician

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

Construction Technology Requirements See Page 63	10
Required Major Courses (See faculty advisor)	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 See Page 63	10
Additional Construction Technology Electives	4
Total Required Credits	14

Certificate:

Building Maintenance Technician

You must complete a total of 36 credits including one course from each of the areas listed on page 66. No more than four courses from any one area will count toward the completion of this certificate. Meet with your Construction Technology advisor.

Construction Technology Requirements See Page 63	10
Required Major Courses See Page 63	36
Total Required Credits	46

Certificate

Building Codes

Credit from any 2 of these classes:

CON 142 International Building Codes	4
EIC 130 National Electrical Code I	4
HVA 206 International Mechanical Code	4
PLU 207 International Plumbing Code	4
Total Required Credits	8

Certificate

Basic Plumbing/Heating Maintenance

Required Major Courses	Credits
HVA 110 Fundamentals of Gas Heating	4
HVA 240 Servicing Forced Air Systems	4
HVA 247 Hot Water Heating Systems	4
PLU 100 Introduction to Plumbing	4
PLU 104 Plumbing Service	4
Total Required Credits	20

Certificate

International Residential Code

Required Major Courses	Credits
CON 142 International Residential Code	4
HVA 200 International Residential Code Mechanical and Fuel Gas	2
PLU 150 Code and Piping Calculations	2
PLU 202 International Residential Code Plumbing	2
Total Required Credits	10

Certificate

International Plumbing and Mechanical Codes

Required Major Courses	Credits
HVA 200 International Residential Code Mechanical and Fuel Gas	2
HVA 206 International Mechanical Code	4
PLU 150 Code and Piping Calculations	2
PLU 202 International Residential Code Plumbing	2
PLU 207 International Plumbing Code	4
PLU 208 International Fuel Gas Code	4
Total Required Credits	18

Certificate

Building Code Enforcement

A partnership with ICC (International Code Counsel). All courses available through CCCOnline

Required Major Courses	Credits
CON 140 Introduction to Building Code and Enforcement	3
CON 241 Overview of International Codes	3
CON 242 Residential and Non-residential Plan Review	3
ECO 201 Principles of Macroeconomics	3
EMP 105 Emergency Planning	3
EMP 240 Leadership and Influence	3
EMP 241 Decision Making and Problem Solving	3
EMP 242 Effective Communication	3
EMP 244 Developing Volunteer Resources	3
EMP 291 Public Information Officer	3
Total Required Credits	30

Choices for Building Maintenance Technician (Degree or Certificate):

Air Conditioning, Heating, Refrigeration and Ventilation

HVA	102	Basic Refrigeration	4
HVA	105	Electricity for HVAC/R	4
HVA	110	Fundamentals of Gas Heating	4
HVA	132	Air Conditioning and Refrigeration Controls	4
HVA	134	Air Conditioning Systems	4
HVA	162	Heating Controls	4

Carpentry

CAR	156	Tools: Stationary, Hand and Portable	4
CAR	165	Shop Carpentry	4
CAR	155	Interior Trim-Built-Ins	2
CAR	XXX	Choose From Framing Classes	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 Electrical Code I	4
EIC	155	AC Circuit Fundamentals	4
EIC	167	Electrical Maintenance Techniques	4

Plumbing

PLU	100	Introduction to Plumbing	4
PLU	111	Piping Skills	4
PLU	104	Plumbing Service	4
PLU	244	Commercial Plumbing Service	4
PLU	247	Hot Water Heating Systems	4

Criminal Justice

Degrees:

Associate of Applied Science

Criminal Justice

Areas of Emphasis:

Corrections

Victim Assistance

Law Enforcement

Associate of General Studies

Certificates:

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. Those students planning to transfer to a four-year college or university to complete a major in criminal justice should consider the AGS degree with a CRJ emphasis. Students should consult with a Criminal Justice faculty advisor early in their college career to explore all of their educational options.

AAS Degree:

Criminal Justice

This program prepares students for entry level employment in Criminal Justice; specifically law enforcement, corrections or victim assistance.

Required 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	289 Capstone	1

General Education Required Courses

ENG	121 English Composition 1	3
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SPE 125 Interpersonal Communications	3
MAT (106 or above)	3
PHI 112 Ethics	3

A course 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)

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 CRJ faculty advisor. Those who are not presently employed in the field will be required to take a minimum of three credits in CRJ 280 Internship.

Total Required Credits 64

Area of Emphasis:

Corrections

Upon successful completion of this program you should be able to meet the requirements for entry level employment in adult or juvenile corrections.

Required Courses:	Credits
CRJ 146 Community Based Corrections	3
CRJ 150 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

Courses for Adult Corrections:

CRJ 116 Civil Liability	3
SOC 218 Sociology of Diversity	3
or	

Courses for Juvenile Corrections:

CRJ 216 Juvenile Law and Procedures	3
CRJ 235 Delinquent Behavior	3

Total Required Credits 21

Area of Emphasis:

Victim Assistance

Upon successful completion of this program, you should be able to perform the necessary duties for entry-level victim assistance direct service employment.

Required Courses	Credits
CRJ 150 Victims of Crime and Trauma	3
CRJ 225 Crisis Intervention	3
CRJ 239 Managing Emergency Worker Stress	3
PSY 237 Psychology of Death and Dying	3
SOC 265 Violence and Culture	3

Choose any two courses (6 credits)

CRJ 151 Domestic Violence	3
CRJ 152 Sexual Assault	3
CRJ 153 Violence Against Children	3
CRJ 269 Adult Survivors of Childhood Molestation	3

Total Required Credits 21

Area of Emphasis:

Law Enforcement

You must complete seven CRJ courses for a total of 21 credits. You must confer with your CRJ degree advisor to determine the appropriate courses. Specific courses required may vary, depending upon your background and work experience. Upon completion of this program you should be able to be employed as a law enforcement patrol officer at departments requiring a two year college degree. The following courses are required for all law enforcement students:

CRJ 151 Domestic Violence	3
or	
CRJ 152 Sexual Assault	3
CRJ 225 Crisis Intervention	3
CRJ 239 Managing Emergency Worker Stress	3

The remaining four courses must be chosen with CRJ faculty approval.

Total Required Credits 21*

*With proof of successful completion of a POST-certified academy and passing the POST exam, you will receive credit for the following five courses:

CRJ 118 Report Writing	3
CRJ 125 Law Enforcement Operations	3
CRJ 126 Patrol Procedures	3
CRJ 220 Human Relations and Social Conflict	3
CRJ 246 Traffic Investigation	3

Total Credits 15

Degree: Associate of General Studies

You are urged to consult with the criminal justice faculty advisor before beginning any program of study. If you plan to transfer to a four-year college or university to complete a major in criminal justice you should complete the following courses. These courses provide the basic preparation leading to criminal justice-related careers.

***Law Enforcement students CRJ 135 not required. All other career areas CRJ 125 not required.**

Required 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
or	
*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 289 Capstone	1
General Education Courses Required (Must include PHI 112)	35
See page 29	
Total Required Credits	60

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 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 Investigations	3
CRJ 245 Interview and Interrogation	3

Elective Courses (Select two courses):

CRJ 190 Financial Investigations	3
CRJ 218 Drug Investigative Strategies	3
CRJ 246 Traffic Investigation	3
FST 252 Fire Arson Investigation	3
Total Required Credits	27

Certificate:

Victim Assistance Direct Service

You must have strong writing skills. You also need to be computer literate. If you do not have experience using a computer, you will need to take CIS 118 Introduction to PC Applications: MS Office 3 credits. Upon successful completion of this program you should have the skills necessary for entry level employment in victim assistance.

Required Courses	Credits
CRJ 110 Introduction to Criminal Justice	3
CRJ 150 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 269 Adult Survivors of Childhood Molestation	3
PSY 237 Psychology of Death and Dying	3
SOC 265 Violence and Culture	3
Total Required Credits	30

Certificate:

Victim Assistance Administration

Upon successful completion of this program and employment experience as a victim advocate, you should be able to perform the duties of a victim assistance agency director or administrator.

Required Courses	Credits
CRJ 110 Introduction to Criminal Justice	3
CRJ 150 Victims of Crime and Trauma	3
CRJ 239 Managing Emergency Worker Stress	3
ACC 121 Accounting Principles I	4
MAN 200 Human Resources Management I	3
MAN 226 Principles of Management	3
MAR 216 Principles of Marketing	3
Total Required Credits	22

Certificate:

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

NOTE: Due to curriculum updates by the Colorado P.O.S.T. Board, the cost, credit hours and length of future academies will change. Call 303-914-6464 or 303-914-6462 for updated information prior to making application to the academy.

This certificate program exceeds the Colorado Peace Officers Standards and Training (P.O.S.T.) requirements for peace officer entry level training. Students currently earn 30 credits during

this intense course of study. Fifteen of these credits may be used to meet a portion of the Law Enforcement Emphasis Area requirement of the Associate of Applied Science degree in Criminal Justice. 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 I	8
CRJ 102 Basic Law Enforcement Academy II	6
CRJ 105 Basic Law	6
CRJ 106 Arrest Control Techniques	3
CRJ 107 Law Enforcement Driving	3
CRJ 108 Firearms	3
PED 110 Fitness Center Activity I	1
Total Required Credits	30

Early Childhood Education Program

The Early Childhood Education Program at Red Rocks Community College provides several alternatives for students desiring training in the Early Childhood Education field. The AA in Early Childhood is designed for those students desiring a Bachelor's Degree in Early Childhood Education. Financial assistance may be available for individuals currently employed in the field.

Program Admission Requirements:

All students enrolling in any degree or certificate program must meet the minimum assessment scores required by the college. Consult with Early Childhood Education director when beginning course of study.

Degree: Associate of Arts Early Childhood Education

Degree: Associate of Applied Science Early Childhood Education (pending approval)

Certificates: Preschool Group Leader Certificate Infant/Toddler Group Leader Certificate School Age Certificate Director's Certificate

AA Degree: Early Childhood Education

If you plan to transfer to a four-year college or university to complete a major in Early Childhood Education, you should complete the following courses. This degree reflects the ECE transfer agreement with the public four-year colleges and universities in Colorado. Consult with a faculty or academic advisor before beginning this program of study. A grade of C or better is required in all degree classes required for graduation. Students not pursuing an Early Childhood Education 4 year-degree may complete an Associate of Arts degree by meeting the General Education requirements on page 25.

Required Major Courses	Credits
ECE 101 Intro to Early Childhood Education	3
ECE 102 Early Childhood Lab Techniques	3
ECE 205 Nutrition, Health and Safety	3
ECE 238 Child Growth and Development	4
ECE 241 Human Relations for ECE	3

General Education Requirements

ENG 121 College Composition	3
ENG 122 Composition II	3
MAT 155 Integrated Math 1	3
MAT 156 Integrated Math 2	3
MUS 120 Music Appreciation	3
or	
ART 110 Art Appreciation	3
and	
LIT 255 Children's Literature	3
or	
LIT 115 Introduction to Literature	3
GEO 105 World Regional Geography	3
HIS 201 U.S. History I	3
POS 111 American Government	3
SPE 115 Public Speaking	3
Science	8
(must include two lab-based science courses):	
See faculty advisor for appropriate courses	

Transfer institution approved ECE elective credits 6

Total Required Credits 60

AAS Degree: Early Childhood Education (pending approval)

The following courses meet the requirements for a two-year Associate of Applied Science in Early Childhood Education at Red Rocks Community College. A grade of C or better is required in all degree classes.

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	205 Nutrition, Health and Safety	3
ECE	220 Curriculum Development: Methods and Techniques	3
ECE	238 Child Growth and Development	4
ECE	241 Administration: Human Relations for Early Childhood Professions	3
ECE	240 Administration of Early Childhood Care and Education Programs (Capstone)	3

Specific Program Requirements

EDU	153 ESL and Cultural Issues for Paraprofessionals	3
BUS	217 Business Communications and Report Writing	3
	or	
XXX (prefix tba)	Business for Family Day Care Providers	3
CIS	118 Introduction to PC Applications: MS Office	3
	or	
EDU	261 Teaching, Learning and Technology	3

Approved Electives 6 credits (select two courses):

ECE	111 Infant and Toddler Theory and Practice	3
ECE	225 Language and Cognition for the Young Child	3
ECE	226 Creativity and the Young Child	3
ECE	228 Language and Literacy	3
ECE	256 Working with Parents, Families, and Community Systems	3
ECE	260 The Exceptional Child	3

Other Electives	5
General Education Requirements See page 34	15

Total Required Credits	60
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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 will have met academic requirements for a Colorado Group Leader Certificate. In addition to the academic requirements, the Colorado Department of Human Services requires nine months (1,395 hours) of work experience. All courses leading toward the Group Leader Certificate apply toward the Director Certificate requirements and AAS.

Certificate: Preschool Group Leader

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	220 Curriculum Dev.: Methods and Techniques	3
ECE	238 Child Growth and Development	4
Total Required Credits		16

Certificate: Infant/Toddler Group Leader

Required Major Courses		Credits
ECE	101 Introduction to Early Childhood Professions	3
ECE	103 Guidance Strategies for Children	3
ECE	111 Infant and Toddler Theory and Practice	3
ECE	112 Infant and Toddler Lab Techniques	3
ECE	238 Child Growth and Development	4
Total Required Credits		16

Certificate: School Age (Pending approval)

Required Major Courses		Credits
ECE	191 School Age Theory and Practice	3
ECE	192 School Age Lab Techniques	3
PSY	238 Child Growth and Development	3
ECE	256 Working with Parents, Families, and Community Systems	3
ECE	275 Special Topics: Promoting Positive Mental Health in School-Age Programs	3
ECE	275 Special Topics: Curriculum Development for School-Age Programs	3
Total Required Credits		18

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 academic requirements for an Early Childhood Director Certificate. In addition to the academic requirements, the Colorado Department of Human Services requires 24 months (3,640 hours) of work experience. All courses leading toward the Director Certificate apply toward the requirements of the AAS degree in Early Childhood Education.

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 205 Nutrition, Health and Safety	3
ECE 220 Curriculum Development: Methods and Techniques	3
ECE 238 Child Growth and Development	4
ECE 241 Human Relations for Early Childhood Professionals	3
ECE 240 Administration of Early Childhood Care and Education Programs (Capstone)	3
Total Required Credits	25

Economics

Degree: Associate of Arts

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.

If you plan to transfer to a four year college or university to complete a major in economics, you should complete the following courses. Consult with a faculty or academic advisor before beginning this program of study. These courses provide the basic preparation leading to political science related careers.

Required Courses	Credits
ECO 101 Economics of Social Issues	3
MAT 121 College Algebra *	4
POS 105 Introduction to Political Science *	3
HIS 247 Contemporary World History	3
ECO 201 Principles of Macroeconomics*	3
ECO 202 Principles of Microeconomics*	3
Additional General Education requirements	29
See page 25.	
Additional Approved Electives	12
See page 26	
Total Required Credits	60

* Fulfills General Education requirements.

Electricity Commercial/ Industrial/ Residential

This program prepares 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, fire-fighters, 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 Technology advisor. 303.914.6511.

Degree:
Associate of Applied Science
Construction Electrician
Maintenance Electrician
Fire Protection Technology
Construction Technology with an
Emphasis in IBEW/NECA
(Construction Electrician)
Emphasis in Power Technology
Line Technician
Emphasis in Power Technology

Certificates:
Construction Electrician
Advanced Construction Electrician
Electrical Installation
National Electrical Code
Control Systems Technician
Residential Construction Electrician
Maintenance Electrician
Advanced Maintenance Electrician
Post-Degree Specialization for
Advanced Construction Electrician
Post-Degree Specialization for
Advanced Maintenance Electrician
Fire Code
Fire Alarm and Detection Technician

AAS Degree: Construction Electrician

Required Major Courses		Credits
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	169* Electrical Code Calculations	4
EIC	240* Fire Alarm Fundamentals	4
*Take two of the classes marked.		
Total Required Major Courses		36
General Education Requirements See Page 63		15
Construction Technology Requirements See Page 63		10
Total Required Credits		61

AAS Degree: Maintenance Electrician

Required Major Courses		Credits
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	165* Solid State Circuits and Devices	4
EIC	210 Advanced National Electrical Code	4
EIC	220 Advanced National Electrical Code	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
*Take two of the classes marked.		
Total Required Major Courses		36
General Education Requirements See Page 63		15
Construction Technology Requirements See Page 63		10
Total Required Credits		61

AAS Degree:

Fire Protection Technology

This degree prepares you 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.

Required Major Courses		Credits
CON	105 Construction Technology	4
CON	145 Construction Project Management	2
CON	230 Blueprint Reading	4
EIC	105 Basics of 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	240 Fire Alarm Fundamentals	4
EIC	241 Advanced Fire Alarm Systems	4
EIC	242 National Fire Alarm Code	4
EIC	287 NICET I	2
CAD	119 Intermediate CADD Applications	3
General Education Classes		15
See Page 63		
Total Required Credits		62

AAS Degree:

Construction Technology with an Emphasis in IBEW/NECA (Construction Electrician via CCCOnline)

Greg Morey, academic advisor – 303.914.6242 – greg.morey@rrcc.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 an AAS degree. The degree requires a total of 61 credits, of which 18 must be taken at RRCC or through RRCC via CCCOnline.

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. Fifteen approved general education credits must be earned through RRCC and/or CCCOnline
4. Three credits in Computer Science
5. File an Application for Graduation before completing your last class
6. Resolve all financial obligations to the college and return all college- owned materials

AAS Degree:

Emphasis in Power Technology Line Technician

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

- Substation Electrician**
- Meter Specialist**
- Apparatus Electrician**
- Instrument and Control Specialist**
- Electrician Specialist**
- Mechanic Specialist**
- Power Plant Operator**
- Field Engineering Specialist***
- Relay and Control Specialist***
- Utility Engineering Standards Specialist Tech***

*Upon program approval by the Department of Labor Articulation Agreement

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 of above-listed programs
2. A cumulative grade point average of 2.0 (a C average)
3. Fifteen approved general education credits must be earned through RRCC and/or CCCOnline
4. Three credits in Computer Science
5. File an Application for Graduation before completing your last class
6. Resolve all financial obligations to the college and return all college- owned materials

Certificate: Construction Electrician

Required Major Courses	Credits
CON 230 Blueprint Reading	4
CON 251 Construction Process	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 Electric Code I	4
EIC 135 National Electric Code II	4
EIC 169 Electrical Code Calculations	4
EIC 240 Fire Alarm Fundamentals	4
Total Required Credits	36

Certificate: Advanced Construction Electrician

Requires Construction Electrician Certificate or instructor's approval required

Required Major Courses	Credits
CON 230 Blueprint Reading	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 169 Electrical Code Calculations	4
EIC 205 Advanced Electrical Planning	4
Total Required Credits	32

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

Required Major Courses	Credits
EIC 130 National Electrical Code I	4
EIC 135 National Electrical Code II	4
EIC 169 Electrical Code Calculations	4
Total Required Credits	12

Certificate: Control Systems Technician

Required Major Courses	Credits
HVA 132 Air Conditioning/Refrigeration Controls	4
HVA 162 Heating Controls	4
HVA 231 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 230 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

Certificate: Maintenance Electrician

Required Major Courses	Credits
CON 105 Construction Technology	4
CON 230 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 220 Industrial Electrical Controls I	4
EIC 240 Fire Alarm Fundamentals	4
Total Required Credits	32

Certificate: Advanced Maintenance Electrician*

Required Major Courses	Credits
CON 230 Blueprint Reading	4
EIC 105 Basics of AC and DC Electricity	4
EIC 167 Electrical Maintenance Techniques	4
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
EIC 225 Programmable Controllers	4
Total Required Credits	32

Certificate: Post-Degree Specialization for Advanced Construction Electrician*

Requires Certificate for Maintenance or instructor's approval.

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

Certificate: Post-Degree Specialization for Advanced Maintenance Electrician*

Required Major Courses	Credits
EIC 165 Solid State Devices and Circuits	4
EIC 220 Industrial Electrical Controls I	4
EIC 225 Programmable Controllers	4
EIC 241 Advanced Fire Alarm Systems	4
Total Required Credits	16

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

Certificate Fire Code

Required Major Courses	Credits
EIC 130 National Electrical Code I	4
EIC 135 National Electrical Code II	4
EIC 242 National Fire Alarm Code	4
FST 204 Fire Codes and Ordinances	3
Total Required Credits	15

Certificate Fire Alarm and Detection Technician

Required Major Courses	Credits
CAD 119 Intermediate CADD Applications	3
CON 230 Blueprint Reading	4
EIC 150 DC Circuit Fundamentals	4
EIC 155 AC Circuit Fundamentals	4
EIC 240 Fire Alarm Fundamentals	4
EIC 241 Advanced Fire Alarm Systems	4
EIC 242 National Fire Alarm Code	4
EIC 287 NICET I	2
Total Required Credits	29

Elementary Education

(See Teacher Education)

Emergency Management and Planning

Degree: Associate of Applied Science

Emergency Management and Planning

Certificate:

Emergency Management and Planning

AAS Degree:

Emergency Management and Planning

(Offered through CCOOnline)

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.cconline.org. (Pick Red Rocks, then Emergency Management and Planning). Information: 303.914.6462.

Required Major Courses (30 credits required)	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
or	
EMP 247 Decision Making in a Crisis	3
EMP 242 Effective Communications	3
EMP 244 Developing Volunteer Resources	3
EMP 280 Business Emergency Management	3
EMP 291 Public Information Officer	3

General Education Courses Required		15
ENG 131 Technical Writing/English Composition I	3	
or		
ENG 121 English Composition	3	
MAT 107 Career Math (or higher)	3	
PSY 101 General Psychology	3	
SOC 101 Introduction to Sociology	3	
HUM 121 Survey of Humanities	3	

Electives		15
ENV* 101 Intro to Environmental Science	3	
FST* 107 Hazardous Materials Awareness/Operations	3	
FST 201 Instructional Methodology	3	
MAN 200 Human Resource Management	3	
CIS 115 Introduction to Computer Systems		
or		
CIS 118 Introduction to PC Applications	3	
MAN 226 Principles of Management (on the internet)	3	
POS 211 Public Finance	3	
EMP 285* Independent Study	1-6	

*Not available online

Total Required 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.

Required 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	
or	
EMP 247 Decision Making in a Crisis	3
EMP 242 Effective Communications	3
EMP 244 Developing Volunteer Resources	3
EMP 280 Business Emergency Management	
EMP 291 Public Information Officer	3
Total Required Credits	30

Emergency Medical Services

Degree: Associate of Applied Science

Paramedicine

Certificates:

Emergency Medical Technician-Basic I Emergency Medical Technician-Basic II

This program is designed to train workers in the field of Emergency Medical Service. It begins with an entry level EMT-Basic certificate program, and includes an Associate of Applied Science degree in Paramedicine. Students should consult with an Emergency Medical Service faculty advisor early in their college career to explore all of their educational options. Students must earn a C or better in all EMS courses to graduate. All students must complete a criminal background check prior to enrolling in this program. Students must use American DataBank's online background check procedures at : www.healthcareex.com.

AAS Degree:

Paramedicine

This program assists students in advancing their careers in the EMS system.

Required Courses	Credits
EMS 125 Emergency Medical Technician – Basic	9
EMS 170 Emergency Medical Technician – Basic Clinical	1
EMS 130 EMT Intravenous Therapy	2
HPR 190 Basic EKG Interpretation	2
EMS 225 Fundamentals of Paramedic Practice	3
EMS 226 Fundamentals of Paramedic Practice Lab	2
EMS 227 Paramedic Special Considerations	3
EMS 228 Paramedic Special Considerations Lab	2
EMS 229 Paramedic Pharmacology	3
EMS 230 Paramedic Pharmacology Lab	2
EMS 231 Paramedic Cardiology	5
EMS 232 Paramedic Cardiology Lab	1
EMS 233 Paramedic Medical Emergencies	4
EMS 234 Paramedic Medical Emergencies Lab	1
EMS 235 Paramedic Trauma Emergencies	4
EMS 236 Paramedic Trauma Emergencies Lab	1
EMS 237 Paramedic Internship Preparatory	2
EMS 280 Paramedic Internship I	6
EMS 281 Paramedic Internship II	6

General Education Courses Required	Credits
ENG 131 Technical Writing	3
SPE 125 Interpersonal Communication or	
COM 126 Communication in Healthcare	3
MAT 107 or higher	3
BIO 106 (or 201 and 202) Anatomy and Physiology	4
PSY 101 Intro to Psychology	3
Total required Credits	75

Certificate:

Emergency Medical Technician-Basic I

This program prepares students to sit for the National Registry practical and written certification exams, which are required for Colorado state certification. Once certified, students are eligible for entry-level employment in the emergency medical services system.

Required Courses:	Credits
EMS 125 Emergency Medical Technician-Basic	9
EMS 170 Emergency Medical Technician-Basic Clinical	1
Total Required Credits	10

Certificate:

Emergency Medical Technician-Basic II

This certificate program includes the courses needed to apply to most Colorado Paramedic training programs. Most of these programs also require approximately 1 year of field experience as an EMT-Basic.

Required Major Courses	Credits
EMS 125 Emergency Medical Technician-Basic	9
EMS 170 Emergency Medical Technician-Basic Clinical	1
EMS 130 EMT Intravenous Therapy	2
HPR 190 Basic EKG Interpretation	2
BIO 201 Human Anatomy and Physiology I	4
BIO 202 Human Anatomy and Physiology II	4
Total Required Credits	22

Engineering

(Pre-Engineering)

Degree: Associate of Science

If you plan to transfer to a four-year college or university to complete a major in Engineering you should complete the following courses. Consult with a faculty or academic advisor before beginning this program of study. These courses provide the basic preparation leading to Engineering related careers.

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

*Fulfills General Education requirement

Additional General Education Courses 24
See page 27

Approved electives 2
See page 28

Total Required Credits 60

Highly recommended:

CHE 112 General College Chemistry II 5

Engineering Graphics Technology

(For further information contact Delia Ochoa at 303.914.6572)

Degrees:

Associate of Applied Science

- Engineering Graphics Technology
Emphasis in Architectural**
- Engineering Graphics Technology
Emphasis in Mechanical**

Certificates:

- Engineering Graphics for:
Architectural**
- Mechanical**
- Interior Design**
- Civil**

Upgrade Training:

- Industry Upgrade AutoCAD**
- Industry Upgrade Pro/Engineer**
- Industry Upgrade SolidWorks**
- Industry Upgrade Inventor**

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 or challenged for previous educational and 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 at 303 914-6385 or at 303-914-6572.

AAS Degree:

Engineering Graphics Technology Area of Emphasis: Architectural

Along with the Engineering Graphics course work, any 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. It might be helpful to remember that one credit is equal to 20 hours of class time.

Recommended courses for AAS degree	Credits
CAD 110 Basic CAD	6
CAD 119 Intermediate CAD I	3
CAD 121 Intermediate CAD II	3
CAD 123 Basic 3D CAD 3	3
CAD 202 Computer Aided Drafting 3D	3
EGT 210 Framing Methods	3
EGT 211 Roof Design	3
EGT 230 Drafting and Design I	6
EGT 231 Drafting and Design II	6
CAD 217 AutoDesk Viz	6
CAD 285 Independent Study	3
Additional General Education Courses	15
Total required credits	60

You may also take advanced applications in Architectural Desktop and AutoDesk VIZ to complete the forty-five program credits.

AAS Degree: Engineering Graphics Technology Area of Emphasis: Mechanical

Along with the Engineering Graphics coursework, any 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 for AAS degree	Credits
CAD 110 Basic CAD	6
CAD 119 Intermediate CAD I	3
CAD 102 Intermediate CAD II	3
CAD 123 Basic 3D CAD	3
CAD 202 Computer Aided Drafting 3D	3
EGT 240 Assembly and Details GD&T	3
EGT 241 Mechanisms and Drives	3
EGT 230 Drafting and Design I	6
EGT 231 Drafting and Design II	6
CAD 217 AutoDesk VIZ	6
CAD 285 Independent Study	3
Additional General Education Courses	15
Total required credits	60

You may also take advanced applications such as Pro/E, SolidWorks, AutoCAD Inventor or AutoDesk VIZ to complete the forty-five program credits.

Certificates Engineering Graphics for Interior Design, Architectural, Mechanical or Civil.

Course material is relative to certificate path. A full-time student can complete a certificate in one semester. If you are a part-time student, it will take you longer to complete the sequence. A part-time student can complete a maximum of six credits in one semester. The sequence of courses is:

CAD 110 Basic CAD	6
CAD 119 Intermediate CAD I	3
CAD 121 Intermediate CAD II	3
CAD 123 Basic 3D CAD	3
Total Required Credits	15 credits

Upgrade Training: Industry Upgrade AutoCAD

Available Courses:	Credits
CAD 110 Basic CAD	6
CAD 119 Intermediate CAD I	3
CAD 121 Intermediate CAD II	3
CAD 123 Basic 3D CAD 3	
CAD 202 Computer Aided Drafting 3D	3
EGT 230 Drafting and Design I	6
EGT 231 Drafting and Design II	6
CAD 217 AutoDesk VIZ Basic	6
CAD 218 AutoDesk VIZ Advanced	6

Upgrade Training: Industry Upgrade Pro/Engineer

Available Courses:	Credits
CAD 203 Pro/Engineer Basic Part and Assembly I	6
CAD 204 Pro/Engineer Draw/Detail Fundamentals I	6
CAD 206 Pro/Engineer Advanced I	6
CAD 207 Pro/Engineer Current Version Update	3
CAD 208 Pro/Engineer Update	3

Upgrade Training: Industry Upgrade SolidWorks

Available Courses:	Credits
CAD 256 SolidWorks Basics	6
CAD 257 SolidWorks Intermediate	6
CAD 258 SolidWorks Advanced	6

Upgrade Training: Industry Upgrade Inventor

Available Courses:	Credits
CAD 241 Inventor Basics	6
CAD 242 Inventor Intermediate	6
CAD 243 Inventor Advanced	6
CAD 285 Independent Study	1-6
(credits arranged with instructor)	

English

Degree: Associate of Arts

If you plan to transfer to a four-year college or university to complete a major in English or Literature, you should complete the following courses. Consult with a faculty or academic advisor before beginning this program of study. These courses provide the basic preparation leading to English related careers. You may earn an Associate of Arts degree by meeting the General Education requirements on page 25. See page 26 for approved electives.

Required Courses	Credits
LIT 115 Introduction to Literature *	3
LIT 201 Masterpieces of Literature I *	3
LIT 202 Masterpieces of Literature II*	3
ENG 221 Creative Writing	3
Total required Credits	12

*Fulfills General Education requirements

Additional General Education Courses **32**
See page 25

Approved electives **16**

Select electives with ENG and LIT prefixes from the list on page 26 after talking to an English faculty advisor.

Total Required Credits **60**

Entrepreneurship

(See Business)

Facility Maintenance

(See Construction Technology, Building Maintenance)

Fine Woodworking

Degrees: Associate of Applied Science

Fine Woodworking

Certificates:

- General Fine Woodworking**
- Woodworking Fundamentals**
- Wood Turners**
- Luthier Fundamental**
- Cabinetmaker**
- Craftsman**
- Joiner**
- Artisan**
- Post-Degree Master Craftsman**

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.

AAS Degree: Fine Woodworking

Required Courses	Credits
FIW 100 Fundamentals of Woodworking	4
FIW 118 Lathe Turning	4
FIW 125 Finishing Wood	4
FIW 201 Joinery	4
FIW 209 Cabinetmaking	4
FIW 215 Advanced Joinery	4
FIW 213 Furniture Making	4
FIW XXX FIW Electives	8
Construction Technology or FIW Electives	10
Options Include	
FIW 104 Elements of Design	2
CON 105 Construction Technology	4
CON 230 Blueprint Reading	4
CON 251 Construction Process	4
General Education Electives	15
See page 63	

Total Required Credits **61**

Certificate: General Fine Woodworking

Required Courses		Credits
FIW 100	Fundamentals of Woodworking	4
FIW 118	Lathe Turning	4
FIW 125	Finishing Wood	4
FIW 201	Joinery	4
FIW 209	Cabinetmaking	4
FIW 215	Advanced Joinery	4
FIW 213	Furniture Making	4
FIW XXX	FIW Electives	4
Total Required Credits		32

Certificate: Woodworking Fundamentals

This certificate is designed to give students the basic of most woodworking applications. It is well suited for those students desiring to seek an occupation within an existing woodworking industry.

Required Courses		Credits
FIW 100	Fundamentals of Woodworking	4
FIW 118	Lathe Turning	4
FIW 125	Finishing Wood	4
FIW 209	Cabinetmaking	4
Total Required Credits		16

Certificate: Wood Turners

Students desiring validate their experience in the world of wood turning. Students who successfully complete this degree are seeking to begin their own woodturning or craft based business.

Required Courses		Credits
FIW 100	Fundamentals of Woodworking	4
FIW 118	Lathe Turning	4
FIW 125	Finishing Wood	4
FIW 209	Cabinetmaking	4
Total Required Credits		16

Certificate: Luthier Fundamentals

As students progress through are rapidly growing Luthier program they are finding a desire to seek employment within the musical instrument repair and construction business, or become entrepreneurs within this field of woodworking. This certificate was designed to validate their experience in this field.

Required Courses		Credits
FIW 100	Fundamentals of Woodworking	4
FIW 102	Classical Guitar Making	5
FIW 103	Steel String Guitar Making	5
FIW 125	Finishing	4
Total Required Credits		18

Certificate: Cabinetmaker

Students seeking employment within the cabinetmaking business are required to show competencies on the tools associated with and the design of basic box cabinetmaking. This certificate was designed to represent those skills which are commonly sought within this field.

Required Courses		Credits
FIW 100	Fundamentals of Woodworking	4
or		
FIW 109	Introduction to Cabinetmaking	
FIW 108	Tool Making and Jigs	4
FIW 128	Doormaking	4
FIW 209	Cabinetmaking II	4
Total Required Credits		16

Certificate: Craftsman

This certificate was designed for students who desire to show evidence of their knowledge of the basic skills required for a craftsman of woodworking in order to pursue an entrepreneurial career within the field.

Required Courses		Credits
FIW 100	Fundamentals of Woodworking	4
FIW 201	Joinery	4
FIW 205	Tablemaking	4
FIW 213	Furniture Making	4
Total Required Credits		16

Certificate:

Joiner

This certificate was designed for students who desire to show evidence of their knowledge of the skills required in order to seek employment within an existing furniture making business.

Required Courses			Credits
FIW	100	Fundamentals of Woodworking	4
FIW	108	Toolmaking & Jigs	4
	or		
FIW	101	Introduction to Woodworking	8
FIW	201	Joinery	4
FIW	206	Chairmaking	4
FIW	213	Furniture Making	4
FIW	215	Advanced Joinery	4
Total Required Credits			24

Certificate:

Artisan

This certificate requires the completion of two particular projects. The first being the completion of a workbench and the second the completion of a tool box. These should be designed by the student to fit his or her individual needs. Projects will be judged by a panel of instructors and/or professionals in the field.

Required Courses			Credits
FIW	100	Fundamentals of Woodworking	4
FIW	106	Plane Making	4
	or		
FIW	101	Introduction to Woodworking	8
FIW	118	Lathe Turning	4
FIW	122	Woodcarving	4
FIW	200	Veneering & Marquetry	4
FIW	201	Joinery	4
FIW	213	Furniture Making	4
FIW	215	Advanced Joinery	4
FIW	XXX	Elective Approved by Advisor	4
Total Required Credits			32

Certificate:

Post-Degree Master Craftsman

This certificate 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 Courses		Credits	
FIW	106	Planemaking	4
FIW	102	Classical Guitar Making	5
FIW	108	Toolmaking & Jigs	4
FIW	116	Cabriole Leg & Queen Anne Furniture	4
FIW	122	Woodcarving	4
FIW	128	Doormaking	4
FIW	150	Period furniture Making	4
FIW	200	Veneering and Marquetry	4
FIW	205	Tablemaking	4
FIW	206	Chairmaking	4
FIW	210	Bending and Laminating	4
FIW	220	Advanced Furniture and Cabinet Construction	4
FIW	XXX	Elective Approved by Advisor	4
Total Required Credits		53	

Fire Protection Technology

(See Electricity Commercial/ Industrial/ Residential)

Fire Science Technology

Degrees: Associate of Applied Science

**Fire Science Technology
Fire Service Management**

Certificates:

**Fire Fighter I
Fire Instructor
Fire Officer I
Fire Officer II
Fire Officer III
Driver Operator
Technical Heavy Rescue
Wildland Management
Fire Inspector
Fire Investigator
Hazardous Materials**

Completion of this curriculum prepares you for:

- Entry into a career in 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

Prior to enrollment, all students who are not presently members of the fire department are required to take assessment tests which will be administered in the Learning Development Center by the college assessment staff. The fire science instructor, upon consultation with assessment staff, will evaluate test results in order to assist students with proper placement in their course of study in fire science. Advanced students are expected to substitute advanced courses for introductory courses. Information: 303.914.6115 or 303.914.6333

AAS Degree:

Fire Science Technology

This is for students new to the fire service or preparing for the fire service. Students must earn a C or better in all Fire Science and general education courses to graduate.

Required Major Courses	Credits
FST 100 Firefighter I Academy	9
FST 102 Intro 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 Awareness Operations	3
FST 151 Driver Operator	3
or	
FST 152 Wildland Firefighting	
FST XXX Heavy Rescue electives	3
FST 201 Instructional Methodology	3
FST 202 Firefighting Strategy and Tactics	3
FST 204 Fire Codes and Ordinances	3
FST 205 Fire Cause Determination	3
FST 206 Fire Company Supervision and Leadership	3
PED 110 Fitness Center Activity I	1
PED 111 Fitness Center Activity II	1
Total Required Major Credits	50
General Education Requirements	15
See page 34	
Approved Electives	6
CRJ 225 Crisis Intervention	3
CRJ 239 Managing Emergency Worker Stress	3
EMS 126 Emergency Medical Technician-Basic and	9
EMS 170 EMT Basic Clinical	1
FST 101 Firefighter II Academy	3
FST 110 Job Assessment	3
FST 121 Technical Rope Rescue	4
FST 132 Structural Collapse Rescue	2
FST 133 Trench Rescue	2
FST 134 Confined Space Rescue	2
FST 135 Ice Water Rescue	2
FST 136 Swift Water Rescue	2
FST 137 Vehicle Extrication	2
FST 150 Introduction to Fire Prevention Education	3
FST 152 Wildland Firefighter (I and II)	3
FST 175 Special Topics	1-3
FST 180 Internship	1-6
FST 250 Chemistry for Fire Protection	3
FST 252 Arson Investigation (Fire Investigator)	3
FST 254 Hazardous Materials Technician	3
FST 256 Fire Service EMS Management	3
FST 258 Wildland Fire Incident Management Organization	3
FST 260 Intermediate Fire Behavior S-290	2
FST 261 Fire Operations in the Urban Interface	2
FST 262 Wildland Fire Behavior	2
FST 263 Powersaws S-212	2

FST 264 Helicopter Crew S-217	2
FST 265 Ignition Operations S-234	2
FST 266 Crew Boss C-230	2
FST 270 Basic Air Ops S-270	2
FST 285 Independent Study	1-3
Total Credits for Degree	71

AAS Degree:

Fire Service Management

This degree is for students experienced as firefighters and preparing for career advancement. Students must earn a C or better in all Fire Science and general education courses to graduate.

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.

The Fire Science Management degree is also available online. Transfer your credits to Regis University and complete a Bachelors of Science in Public Administration online as well. Get the degree you need to move up the promotion ladder!

Required Major Courses	Credits
FST 201 Instructional Methodology	3
FST 202 Firefighting Strategy and Tactic I	3
FST 204 Fire Codes and Ordinances	3
FST 205 Fire Cause Determination	3
FST 206 Fire Company Supervision and Leadership	3
FST 207 Strategy and Tactics II	3
FST 251 Fire Service and The Law	3
FST 253 Fire Ground Organization and Command (ICS)	3
FST 255 Fire Service Management (Fire Officer II)	3
FST 257 Fire Department Administration	3
FST 275 Special Topics--Fire Analysis Thesis	3
Total Required Major Courses	33
General Education Requirements	15
See page 34	
Approved Electives	12
(see list of electives under Fire Science Technology degree, page 83)	
Total Credits for Degree	60

Certificate

Fire Fighter I

Prerequisite: PED 110 (section 402)

(may test out of this requirement)

Prerequisite: FST 160 (CPAT Test Prep)

Strongly recommended prerequisite:

EMS 125/170 (EMT-Basic)

Required Major Courses	Credits
FST 100 Firefighter I Academy	9
FST 102 Intro to Fire Science and Suppression	3
PED 110 Fitness Center Activity I	1
Total Required Credits	13

Certificate

Fire Instructor

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

Certificate

Fire Officer I

Prerequisites:

ENG 121 English Composition I

Firefighter I (Colorado CDFS certification)

Required Major Courses	Credits
FST 201 Instructional Methodology	3
FST 202 Firefighting Strategy and Tactics I	3
FST 204 Fire Codes and Ordinances	3
FST 206 Fire Company Supervision and Leadership	3
Total Required Credits	12

Certificate

Fire Officer II

Prerequisite: Fire Officer I Certificate

Required Major Courses	Credits
FST 205 Fire Cause Determination	3
FST 207 Strategy and Tactics II	3
FST 253 Fire Ground Organization and Command (ICS)	3
FST 255 Fire Service Management	3
Total Required Credits	12

Certificate

Fire Officer III

Prerequisites: Fire Officer I and II Certificates

Required Major Courses	Credits
FST 251 Fire Service and The Law	3
FST 257 Fire Department Administration	3
FST 275 Special Topics--Fire Analysis	3
Total Required Credits	9

Certificate

Driver Operator

Required Major Courses	Credits
FST 151 Driver Operator	3
FST 203 Fire Science Hydraulics	3
Total Required Credits	6

Certificate

Technical Heavy Rescue

Required Major Courses	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

Certificate

Wildland Management

Required Major Courses	Credits
FST 152 Wildland Firefighting	3
FST 253 Fire Ground Organization and Command (ICS)	3
FST 261 Fire Operations in the Urban Interface	2
Total Required Credits	8

Certificate

Fire Inspector

Prerequisite: Fire Officer I

Required Major Courses	Credits
FST 105 Building Plans and Construction	3
FST 106 Fire Inspection Practices	3
FST 204 Codes and Ordinances	3
Total Required Credits	9

Certificate

Fire Investigator

(Police and fire personnel only)

Required Major Courses	Credits
FST 205 Fire Cause Determination	3
FST 252 Arson Investigation	3
FST 285 Independent Study--Fire Analysis	3
CRJ 240 Criminal Investigations	3
CRJ 245 Interviewing Techniques	3
Total Required Credits	15

Certificate

Hazardous Materials

Required Major Courses	Credits
FST 107 Hazardous Materials Awareness Operations	3
FST 202 Firefighting Strategy and Tactics	3
FST 253 Fire Ground Organization and Command (ICS)	3
FST 254 Hazardous Materials Technician	3
Total Required Credits	12

Foreign Languages

Degree: Associate of Arts

If you plan to transfer to a four-year college or university to complete a major in a foreign language, you must complete the following courses. Consult with a faculty or academic

Advisor before beginning this program of study. These courses provide the basic preparation leading to professional advancement in careers such as business, computer technology, medicine, engineering and in the natural and behavioral sciences.

Required Courses	Credits
Choose one (FRE, GER, SPA)	
FRE/GER/SPA 111 French/German/Spanish Language I	5
FRE/GER/SPA 112 French/German/Spanish Language II	5
FRE/GER/SPA 211 French/German/Spanish Language III	3
FRE/GER/SPA 212 French/German/Spanish Language IV	3
General Education Courses See page 25	38
Approved Electives See page 26	6
Total Required Credits	60

Geology

Degree: Associate of Science

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 geology. You are urged to consult with a geology faculty advisor before beginning any program of study. Some courses might not be offered each semester.

These courses provide the basic preparation leading to geology related careers.

Required Courses	Credits
BIO 112 General College Biology II	5
CHE 111 General College Chemistry I	5
GEY 111* Physical Geology	4
GEY 121* Historical Geology	4
GEY XXX Other GEY courses	4
MAT 121* College Algebra	4
MAT 122 College Trigonometry	3
*Fulfills General Education requirement	
Additional General Education Courses See page 27	27
Approved electives	4
Total Required Credits	60

Health Professions

Certificates:

Phlebotomy
L.P.N. Refresher Program
R.N. Refresher Program
Nurse Aid
Holistic Health Professional

Certificate

Phlebotomy

This CCHE approved 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 setup and process, medical terminology specific to the laboratory, customer service skills, regulatory issues, venipuncture and finger-stick technique and numerous other collection procedures. 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. Immunizations are required before the start of the internship. Please fill out an application form to be considered for this course. This can be found on the Health Careers website. Permission of the instructor is required to register for both courses. Students must be at least 18 years old to register for this program.

Required Courses	Credits
HPR 112 Phlebotomy Certification	4
HPR 180 Phlebotomy Internship	3
Total Required Credits	7

Certificate:

L.P.N. Refresher Program

Requirements for this program: A current Colorado LPN license, proof of immunizations, liability insurance, lifting requirement, Health Care Provider – BLS certification, and a letter from a physician stating you are physically and mentally able to participate in this course. Students must be successfully passing NUR 190 with a grade of "C" or better in order to participate in NUR 191 clinical rotation. Students must successfully pass both NUR 190 and NUR 191 with a grade of "C" or better, in order to receive a Certificate of Completion. For further information call: 303-914-6621. All students must complete a criminal background check prior to enrolling in this course. Students must use American DataBank's online background check procedures at : www.healthcareex.com.

Required Major Courses	Credits
NUR 190 LPN Refresher	10
NUR 191 LPN Refresher Clinical	2
Total Required Credits	12

Certificate:

Gerontology

Pending approval. For further information, call 303-914-6621.

Required Courses

TBA

Credits

15

Certificate:

R.N. Refresher Program

Requirements for this program: A current Colorado RN license, proof of immunizations, liability insurance, Health Care Provider – BLS certification, and a letter from a physician stating you are physically and mentally able to participate in this course. Lifting requirement. Students must be successfully passing HPR 210 and NUR 290 with a grade of “C” or better in order to participate in NUR 291 clinical rotation. Students must successfully pass HPR 210, NUR 290 and NUR 291 with a grade of “C” or better, in order to receive a Certificate of Completion. For further information call: 303-914-6621. All students must complete a criminal background check prior to enrolling in this course. Students must use American DataBank’s online background check procedures at : www.healthcareex.com.

Required Courses

NUR 290 RN Refresher

10

NUR 291 RN Refresher Clinical

2

HPR 210 Physical Assessment

2

Total Required Credits

14

Certificate:

Nurse Aide

Requirements for this program: Proof of immunizations, health care Provider - BLS, and a letter from a physician stating you are physically and mentally able to participate in this course. Lifting requirement. Students are to register for the NUA 170 clinical section that corresponds to the NUA 101 class. Students must be successfully passing NUA 101 with a grade of “C” or better in order to participate in NUA 170 clinical rotation. Students must successfully pass both NUA 101 and NUA 170 with a grade of “C” or better, in order to receive a Certificate of Completion. For further information call: 303-914-6621. All students must complete a criminal background check prior to enrolling in this course. Students must use American DataBank’s online background check procedures at : www.healthcareex.com.

Required Courses

NUA 101 Nurse Aide Theory/Lab

4

NUA 170 Nurse Aide Clinical

1

Total Required Credits

5

Certificate:

Holistic Health Professional

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.

Required Courses

HHP 229 Wellness Counseling

1

HHP 244 Holistic Health I

1

HHP 254 Holistic Health II

2

HHP 256 Holistic Health III*

2

*13 credits must be completed before participating in HHP 256 Holistic Health III

Choose an additional 10 credits 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 subcategories. Courses are added frequently; please call the Allied Health office at 303-914-6621 for additional information.

Physical

HHP 111 Herbology I

1

HHP 125 Feldenkrais

0.5

HHP 130 Reiki Level I

1

HHP 145 Digestive Wellness

1

HHP 166 Introduction to Reflexology

1

HHP 167 Soft Hands 1

1

HHP 190 Crystals and Minerals in Healthcare

0.5

HHP 202 Aromatherapy

0.5

HHP 211 Herbology II

2

HHP 221 High Level Wellness

1

HHP 224 Intro to Massage Therapy

1

HHP 236 Dance Therapy and Healing

0.5

HHP 239 Issues in Holistic Nutrition

0.5

HHP 242 Healing Touch Level 1

1

HHP 246 Reiki Level II

1

HHP 260 Advanced Reflexology

1

Emotional

HHP 100 Complementary Healing Methods

1

HHP 103 Circle of Healing

1

HHP 110 Neurolinguistic Programming I

0.5

HHP 212 Neurolinguistic Programming II

0.5

HHP 214 Exploring Your Dreams

1

HHP 215 The Role of Art in Healing

1

HHP 227 Communication Skills

0.5

HHP 249	Journaling, the Healing Journey	1
HHP 262	Psychoneuroimmunology	0.5
HHP 263	Creating a Holistic Practice	0.5
HHP 265	Gift of Self-Esteem	1
HHP 267	Living Without Limits	0.5

Spiritual

HHP 104	The Healing Mind	0.5
HHP 135	Assessing Inner Resources I	1
HHP 140	Assessing Inner Resources II	1
HHP 160	Learn to Meditate	0.5
HHP 168	Turaya Meditation	1
HHP 213	Spiritual Care	0.5
HHP 241	Healing with Imagery	0.5
HHP 258	Journaling The Spiritual Journey	1
HHP 269	Healing Presence	1
Total Required Credits		16

Heating

(See Air Conditioning, Heating and Refrigeration)

History

Degree: Associate of Arts

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 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.

Required Courses	Credits
Take one of the following courses.	
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

*Fulfills General Education requirement.

Additional General Education Courses See page 25	35
Approved Electives See page 26	22
Total Required Credits	60

HVAC/R

(See Air Conditioning, Heating and Refrigeration)

International Studies

Degree: Associate of Arts

International Studies examine the relationships among modern nation states. Topics include ideologies, power and influence, conflict and cooperation, diplomacy, nationalism and the international economy.

If you plan to transfer to a four year college or university to complete a major in international relations, you should complete the following courses. Consult with a faculty or academic advisor before beginning this program of study. These courses provide the basic preparation leading to political science related careers.

Required Courses	Credits
POS 205 International Relations	3
GEO 105 World Geography*	3
HIS 247 Contemporary World History	3
ECO 201 Principles of Macroeconomics*	3
Foreign Language (211 or 212)	3

*Fulfills General Education requirement.

Additional General Education requirements **32**
See page 25

Additional Approved Electives **13**
See page 26

Total Required Credits **60**

Management/Marketing

(See Business)

Manufacturing Technology

Degree: Associate of Applied Science

Electro-Mechanical Industrial Maintenance Technology Applied Technology

Certificates

**Industrial Maintenance Technology
Industrial Electrical Technician
Code and Standards
Commercial/Industrial Heating and Cooling
Low Voltage Technician
Electro-Mechanical Technician**

AAS Degree:

Electro-Mechanical Industrial Maintenance Technology

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 electro-mechanical systems.

Required Courses			Credits
EIC	105	Basics of AC/DC Electricity	4
EIC	110	Electrical Installations I	4
EIC	120	Electrical Installations II	4
EIC	220	Industrial Electrical Controls	4
EIC	225	Programmable Controls **	4
HVA	102	Basic Refrigeration	4
HVA	110	Heating Fundamentals **	4
HVA	113	Refrigerant Recovery Training	1
HVA	132	Air Conditioning and Refrigeration Controls	4
HVA	162	Heating Controls	4
HVA	231	Pneumatic Controls	4
HVA	247	Hot Water Heating**	4
HVA	251	Building Automation **I	4
**Choose three for the four for a total of 60 credits			
General Education Requirements			15
See page 63			
Total Required Credits			60

AAS Degree:

Applied Technology

Offered in conjunction with National Technology Transfer (NTT) and CCCOnline.

Associate of Applied Science Degree Requirements:
See www.ccconline.org

Certificate:

Industrial Maintenance Technology

Required Courses			Credits
EIC	105	Basics of AC/DC Electricity	4
EIC	110	Electrical Installations I	4
EIC	120	Electrical Installations II	4
EIC	220	Industrial Electrical Controls	4
EIC	225	Programmable Controls **	4
HVA	102	Basic Refrigeration	4
HVA	110	Heating Fundamentals **	4
HVA	113	Refrigerant Recovery Training	1
HVA	132	Air Conditioning and Refrigeration Controls	4
HVA	162	Heating Controls	4
HVA	231	Pneumatic Controls	4
HVA	247	Hot Water Heating **	4
HVA	251	Building Automation I **	4
Total Required Credits			41

**Choose two of the four for a total of 41 credits.

Certificate: Industrial Electrical Technician

9 credits required for certificate from the following list:

EIC 104	Basics of Industrial Electricity	1.5
EIC 124	Electrical Safety Requirements and Procedures	1.5
EIC 130	National Electrical Code	4
EIC 144	Grounding and Bonding	1.5
EIC 166	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
EIC 229	AC and DC Variable Speed Drive Technology	1.5
EIC 234	High Voltage Electrical Safety	1

Certificate: Code and Standards

7.5 credits required for certificate from following list.

EIC 124	Electrical Safety Requirements and Procedures	1
EIC 130	National Electrical Code	4
EIC 132	Building Inspection	1
EIC 134	Life Safety Code (NFPA 101)	1
EIC 144	Grounding and Bonding	1.5
EIC 234	High Voltage Electrical Safety	1
EIC 242	National Fire Alarm Code	4

Certificate: Commercial/Industrial Heating and Cooling

7.5 credits required for certificate from the following list.

EIC 166	Tuning DDC/Process Control Loops	1
EIC 222	Introduction to Instrumentation and Process Control	1.5
HVA 114	Centrifugal Pumps	1.5
HVA 131	Refrigeration and Air Conditioning	1.5
HVA 192	Refrigerant Retrofit Training	1.5
HVA 194	Fundamentals Of Pneumatic Comfort Controls	1.5
HVA 263	Chillers	1.5

Certificate: Low Voltage Technician

7.5 credits required for certificate from the following list:

EIC 124	Electrical Safety	1
EIC 104	Basics of Industrial Electricity	1.5
EIC 132	Electrical Code	1.5
EIC 185	FCC Licensing prep	1.5
EIC 250	Fiber Optics Training	1.5
EIC 251	Fiber Optics Advanced Training	1.5
EIC 252	Comprehensive Structured Cabling	1.5
EIC 253	Fiber Optics Certification	1
EIC 254	Telephony	1.5
EIC 268	Fiber Optics Networks	2

Certificate: Electro-Mechanical Technician

9 credits required for certificate from the following list.

EIC 104	Basics of Industrial Electricity	1.5
EIC 124	Electrical Safety Requirements and Procedures	1
EIC 144	Grounding and Bonding	1.5
EIC 166	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
EIC 226	Understanding Programmable Logic Controllers Advanced	1.5
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 234	High Voltage Electrical Safety	1.5
HVA 114	Centrifugal Pumps	1.5
HVA 124	Refrigeration and Air Conditioning	1.5
HVA 126	Refrigerant Retrofit Training	1.5

Mathematics

Degree: Associate of Science

If you plan to transfer to a four-year college or university to complete a major in Mathematics you should complete the following courses. Consult with a faculty or academic advisor before beginning this program of study. These courses provide the basic preparation leading to Mathematics related careers.

Required Courses	Credits
MAT 201 Calculus I *	5
MAT 202 Calculus II	5
MAT 204 Calculus III	5
MAT 255 Linear Algebra	3
MAT 261 Differential Equations	4
CSC 160 Computer Science I	4
PHY 211 Physics: Calculus Based I*	5
PHY 212 Physics: Calculus Based I*	5
*Fulfills General Education requirement	
Additional General Education Courses See page 27	24
Total Required Credits	60

Medical Office Technology

Degree:
Associate of Applied Science
Medical Assisting
Medical Office

Certificates:
Medical Assisting
Medical Office

The medical office programs are designed to prepare the student for a career as an allied health professional, assisting physicians in ambulatory settings. The TOEFL or Accuplacer test is required for international applicants whose primary language is other than English. CPR certification and immunizations are required prior to the start of clinical internships. A minimum grade of "C" must be achieved for all required courses to graduate with a certificate or degree. Students should consult with the Medical Assisting Coordinator to ensure proper sequencing of courses and other educational options.

AAS degree: Medical Assisting

The Medical Assisting program prepares you for a career as a multi-skilled professional in the allied health field performing administrative and clinical procedures. This program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), and all students who successfully complete the program are eligible to sit for the national certification exam to become a Certified Medical Assistant. Please note that not all courses are offered in the summer session.

Required Courses	Credits
HPR 106 Law and Ethics for Health Prof	2
HPR 178 Medical Terminology	3
BIO 106 Basic Anatomy and Physiology	4
CIS 118 Introduction to PC Applications	3
COM 126 Communications in Healthcare	3
MOT 110 Medical Office Administration	4
MOT 120 Medical Office Financial Management	3
MOT 150 Pharmacology for Medical Assistants	3
PSY 101 General Psychology	3
MOT 130 Insurance Billing and Coding	3
MOT 136 Introduction to Clinical Skills	2
MOT 140 Medical Assisting Clinical Skills	4
MOT 138 Medical Assisting Laboratory Skills	4
MOT 181 Administrative Internship and	2
MOT 182 Clinical Internship or	3
MOT 183 Medical Assisting Internship	(5)
Additional General Education Courses See page 34	16
Total Required Credits	62

AAS Degree:

Medical Office

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. Please note that not all courses are offered in the summer session

Required Courses	Credits
HPR 106 Law and Ethics for Health Prof	2
HPR 178 Medical Terminology	3
BIO 106 Basic Anatomy and Physiology	4
CIS 118 Introduction to PC Applications	3
COM 126 Communication in Healthcare	3
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 Billing and Coding	3
MOT 181 Administrative Internship	2
Electives: See faculty advisor	8
Additional General Education Courses	16
See page 34	
Total Required Credits	60

Certificate:

Medical Assisting

The Medical Assisting program prepares you for a career as a multi-skilled professional in the allied health field performing administrative and clinical procedures. This program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), and all students who successfully complete the program are eligible to sit for the national certification exam to become a Certified Medical Assistant. Please note that not all courses are offered in the summer session.

Required Courses	Credits
HPR 106 Law and Ethics for Health Prof	2
HPR 178 Medical Terminology	3
BIO 106 Basic Anatomy and Physiology	4
CIS 118 Introduction to PC Applications	3
COM 126 Communications in Healthcare	3
MOT 110 Medical Office Administration	4
MOT 120 Medical Office Financial Management	3
MOT 150 Pharmacology for Medical Assistants	3
PSY 101 General Psychology	3

MOT 130 Insurance Billing and Coding	3
MOT 136 Introduction to Clinical Skills	2
MOT 140 Medical Assisting Clinical Skills	4
MOT 138 Medical Assisting Laboratory Skills	4
MOT 181 Administrative Internship	2
and	
MOT 182 Clinical Internship	3
or	
MOT 183 Medical Assisting Internship	(5)
Total Required Credits	46

Certificate:

Medical Office

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. Please note that not all courses are offered in the summer session.

Required Courses	Credits
HPR 106 Law and Ethics for Health Prof	2
HPR 178 Medical Terminology	3
BIO 106 Basic Anatomy and Physiology	4
CIS 118 Introduction to PC Applications	3
COM 126 Communication in Healthcare	3
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 Billing and Coding	3
MOT 181 Administrative Internship	2
Total Required Credits	36

Multimedia Graphic Design

Degree:

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 Graphic Design Program. 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 work force upon graduation.

AAS Degree

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 & animation, and other cutting edge technology.

Required Multimedia Courses

MGD 101	Intro. to Computers for Graphics	3
MGD 102	Intro. to Multimedia	3
MGD 103	Production Design	3
MGD 111	Adobe Photoshop I	3
MGD 112	Adobe Illustrator I	3
MGD 113	QuarkXPress	3
MGD 118	Digital Color Theory	3
MGD 121	Painter For Digital Media	3
MGD 153	3D Animation I: Cinema 4D	3
MGD 161	Director I	3
MGD 211	Adobe Photoshop II	3
MGD 213	Electronic PrePress	3
MGD 259	Management and Production	3
Faculty Advisor Approved Electives from MGD		6
Required General Education Courses		15
See page 34		
Total Required Credits		60

AAS Degree

Production and Design Technology

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

Required Multimedia Courses

		Credits
MGD 101	Intro. to Computers for Graphics	3
MGD 102	Intro. to Multimedia	3
MGD 103	Production Design	3
MGD 111	Adobe Photoshop I	3
MGD 112	Adobe Illustrator I	3
MGD 113	QuarkXPress	3
MGD 118	Digital Color Theory	3
MGD 121	Painter For Digital Media	3
MGD 161	Director I	3
MGD 163	Sound Design I	3
MGD 164	Digital Video Editing I: Final Cut Pro	3
MGD 165	After Effects I	3
MGD 259	Management and Production	3
Faculty Advisor Approved Electives from MGD		6
Required General Education Courses		15
See page 34		
Total Required Credits		60

AAS Degree 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 Multimedia Courses	Credits
MGD 111 Adobe Photoshop I	3
MGD 112 Adobe Illustrator I	3
MGD 122 Sculpting for Digital Media	3
MGD 152 Digital Animatics	3
MGD 153 3D Animation I: Cinema 4D	3
MGD 253 3D Animation II: Cinema 4D	3
MGD 164 Digital Video Editing I: Final Cut Pro	3
MGD 175 Special Topic: Maya I	3
MGD 275 Special Topic: Maya II	3
MGD 257 Animation Production	3
Faculty Advisor Approved Electives from MGD	6

Required Art Courses	Credits
ART 121 Drawing I	3
ART 132 3-D Design	3
ART 156 Figure Drawing I	3

Required General Education Courses See page 34	15
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.

AGS Degree 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 & animation, and other cutting edge technology.

Required Multimedia Courses	Credits
MGD 101 Intro. to Computers for Graphics	3
MGD 102 Intro. to Multimedia	3
MGD 103 Production Design	3
MGD 111 Adobe Photoshop I	3
MGD 112 Adobe Illustrator I	3
MGD 113 QuarkXPress	3
MGD 118 Digital Color Theory	3
MGD 259 Management and Production	3
Faculty Advisor Approved Electives from MGD	6
Required General Education Courses See page 29	34-40
Total Required Credits	60

AGS Degree 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 & educational training, interactive games and interactive CD-ROM production. Students are exposed to many other exciting aspects of multimedia production such as sound & digital editing, web page and site design & production and motion graphics.

Required Multimedia Courses	Credits
MGD 101 Intro. to Computers for Graphics	3
MGD 103 Production Design	3
MGD 111 Adobe Photoshop I	3
MGD 112 Adobe Illustrator I	3
MGD 113 QuarkXPress	3
MGD 118 Digital Color Theory	3
MGD 161 Director I	3
MGD 259 Management and Production	3
Faculty Advisor Approved Electives from MGD	3
Required General Education Courses See page 29	34-40
Total Required Credits	60

AGS Degree 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 Multimedia Courses	Credits
MGD 111 Adobe Photoshop I	3
MGD 112 Adobe Illustrator I	3
MGD 153 3D Animation I: Cinema 4D	3
MGD 253 3D Animation II: Cinema 4D	3
MGD 165 After Effects I	3
MGD 175 Special Topic: Maya I	3

Required Art Courses	Credits
ART 121 Drawing I	3
ART 132 3-D Design	3
ART 156 Figure Drawing	3

Required General Education Courses See page 29	34-40
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 Multimedia Courses	Credits
MGD 101 Intro. to Computers for Graphics	3
MGD 103 Production Design	3
MGD 111 Adobe Photoshop I	3
MGD 112 Adobe Illustrator I	3
MGD 113 QuarkXPress	3
MGD 118 Digital Color Theory	3
MGD 153 3D Animation I: Cinema 4D	3
MGD 211 Adobe Photoshop II	3
MGD 213 Electronic PrePress	3
Faculty Advisor Approved Electives from MGD	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, some we probably haven't even thought of yet. The most common projects are: video production, 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 Multimedia Courses	Credits
MGD 101 Intro. to Computer for Graphics	3
MGD 102 Intro. to Multimedia	3
MGD 111 Adobe Photoshop I	3
MGD 112 Adobe Illustrator I	3
MGD 161 Director I	3
MGD 163 Sound Design I	3
MGD 164 Digital Video Editing I: Final Cut Pro	3
MGD 165 After Effects I	3
MGD 259 Management and Production	3
Faculty Advisor Approved Electives from MGD	3
Total Required Credits	30

Certificate: Motion Graphics Animation

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

Required Multimedia Courses	Credits
MGD 111 Adobe Photoshop I	3
MGD 112 Adobe Illustrator I	3
MGD 153 3D Animation I: Cinema 4D	3
MGD 175 Maya I	3
MGD 165 After Effects I	3
MGD 253 3D Animation II: Cinema 4D	3
MGD 275 Maya II	3
Required Art Courses	Credits
ART 121 Drawing I	3
ART 132 3-D Design	3
ART 156 Figure Drawing	3
Total Required Credits	30

Certificate: Web Page Design

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
MGD 111	Adobe Photoshop I	3
MGD 112	Adobe Illustrator I	3
MGD 141	Web Design I: Dreamweaver	3
MGD 143	Web Motion Graphic Design I: Flash	3
MGD 241	Web Design II: Dreamweaver	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 data base skills will be developed.

Required Multimedia Courses		Credits
MGD 153	3D Animation I: Cinema 4D	3
MGD 163	Sound Design I	3
MGD 164	Digital Video Editing I: Final Cut Pro	3
MGD 243	Web Motion Graphic Design II: Flash	3
MGD 258	Web Design Production	3
Total Required Credits		15

The Multimedia Technology Design Department uses state-of-the-art equipment for teaching. MGD 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 and G5s. Peripheral devices are also available including: color output, B&W output, flat bed scanners, slide scanner, 3D digital scanner

Painting

For Construction: See Construction Technology
For Artistic: See Art

Park Ranger Technology

Certificates:

- Law Enforcement**
- Public Safety**
- Outdoor Recreation**
- Resource Interpretation**
- Concentration**

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

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.

Required Courses		Credits
CRJ XXX	Post Law Enforcement Academy	30
PRA 102	Introduction to Park Ranger Technology	3
PRA 280	Park Ranger Internship	3
Total Required Credits		36

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
PRA 102	Introduction to Park Ranger Technology	3
PRA 280	Park Ranger Internship	3
EMS 125	Emergency Medical Technician – Basic	9
EMS 170	Emergency Medical Technician – Basic Clinical	1
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

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 governmental and private agencies.

Required Courses		Credits
PRA 102	Introduction to Park Ranger Technology	3
PRA 205	Resource Interpretation	3
PRA 218	Outdoor Recreation Leadership	3
PRA 280	Park Ranger Internship	3
Total Required Credits		12
Elective Courses		18
Choose from the following courses:		
PED 124	Mountain Biking	1
PED 129	Scuba Diving	1
PED 131	Nordic Skiing	2
PED 132	Snowshoeing	1
PED 150	Rock Climbing I	2
PED 151	Rock Climbing II	2
PER 152	Avalanche Safety Level I	1
PED 153	Hiking	1
PED 154	Backpacking	3
PED 155	Outdoor Expedition	3
PED 156	Snow and Glacier Climbing	3
PED 157	Basic Mountaineering	3
PER 128	Intro to Recreation	2
PER 160	Wilderness Ethics	3
PER 161	Backcountry Cooking	1
PED 163	Orienteering/Route-finding	3

PED 162	Map and Compass for the Outdoors	3
PED 165	Wilderness Survival Skills	2
PED 166	Winter Survival Skills	3
PER 168	Outdoor Equipment and Facilities	1
PED 207	Intermediate Whitewater Canoeing	1
PED 237	Paddle Sports	2
PER 240	Whitewater Rafting Guide	2
HPR 125	Outdoor Emergency Care	4
HWE 129	Wilderness First Responder	4
PER 113	Introduction to Physical Education and Sport	2
PER 128	Introduction to Recreation	2
Total Required Credits		30

Certificate

Resource Interpretation

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

Required Courses		Credits
PRA 102	Introduction to Park Ranger Technology	3
PRA 203	Natural Resource Management	3
PRA 205	Resource Interpretation	3
PRA 218	Outdoor Recreation Leadership	3
PRA 280	Park Ranger Internship	3
Total Required Credits		15

Philosophy

Degree: Associate of Arts

If you plan to transfer to a four-year college or university to complete a major in Philosophy, you must complete the following courses. Consult with a faculty or academic advisor before beginning this program of study. These courses provide the basic preparation leading to Philosophy BA's but you should tailor your specific courses to the requirements at the institution you plan to transfer to.

Required Courses		Credits
PHI 111	Introduction to Philosophy*	3
PHI 112	Ethics*	3
PHI 113	Logic	3
PHI 114	Comparative Religion	3

*Fulfills General Education Requirement

Additional General Education Courses	32
See page 25	
Approved Electives	16
See page 26	
Total Required Credits	60

Photography

Degree:
Associate of Applied Science
(Pending Approval)

Certificates:
(Pending Approval)
Photography (Traditional Film)
Photography (Digital)
Professional Photographer

Certificate:
Photography (Traditional Film)
(Pending Approval)

Required Courses	Credits
PHO 101 Photography I	3
PHO 102 Photography II	3
PHO 145 Color Photography I	3
(1) PHO elective	3
Total Required Credits	12

Certificate:
Photography (Digital)
(Pending Approval)

Required Courses	Credits
PHO 205 Digital Photography I	3
PHO 206 Digital Photography II	3
PHO 145 Color Photography I	3
(1) PHO elective	
Total Required Credits	12

Certificate:
Professional Photographer
(Pending Approval)

Required Courses	Credits
PHO 271 Wedding Photography	3
PHO 235 Commercial & Architectural Photography	3
PHO 232 Portrait Photography	3
(1) PHO elective	3
Total Required Credits	12

Physical Education/ Outdoor Education

Degree: Associate of Arts

Certificates:
Outdoor Recreation Leadership
Emphases:
Winter Skills Specialist
Water-based Skills Specialist
Mountaineering Skills Specialist
Outdoor Recreation Generalist

AA Degree:
The completion of the following recommended course of study is appropriate if you intend to transfer to a 4-year college in order to complete a bachelor's degree in Outdoor Recreation or Physical Education with an emphasis in Outdoor Education. The Degree is also a stand-alone program to allow you to enter a career as an outdoor educator, wilderness guide, and many other outdoor/recreation careers.

Recommended Courses	Credits
PED 150 Rock Climbing I	2
PED 151 Rock Climbing II	2
PED 162 Map and Compass	3
PED 165 Wilderness Survival Skills	3
PED 166 Winter Wilderness Survival Skills	2
PED 237 Paddle Sports	2
PER 253 Outdoor Leadership	2
Recommended Course Credits	16

Required General Education Courses See page 25	38
Approved Electives see page 26	6
Total Required Credits	60

Please consult with a faculty and academic advisor before beginning any program of study. Call 303-914-6238 or email bill.haas@rrcc.edu

Certificate:

Outdoor Recreation Leadership

Students completing the Outdoor Recreation Leadership Certificate Program will have a well-rounded outdoor education experience and a high degree of training specific to employment within the outdoor industry. Types of organizations that may be interested in employing graduates include alpine/cross country ski areas, flyfishing guide services, summer adventure camps, community nature centers and outdoor programs, whitewater river outfitters, outdoor equipment purveyors, and companies employing wilderness guides. In addition to field-based experiential learning of basic technical (hard) skills, students will prepare to be future outdoor trip leaders by examining and developing the interpersonal (soft) skills needed for positions in outdoor leadership.

In order to complete the Outdoor Recreation Leadership Certificate, students must complete the following required courses and at least one area of emphasis.

Required courses	Credits
PER 160 Wilderness Ethics	3
PED 162 Map and Compass (GPS)	3
PED 165 Wilderness Survival Skill	3
PER 253 Outdoor Leadership	2
HPR 125 Outdoor Emergency Care and CPR, or	4
HWE 129 Wilderness First Responder	4
Total credits for required courses	15

Emphasis: Winter Skills Specialist (select 12 credits from these courses)

PED 157 Basic Mountaineering	3
PER 152 Avalanche Safety Level I	1
PED 166 Winter Wilderness Survival Skills	2
PER 168 Outdoor Equipment and Facilities	2
PED 132 Snowshoeing	1
PED 131 Nordic Skiing	2
PED 138 Introduction to Winter Sports	1
PED 156 Snow and Glacier Climbing	3
PED 280 Internship	3
Total Credits (includes required courses)	27

Emphasis: Water-based Skills Specialist (select 10 credits from these courses)

PED 127 Flyfishing	1
PER 150 Water Safety Instructor	3
PED 128 Basic Sailing	1

PED 129 Scuba Diving	1
PER 151 Lifeguard Training	2
PER 153 Whitewater Rafting/Guide	2
PED 207 Intermediate Whitewater Canoeing	1
PED 237 Paddle Sports	2
PED 280 Internship	3
Total Credits	25

Emphasis: Mountaineering Skills Specialist (select 14 credits from these courses)

PED 150 Rock Climbing	2
PED 151 Rock Climbing II	2
PED 154 Backpacking	2
PED 155 Outdoor Expedition	3
PED 156 Snow and Glacier Climbing	3
PED 157 Basic Mountaineering	3
PED 159 Colorado's Fourteeners	2
PED 166 Winter Wilderness Survival Skills	2
PER 256 Mountaineering Teaching Concepts	3
PED 280 Internship	3
Total Credits	29

Emphasis: Outdoor Recreation Generalist	
Students can design their own course of study by choosing at least four credits from each of the three programs of emphasis above, in addition to the required courses. Students completing this program emphasis can expect a well-rounded outdoor recreation experience and training in various aspects of outdoor recreation and leadership competencies.	
Total Credits	27

Physician Assistant

Certificate:

Physician Assistant Master's Degree Option

Physician assistants (PAs) are healthcare providers who are authorized to practice medicine with 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 rigorous, year-round, full-time, 24-month curriculum leads 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 of off-campus clinical rotations some of which may be scheduled at sites outside of the Denver-Aurora metropolitan area. 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 to the Program found at the Program's website at www.rccc.edu/pa. A supplemental application is also required which is also outlined at the website. A personal interview is required prior to matriculation. The annual application deadline is December 19th for admission the following August of each year. At the time of application, candidates must have completed a minimum of 90 credits at a regionally accredited institution of higher education with a minimum grade point average of 3.0 in the last 45 credits undertaken. At the time of application, the following courses must have been completed with a grade of "C" or better:

Minimum Prerequisite 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

International transcripts must be evaluated by an agency acceptable to Red Rocks Community College. 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 is available online at www.rccc.edu/pa, or by calling 303.914.6386.

If an individual is selected for the Program, each person will be required to prove competency in medical terminology or to take a medical terminology course in the summer before the program begins. 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, and exercise physiologist. One class of 28 students is admitted in August of each year. Advanced placement and credit for prior learning are not available. Tuition is approximately \$273.55/credit for Colorado residents and \$397.35/credit for nonresidents. Student fees average \$300 per semester for all students. Tuition and fees are subject to change.

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

Required First Year Courses:

PAP 200 Biochemistry and Cell Biology	3
PAP 203 Role of the PA and 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 History and Physical Examination I	2
PAP 220 History and Physical Examination II	2
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	2
PAP 230 Pharmacology I	1
PAP 231 Pharmacology II	3
PAP 235 Human Pathology	4
PAP 240 Behavioral Science in Primary Care	3
Total first Year Credits	42

Required Second Year Courses:

PAP 261 - 269	(36 credits)
Clinical rotations in family medicine, internal medicine, pediatrics, emergency medicine, surgery, women's health, orthopedics, geriatrics, and psychiatry.	

Total Certificate Credits

78

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 physics faculty advisor before beginning any program of study. These courses provide the basic preparation leading to Chemistry related careers. Some courses might not be offered each semester.

Required Courses	Credits
CSC 160 Computer Science I	5
MAT 201 Calculus I *	5
MAT 202 Calculus II	5
MAT 204 Calculus III with special topics	5
PHY 211 Physics: Calculus-based I *	5
PHY 212 Physics: Calculus-based II *	5
*Fulfills General Education requirement	
Additional General Education Courses See page 27	27
Approved electives See page 28	3
Total Required Credits	60

Plumbing

This program gives 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, 303.914.6511.

Degree: Associate of Applied Science Plumbing Plumber/Pipefitter

- Certificates:**
- Colorado Plumbing Code Test Preparation**
 - Residential Plumbing**
 - Residential Plumbing and Heating Journey-Level Plumbing**
 - Basic Plumbing/Heating Maintenance (see Construction Technology)**
 - International Plumbing and Mechanical Codes (see Construction Technology)**

AAS Degree: Plumbing

Required Major Courses	Credits
PLU 100 Introduction to Plumbing	4
PLU 111 Piping Skills	4
PLU 104 Plumbing Service	4
PLU 120 Residential Plumbing	4
PLU 130 Basic Waste and Vent	4
PLU 150 Code and Piping Calculations	2
PLU 202 International Residential Code Plumbing	2
PLU 207 International Plumbing Code	4
PLU 208 International Fuel Gas Code	4
PLU 240 Commercial Plumbing Systems	4
Total Required Major Courses	25
General Education Requirements See Page 63	15
Construction Technology Requirements See Page 63	10
Total Required Credits	61

AAS Degree

Plumber/Pipefitter

Construction Technology in Partnership with United Association of Plumbing and Pipefitting Emphasis.

Through this program, UA members can earn an Associate of Applied Science degree after completing their UA apprenticeship.

Credits from Articulated Apprenticeship Program	43
General Education Requirements See Page 63	15
Computer Skills	2
Total Required Credits	60

Certificate

Colorado Plumbing Code Test Preparation

Required Major Courses	Credits
PLU 150 Code and Piping Calculations	2
PLU 202 International Residential Code Plumbing	2
PLU 207 International Plumbing Code	4
PLU 208 International Fuel Gas Code	4
Total Required Credits	12

Certificate

Residential Plumbing

Required Major Courses	Credits
CON 230 Blueprint Reading	4
PLU 100 Introduction to Plumbing	4
PLU 111 Piping Skills	4
PLU 104 Plumbing Service	4
PLU 120 Residential Plumbing	4
PLU 130 Basic Waste and Vent	4
PLU 150 Code and Piping Calculations	2
PLU 202 International Residential Code Plumbing	2
HVA 200 International Residential Code Mechanical and Fuel Gas	2
Total Required Credits	30

Certificate:

Residential Plumbing and Heating

Required Major Courses	Credits
CON 230 Blueprint Reading	4
PLU 100 Introduction to Plumbing	4
PLU 111 Piping Skills	4
PLU 104 Plumbing Service	4
PLU 120 Residential Plumbing	4
PLU 130 Basic Waste and Vent	4
PLU 150 Code and Piping Calculations	2
PLU 207 International Plumbing Code	4
PLU 247 Hot Water Heating Systems	4
HVA 105 Electricity for HVAC/R	4
HVA 110 Fundamentals of Gas Heating	4
HVA 140 Basic Sheet Metal	4
HVA 162 Heating Controls	4
HVA 206 International Mechanical Code	4
PLU 208 International Fuel Gas Code	4
HVA 240 Servicing Forced Air Systems	4
Total Required Credits	62

Certificate:

Journey-Level Plumbing

Required Major Courses	Credits
CON 251 Construction Process	4
PLU XXX Plumbing Elective	2
PLU 240 Commercial Plumbing Systems	4
PLU 244 Commercial Plumbing Service	4
PLU 247 Hot Water Heating Systems	4
PLU 250 Estimating Plumbing Costs	4
Residential Certificate Credits	30
Journey Level Course Credits	22
Total Required Credits	52

Political Science

Degree: Associate of Arts

If you plan to transfer to a four year college or university to complete a major in political science, you should complete the following courses. Consult with a faculty or academic advisor before beginning this program of study. These courses provide the basic preparation leading to political science related careers.

Recommended Courses	Credits
POS 105 Introduction to Political Science*	3
POS 111 American Government	3
POS 205 International Relations	3
ECO 201 Principles of Macroeconomics	3
HIS 201 U.S. History I*	3
HIS 202 U.S. History II	3
*Fulfills General Education requirement	
General Education Courses See page 25	32
Approved Electives See page 26	10
Total Required Credits	60

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.

Recommended courses	Credits
ANT 101 Cultural Anthropology	3
BIO 201 Human Anatomy and Physiology I	4
BIO 202 Human Anatomy and Physiology II	4
BIO 204 Microbiology	4
CHE 101 Introduction to Chemistry I	5
ENG 121 English Composition I	3
ENG 122 English Composition II	3
MAT 135 Introduction to Statistics	3
NUA 101 Nurse Aide Theory/Lab	4
NUA 170 Nurse Aide Clinical	1
HWE 100 Human Nutrition	3
PSY 101 General Psychology I	3
PSY 235 Human Growth and Development	3
SOC 101 Introduction to Sociology I	3

Note: Completion of course work at Red Rocks does not guarantee acceptance into a nursing program.

Process Technology

Degree: Associate of Applied Science

Process Technology*

***Program is currently being developed and is expected to begin fall 2005 pending approval.**

The Process Technology Program is designed to prepare students for entry level employment as process technicians. A process technician is a key member of a team of people responsible for planning, analyzing, and controlling the production of products from the acquisition of raw materials through the production and distribution of products to customers in a variety of process industries. These industries include, but are not limited to, chemical, food and beverage, oil exploration and production, pharmaceuticals, power generation, pulp and paper, refining and wastewater treatment.

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.

Required 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

*Fulfills General Education requirement.

Additional General Education Courses	29
See page 25	
Approved Electives	22
See page 26	
Total Required Credits	60

Radiologic Technology

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 such 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 be enrolled in the related course of RTE 101 to apply directly to the radiography program. Applications for the program will be distributed to all interested students during RTE 101.

Information: **303.914.6622**

Students must earn a "C" or better in all RTE courses to graduate. Students will be required to perform a background check prior to program admission.

Related Courses:	Credits
RTE 101 Introduction to Radiology	2

Required Major Courses	Credits
RTE 111 Patient Care	2
RTE 121 Radiologic Procedures I	3
RTE 131 Radiographic Pathology & Image Evaluation I	1.5
RTE 141 Radiographic Equipment and Imaging I	3
RTE 181 Clinical Internship I	5
RTE 122 Radiologic Procedures II	3
RTE 132 Radiographic Pathology & Image Evaluation II	1.5
RTE 142 Radiographic Equipment and Imaging II	3
RTE 182 Clinical Internship II	5
RTE 183 Clinical Internship III	7
RTE 221 Advanced Medical Imaging	3
RTE 231 Radiation Biology / Protection	2
RTE 281 Clinical Internship IV	8
RTE 282 Clinical Internship V	8
RTE 289 Registry Review (Capstone)	3

General Education Requirements	Credits
MAT 106 Survey of Algebra (min. req.)	4
or	
MAT 121 College Algebra *	4
PSY 101 General Psychology	3
or	
SOC 101 Introduction to Sociology	3
BIO 106 Basic Anatomy and Physiology (min. req.)	4
or	
BIO 201 Human Anatomy and Physiology I (with lab)*	4
and	
BIO 202 Human Anatomy and Physiology II (with lab)*	4
ENG 121 English Composition I	3
CIS 118 Introduction to PC Applications	3

*preferred courses

Total Required Credits	75
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Real Estate and Small Business Start-Up

(See Business)

Sociology

Degree: Associate of Arts

The field of 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 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.

Required Courses	Credits
SOC 101 Introduction to Sociology I *	3
SOC 102 Introduction to Sociology II *	3

Choose from one of the following advanced classes

SOC 215 Contemporary Social Problems	3
SOC 237 Sociology of Death and Dying	3

*Fulfills General Education requirements.

Additional General Education Courses 29
See page 25

Approved Electives 22
See page 26

Total Required Credits 60

Speech and Communication

(See Communication and Speech)

Teacher Education

Degrees: Associate of Arts
Elementary Education

Associate of Applied Science
Paraeducators

Certificates:
Paraeducator

AA Degree:
Elementary Education

The AA degree reflects the teacher education transfer agreement with the public four-year colleges and universities in Colorado who offer a teacher education program. If you plan to transfer to a four-year college or university to complete a major in Elementary Teacher Education, you should complete the 46 credits outlined below with a "C" or better. The remaining 15 credits for the AA are specific to individual transfer schools. Contact a faculty advisor before beginning this program of study.

Students not pursuing an Elementary Education four-year degree, may complete an Associate of Arts degree by meeting the General Education requirements listed on page 25.

General Education Courses	Credits
ENG 121 English Composition I (B or better)	3
ENG 122 English Composition II (B or better)	3
LIT 115, LIT 201 or LIT 202	3
MAT 155 Integrated Math 1	3
MAT 156 Integrated Math II	3
GEO 105 World Regional Geography	3
HIS 201 or HIS 202 American History	3
POS 111 American Government	3
SCI 155 Integrated Science I	4
SCI 156 Integrated Science II	4

plus one of the following:

BIO 105, CHE 101, PHY 105, or GEY 111	4-5
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Statewide Education Requirements:

SPE 115 Public Speaking	3
PSY 238 Child Development	3
EDU 221 Introduction to Teacher Education	3
EDU 275* Special Topic: Field-Based Experience	1

*Red Rocks requirement

Total General and Statewide Education Credits	46
Transfer Institution Approved Credits	15
Total Required Credits	61

AAS Degree

Paraeducator

The No Child Left Behind Act strengthens paraeducator requirements to include two years of postsecondary education or, for an applicant with a high school diploma, the demonstration of necessary skills on an academic assessment. RRCC has developed a Paraeducator Certificate and an educational track to assist paraprofessionals in meeting these new requirements.

This program prepares students to work as a paraeducator in the K-12 classroom.

Required Major Courses:	Credits
EDU 110 Overview of Special Populations	3
EDU 151 Literacy Interventions for Paras	4
EDU 152 Math Interventions for Paras	3
EDU 153 ESL and Cultural Issues	3
EDU 261 Teaching, Learning and Technology	3
EDU 221 Introduction to Teacher Education	3
EDU 275 Field-Based Experience	1
PSY 238 Child Development	3
SPE 115 Public Speaking	3

General Education Core Requirements 15

It is highly recommended that the General Education Core requirements and electives are selected from the General Education Courses in the AA in Elementary Education. See page 102

Recommended Electives

LIT 255 Children's Literature	3
EDU 242 Expressive Arts in the Elementary Classroom	3
EDU 240 Teaching the Exceptional Learner	3
MAT 155 Integrated Math I and	3
MAT 156 Integrated Math II	3
SCI 155 Integrated Science I and	4
SCI 156 Integrated Science II	4
Total Required Credits	60

Certificate

Paraeducator

Required Education Courses: 10 credits

EDU 151 Literacy Interventions for Paraeducators	4
EDU 152 Math Interventions for Paraeducators	3
EDU 261 Teaching, Learning and Technology	3

Recommended EDU or ECE credits* 11 credits

*Upon approval, other classes may be accepted

EDU 110 Overview of Special Populations	3
EDU 153 ESL and Cultural Issues	3
EDU 221 Introduction to Education	3
EDU 275 Special Topic: Field Based Experience	1
PSY 238 Child Psychology	3
EDU 242 Expressive Arts in the Elementary Classroom	3
EDU 240 Teaching the Exceptional Learner	3

Total Required Credits 21

Theatre Arts

Degree: Associate of Arts

Emphasis in Theatre Arts

Emphasis in Musical Theatre

AA Degree:

Emphasis in Theatre Arts

The completion of the following courses is appropriate for those who plan to transfer to a four-year college or university to complete a major in theatre arts. This program provides basic preparation leading to theatre-related careers, as well as to the teaching of theatre. You are urged to consult with a faculty advisor before beginning any program of study.

Recommended Courses	Credits
THE 105 Introduction to Theatre Arts	3
THE 111 Acting I	3
THE 116 Technical Theatre	3
THE 135 Stage Makeup I	2
THE 136 Stage Makeup II	2
THE 211* Development of Theatre I	3
THE 212* Development of Theatre II	3

*General Education Course

Choose one course from the following for a total of 3 credits:

DAN 154 Dance and Stage Movement	3
DAN 224 Dance for the Musical Theatre	3

THE 210 Singing for Actors	3
THE 215 Playwriting	3
or any THE course not listed above	

Additional General Education requirements See page 25	35
Approved Electives See page 26	4
Total Required Credits	60

Degree: Associate of Arts Emphasis in Musical Theatre

The following courses prepare you for musical stage performance and are appropriate if you plan to transfer to a four-year college or university to complete a major in musical theatre performance. You are urged to consult with a faculty advisor before beginning any program of study.

Recommended Courses

THE 105 Introduction to Theatre Arts	3
THE 111 Acting I	3
THE 125 Individual Singing Lessons for Musical Theatre (0.5 credit each. Repeat for a total of 1 credit)	1
THE 275 Special Topics: Voice Practicum	1
THE 126 Auditioning for Musical Theatre	1
or	
THE 145 Audition	1
THE 135 Stage Makeup I	2
THE 136 Stage Makeup II	2
DAN 154 Dance and Stage Movement	3
THE 210 Singing for Actors	3
or	
THE 240 Voice and Diction	3
DAN 224 Dance for Musical Theatre	3
or	
Any THE course not listed here	

Additional General Education requirements See page 25	35
Approved Electives See page 26	3
Total Required Credits	60

Theatre Technology

Degree:
Associate of Applied Science
Theater Technology

Certificates:
Stagehand Basics (pending approval)
Stagecraft
Costume Basics (pending approval)
Costume and Fashion (pending approval)

AAS Degree:

Theater Technology

This program, a two-year course of study, will prepare you 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 if you want to pursue advanced degrees at four-year institutions in theatre design and technology. You should consult with the Chair of Theatre Arts and Dance early in your college career to explore all of your educational options. You must earn a C or better in all theatre courses to graduate.

Required Courses	Credits
THE 104 Basic Costume Construction	3
THE 105 Introduction to Theatre Arts	3
THE 116 Technical Theatre	3
THE 120 Drafting for the Performing Arts	3
or	
THE 109 Basics of Pattern Drafting	3
THE 131, 132, 231, 232 - Theatre Production classes: choose one	3
THE 135 Stage Makeup I	2
THE 136 Stage Makeup II	2
THE 151 Stagecraft I	3
THE 152 Production Stage Management I	3
THE 216 Theatre Lighting and Design	3
or	
THE 245 Basic Costume Design and Construction	3
THE 211 Development of Theatre I	3
THE 212 Development of Theatre II	3
THE 221 Set Design	3
or	
THE 237 History of Costumes and Fashion	3
THE 241 Stage Properties	3

THE 225 Sound Operation and Design	2
THE 260 Resume and Portfolio Development	1
THE 280 Theatre Technology Internship (Field Education)	1-2

General Education Requirements: 15
See page 34

Total Required Credits 60

Certificate

Stagehand Basics (one semester)

(Pending approval)

This course of study is designed to train you for entry-level positions as back-stage technicians, running crews, shop assistants and set-building. Related professions are carpentry, cabinet-making, and careers requiring construction skills. You should consult with the Chair of Theatre Arts and Dance early in your college career to explore all of your educational options. You must earn a C or better in all theatre courses to graduate.

Required Major Courses	Credits
THE 105 Introduction to Theatre Arts	3
THE 104 Basic Costume and Apparel Construction	3
THE 116 Technical Theatre	3
THE 135 Stage Makeup I	2
THE 211 Development of Theatre	3

Total Credits required 14

Certificate

Stagecraft

This course of study is designed to train you for entry-level positions as back-stage technicians, running crews, shop assistants, crew leaders, properties assistants, and set-building. Related professions are carpentry, cabinet-making, and careers requiring construction skills. You should consult with the Chair of Theatre Arts and Dance early in your college career to explore all of your educational options. You must earn a C or better in all theatre courses to graduate.

Required Major Courses	Credits
THE 105 Introduction to Theatre Arts	3
THE 104 Basic Costume and Apparel Construction	3
THE 116 Technical Theatre	3
THE 135 Stage Makeup I	2
THE 211 Development of Theatre I	3
THE 120 Drafting for the Performing Arts	3
THE 136 Stage Makeup II	2
THE 151 Stagecraft I	3
THE 212 Development of Theatre II	3
THE 225 Sound Operation and Design Basics	2
THE 241 Stage Properties	3

Total Required Credits 30

108

Certificate

Costume Basics (one semester)

(Pending approval)

The "Certificate in Costume Basics" is appropriate for those who want to prepare for a career in costume and fashion design. Upon completion of the courses, you will be prepared for entry-level employment in costume and fashion careers as stitchers, wardrobe assistants, and costume shop assistants. You should consult with the Chair of Theatre Arts and Dance early in your college career to explore all of your educational options. You must earn a C or better in all theatre courses to graduate.

Required Major Courses	Credits
THE 105 Introduction to Theatre Arts	3
THE 104 Basic Costume and Apparel Construction	3
THE 109 Basics of Pattern Drafting	3
THE 135 Stage Makeup I	2
THE 211 Development of Theatre	3

Total Required Credits 14

Certificate

Costume and Fashion

(Pending approval)

The "Certificate in Costume and Fashion" is appropriate for those who want to prepare for a career in costume and fashion design. Upon completion of the courses, you will be prepared for entry-level employment in costume and fashion careers as stitchers, wardrobe assistants, costume shop assistants, working in alterations and tailoring, makeup artists, window dressers, and other fashion and entertainment-related employment opportunities. This certificate also prepares you for pursuing an advanced degree in costume design and the fashion industry. You should consult with the Chair of Theatre Arts and Dance early in your college career to explore all of your educational options. You must earn a C or better in all theatre courses to graduate. This certificate is intended for a one year course of study, divided in two semesters.

Required Major Courses	Credits
THE 105 Introduction to Theatre Arts	3
THE 104 Basic Costume and Apparel Construction	3
THE 109 Basics of Pattern Drafting	3
THE 131, THE 132, THE 231, THE 232 -(Choose one.)	3
THE 135 Stage Makeup I	2
THE 136 Stage Makeup II	2
THE 211 Development of Theatre I	3
THE 212 Development of Theatre II	3
THE 245 Basic Costume Design and Construction	3
THE 270 Resume and Portfolio Development	1
THE 280 Internship (Field Education)	1 - 3

Total Required Credits 27-30

Water Quality Management Technology

Degree: Associate of Applied Science

Water Quality Management

Certificates:

- Water Treatment
- Wastewater Treatment
- Laboratory Analysis
- Mathematics in Water Quality Education and Experience
- Distribution and Collection Systems

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.

AAS Degree:
Water Quality Management

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
General Education Requirements	
English/Speech (ENG 121, SPE 115, SPE 125)	3
Mathematics (106 or above)	3

Courses from 2 of these areas: 6
Humanities (ART, FRE, GER, HUM, LIT, MUS, PHI, SPA, THE), Science (AST, BIO, CHE, GEY, PHI), Behavioral science (ANT, ECO, GEO, HIS, POS, PSY, SOC)

Other Required Courses

CIS 118 Introduction to PC Applications 3

WQM Elective Courses (or other courses as approved) 12

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 Processes	3
WQM 118 Wastewater Collection Systems	3
WQM 121 Environmental Sampling and Volume Measurement	3
WQM 122 Instrumentation and Electrical Control	3
WQM 124 Water Certification Review for Class C and D	3
WQM 125 Water-Wastewater Certification Review for Class C and D	3
WQM 150 Troubleshooting	3
WQM 207 Operations and Control of Activated Sludge Systems	4
WQM 208 Advanced Wastewater Treatment	3
WQM 212 Drinking Water Regulations	4
WQM 230 Industrial Monitoring and Treatment	3
WQM 280 Internship	3
WQM 285 Independent Study	1-6

Total Required Credits 61

Water Quality Certificates:

Students completing this program possess the skills and knowledge for entry level positions within the industry in specific area of interest.

Certificate: Water Treatment

Required Courses	Credits
WQM 100 Introduction to Water Quality Management	3
WQM 115 Water Sources and Supply	3
Total Required Credit	6

degrees & certificates

Certificate: Wastewater Treatment

Required Courses	Credits
WQM 100 Introduction to Water Quality Management	3
WQM 106 Mechanical / Physical Treatment	3
Total Required Credit	6

Certificate: Laboratory Analysis

Required Courses	Credits
WQM 119 Basic Water Analysis	4
WQM 216 Bacteriological / Biological Water Analysis	4
Total Required Credit	8

Certificate: Mathematics in Water Quality

Required Courses	Credits
WQM 105 Specific Calculations	4
WQM 200 Hydraulics	4
Total Required Credit	8

Certificate: Education and Experience

Required Courses	Credits
WQM 126 Safety in Water Quality Management	3
WQM 280 Internship	3-6
Total Required Credit	6-9

Certificate: Distribution and Collection Systems

Required Courses	Credits
WQM 109 Water Distribution	3
WQM 118 Wastewater Collection Systems	3
Total Required Credit	6

Woodworking

(See Fine Woodworking)



Course Descriptions

Here you'll find descriptions of the courses offered in each of our programs.

These course descriptions and course numbers are used by all Colorado community colleges, to make it easier for students to select courses and transfer between state colleges.

AAA - Academic Achievement

AAA 090 Academic Achievement Strategies

3 credit

AAA 090 develops personalized approaches to learn and succeed for easier 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 093 Skills in Test-Taking

1 credit

AAA 093 helps students improve test-taking skills and helps reduce the nervous tension experienced before or during a test. Students develop skills to use when taking multiple choice, true-false, essay, and other types of tests. Specialized test review is offered for the ACT, SAT, GRE, PLACE, and Health Occupations Aptitude Exam.

ACC - Accounting

www.rccc.edu/business

ACC 101 Fundamentals of Accounting

3 credits

ACC 101 presents the basic elements and concepts of accounting, with emphasis on the procedures used for maintaining journals, ledgers, and other related records, and for the completion of end-of-period reports for small service and merchandising businesses.

ACC 121 Accounting Principles I

4 credits

Prerequisites: College-level reading, study skills and general mathematics. ACC 121 introduces the study of accounting principles for understanding of the theory and logic that underlie procedures and practices. Major topics include the accounting cycle for service and merchandising companies, special journals and subsidiary ledgers, internal control principles and practices, notes and interest, inventory systems and costing, plant assets and intangible asset accounting, and depreciation methods and practices.

ACC 122 Accounting Principles II

4 credits

Prerequisite: ACC 121 Accounting Principles I or equivalent

ACC 122 continues the study of accounting principles as they apply to partnerships and corporations. Major topics include stocks and bonds, investments, cash flow statements, financial analysis, budgeting, and cost and managerial accounting.

ACC 131 Income Tax

3 credits

Prerequisite: ACC 121 strongly recommended

ACC 131 presents 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 Spreadsheet Applications for Accounting

3 credits

Prerequisite: ACC 121

ACC 135 introduces spreadsheets as an accounting tool. Using an accounting perspective, you apply fundamental spreadsheet concepts. The spreadsheets are used as a problem solving and decision making tool.

ACC 138 Payroll and Sales Tax

3 credits

Co-requisite: ACC 101, ACC 121 or equivalent knowledge

ACC 138 acquaints students with laws pertaining to payroll and sales taxes including record keeping rules. Students prepare various federal, state and local forms for reporting payroll taxes and sales taxes. A computerized payroll simulation is included in the course.

ACC 211 Intermediate Accounting I

4 credits

Prerequisite: ACC 122

ACC 211 focuses on comprehensive analysis of generally accepted accounting principles (GAAP), accounting theory, concepts and financial reporting principles for public corporations. It is the first of a two-course sequence in financial accounting and is designed primarily for accounting and finance majors. It focuses on the preparation and analysis of business information relevant and useful to external users of financial reports; explores the theories, principles and practices surveyed in Accounting Principles and critically examines 'real-world' financial analysis and reporting issues.

ACC 212 Intermediate Accounting II

4 credits

Prerequisite: ACC 211

ACC 212 focuses on the theoretical and practical aspects of accounting for long-term liabilities, stockholders equity, investments, pensions and leases. It includes income tax allocation, financial statement analysis, cash flow statements and accounting methods changes.

ACC 216 Governmental and Not-for-Profit Accounting

3 credits

Prerequisite: ACC 122

ACC 216 addresses concepts of budgetary control as a matter of law and public administration theory. Accounting principles and procedures necessary to implement budgetary controls for governmental units and other not-for-profit institutions and organizations are presented.

ACC 226 Cost Accounting

3 credits

Prerequisite: ACC 122

ACC 226 presents cost accumulation methods and reports. It focuses on the concepts and procedures of job order, process, standard and direct cost systems, budgeting, planning, and control of costs.

ACC 227 Cost Accounting II

3 credits

Prerequisite: ACC 226

ACC 227 is a continuation of ACC 226 and focuses on the decision-making aspects of managerial accounting using electronic spreadsheet applications for assigned problems. Topics include product pricing strategy, capital budgeting, the statement of cash flows, and application of linear programming.

ACC 245 Computerized Accounting with a Professional Package

3 credits

Prerequisite: ACC 121 or ACC 101

ACC 245 integrates accounting principles and practices with a computerized accounting package such as Peachtree, DacEasy, or other professional package. This course emphasizes computerized functions of the general ledger and integrated accounts payable, accounts receivable, invoicing and payroll systems.

ACC 275 Special Topics in Accounting

1-3 credits

ACC 275 provides students with a vehicle to pursue in depth exploration of special topics of interest.

ACC 285 Independent Study

1-3 credits

Prerequisite: Permission of instructor
ACC 285 meets the individual needs of students. Students engage in intensive study or research under the direction of a qualified instructor.

ACC 287 Cooperative Education

1-3 credits

Prerequisite: Permission of instructor
ACC 287 provides an opportunity to gain practical experience in applying occupational skills and/or to develop specific skills in a practical work setting. The instructor works with you to select an appropriate work site, establish learning objectives, and coordinate learning activities with the employer or work site supervisor. For accounting majors only.

ACT - Automotive Collision Technology

ACT 101 Introduction to Automotive Collision Technology

4 credits

ACT 101 is designed as an orientation to the automotive collision repair industry. Students receive an overview of job possibilities as well as learn various types of automobile construction. Names, uses and maintenance procedures for a variety of tools and equipment are covered. Focuses on general collision repair and refinishing shop safety procedures with an emphasis on personal and environmental safety issues. Students also learn the proper handling and disposal of hazardous materials.

ACT 110 Safety In Collision Repair

2 credits

ACT 110 introduces the student to safety techniques and operation as it relates to shop safety and industry standards. The student is exposed to regulations and collision shop operations. In addition, the student becomes involved with VICA, developing writing and speaking skills.

ACT 111 Metal Welding and Cutting I

3 credits

Prerequisite: ACT 101, ACT 110, or Faculty Consent

ACT 111 covers sheet metal oxygen-acetylene torch use and MIG welding techniques including safety, materials, equipment and setups. Personal and vehicle protective measures prior to welding procedures are presented.

ACT 121 Non-Structural Repair Preparation

3 credits

Prerequisite: ACT 101, ACT 110, or Faculty Consent

ACT 121 covers the basic characteristics of preparation for automotive repair. Students familiarize themselves with damage analysis, extent of damage and the sequence of repair. This course focuses on removal of vehicle components and protection of panels along with storage and labeling of parts. Safety procedures and equipment use are included.

ACT 122 Panel Repair and Replacements

3 credits

Prerequisite: ACT 101, ACT 110, or Faculty Consent

ACT 122 covers straightening options prior to replacement decisions. Emphasizes the identification, handling and replacement of parts such as adjustment and alignment of bolt-on parts, fixed parts and accessories.

ACT 123 Metal Finishing and Body Filling

3 credits

Prerequisite: ACT 101, ACT 110, or Faculty Consent

ACT 123 covers metal finishing, metal shrinking and the use of cosmetic fillers. Emphasis is placed on the use of proper tools required to perform these tasks, including use, selection and safety procedures for tools and equipment selected.

ACT 124 Exterior Panel Replacement (Weld-on)

3 credits

Prerequisite: ACT 101, ACT 110, or Faculty Consent

ACT 124 covers the replacement of welded-on panels such as quarters, roofs, cab panels, side panels, etc. Emphasis is placed on the use of proper tools required to perform these tasks, including use, selection and safety procedures for tools and equipment selected.

ACT 131 Structural Damage Diagnosis**3 credits**

Prerequisite: ACT 101, ACT 110, or Faculty Consent

ACT 131 focuses on methods of frame measurement using dimension charts and service manuals. It includes the use of self centering gauges and mechanical and electronic measuring. Appropriate terms and definitions of vehicle structures and vehicle diagnosis are covered including identification and analysis of damage. It includes the techniques for basic hookups and safety procedures used in making corrective pulls.

ACT 132 Structural Damage Repair**3 credits**

Prerequisite: ACT 101, ACT 110, ACT 131, or Faculty Consent

ACT 132 continues the study and application of frame measurement and repair. The student applies methods found in dimension charts and service manuals for vehicle diagnosis and straightening. Training includes the replacement of a structural panel with the identification of damaged suspension components replaced according to manufacturer's recommendations.

ACT 141 Refinishing Safety**1 credit**

Prerequisite: ACT 101, ACT 110, or Faculty Consent

ACT 141 covers correct use of safety procedures used in refinishing. Proper fit and use of various types of protective equipment are emphasized. The identification of tools and equipment, with use and maintenance are covered including national guidelines for proper disposal and handling of hazardous materials.

ACT 142 Surface Preparation I**2 credits**

Prerequisite: ACT 101, ACT 110, or Faculty Consent

ACT 142 covers surface preparation for refinishing including cleaning, sanding, feather edging, chemical treatment of bare materials and priming. The application of primers, including rationale, and use, is covered. In addition, the student learns skills for proper removal and storage of exterior trim and protection of adjacent panels.

ACT 143 Spray Equipment Operation**2 credits**

Prerequisite: ACT 101, ACT 110, or Faculty Consent

ACT 143 covers the inspection, cleaning and determination of the condition of spray guns and related equipment. Students learn skills for adjusting spray guns by setting up and testing spray gun operations.

ACT 144 Refinishing I**2 credits**

Prerequisite: ACT 101, ACT 110, or Faculty Consent

ACT 144 provides the knowledge needed for application and use of automotive paint systems. The course includes locating color codes, mixing formulas, matching and selections of materials. Proper paint gun use and adjustments is taught for the product being applied. In addition, the student practices correct masking and detailing techniques.

ACT 151 Plastics and Adhesives I**1 credit**

Prerequisite: ACT 101, ACT 110, or Faculty Consent

ACT 151 is designed to teach the state-of-the-art repair for both rigid and flexible plastic components and choosing adhesives using the latest manufacturer's repair techniques.

ACT 160 Custom Painting**3 credits**

Prerequisite: ACT 101, ACT 110, or Faculty Consent

ACT 160 provides instruction in basic custom paint application such as pearl paints, candy colors, metal flakes, etc.

ACT 170 Automotive Collision Technology Lab Experiences I**1-9 credits**

Prerequisite: Completion of all courses in ACT specialization area.

ACT 170 is designed to prepare the student to perform basic tasks for a specialized area in a controlled instructional lab.

ACT 171 Automotive Collision Technology Lab Experiences II**1-9 credits**

Prerequisite: Completion of all courses in ACT specialization area.

ACT 171 is a continuation of Lab experience. It is designed to prepare the individual to perform basic tasks for a specialized area in a controlled instructional lab.

ACT 172 Automotive Collision Technology Lab Experiences III**1-9 credits**

Prerequisite: Completion of all courses in ACT specialization area.

ACT 172 is a continuation of Lab experience designed to prepare the individual to perform basic tasks for a specialized area in a controlled instructional lab.

ACT 175 Special Topics**1-9 credits**

ACT 175 assists students who are interested in individual topics within the normal curriculum. The student identifies and selects objectives that he/she needs for industry upgrades or special training to enter the workforce. The student may explore current topics, issues or activities related to one or more aspects of the Automotive Collision industry.

ACT 180 Automotive Collision Repair Internship**1-9 credits**

Prerequisite: Completion of coursework in the specialized area.

ACT 180 is designed to meet the needs of the student in the selected specialized area in a work-based environment. Individualized instruction at the job site is coordinated based on the student's interest and instructor approval.

ACT 205 Estimating and Shop Management**3 credits**

Prerequisite: ACT 101, ACT 110, or Faculty Consent

ACT 205 initiates written estimates on damaged vehicles. Students learn shop management including work orders, ordering supplies, operating costs, time cards, shop liabilities, employee's safety and insurance management issues.

ACT 211 Metal Welding and Cutting II**2 credits**

Prerequisite: ACT 101, ACT 110, or Faculty Consent

Co-requisite: ACT 111, 124

ACT 211 covers MIG welding procedures of seam weld, stitch welds and destructive testing. Resistance spot welding, which includes two-sided spot weld, plasma cutting, safety, materials, and equipment and operating procedures, with emphasis on shop safety are also presented.

ACT 220 Structural Repair II**4 credits**

Prerequisite: ACT 101, ACT 110, and all other lower level Structural Repair courses, or Faculty Consent

ACT 220 allows students to continue practice in structural damage analysis and measuring procedures on both unitized and body-over-frame type vehicles. Proper methods for straightening, as well as replacing structural, mechanical, and electronic components are covered.

ACT 226 Production**4 credits**

Prerequisite: ACT 101, ACT 110, ACT 205, or Faculty Consent

ACT 226 simulates the actual working procedures of an auto collision repair technician. The student performs a variety of structural and non-structural repairs, as well as refinishing operations in accordance with industry procedures, and in compliance with estimates and flat-rate times from collision estimating guides. Students also develop leadership abilities and time management skills.

ACT 231 Advanced Structural Damage Diagnosis and Repair**3 credits**

Prerequisite: ACT 101, ACT 110, and all other lower level Structural Repair courses, or Faculty Consent

ACT 231 covers major automotive body repair in vehicles with major damage on conventional structures and unibody structures. The student learns the operation of equipment and techniques used to straighten and align damaged frames. Identification and analysis of frames, hot and cold stress relieving, servicing and sectioning of structural frames are also included. Liability issues and the importance of making these corrections according to the manufacturer's recommendations and industry standards are emphasized.

ACT 232 Fixed Glass Repair**2 credits**

Prerequisite: ACT 101, ACT 110, or Faculty Consent

ACT 232 covers the removal and replacement of fixed glass using manufacturer's specifications, proper tools and recommended materials. Application of skills is demonstrated and utilized for the removal and replacement of modular glass using manufacturer's specifications and procedures.

ACT 241 Paint Defects**3 credits**

Prerequisite: ACT 101, ACT 110, and all other lower level Refinishing courses, or Faculty Consent

ACT 241 covers paint defects. It emphasizes the causes of paint defects with methods to cure problems during and after refinishing procedures. Students learn to identify the proper surface preparations to apply prior to refinishing. Training includes using paint equipment and determining paint film thickness with proper temperatures for refinishing.

ACT 242 Surface Preparation II**2 credits**

Prerequisite: ACT 101, ACT 110, and all other lower level Refinishing courses, or Faculty Consent

ACT 242 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, is covered.

ACT 243 Refinishing II**2 credits**

Prerequisite: ACT 101, ACT 110, and all other lower level Refinishing courses, or Faculty Consent

ACT 243 is an advanced course in which students learn the necessary skills used to tint and blend panels working with the latest finishes and paints. Special coatings and procedures are covered in this course.

ACT 244 Final Detail**2 credits**

Prerequisite: ACT 101, ACT 110, or Faculty Consent

ACT 244 focuses on the detailing procedures in paint refinishing of vehicles. Methods and techniques are specialized to enhance painting skills. Transfers and tapes methods with decals etc. are demonstrated.

ACT 251 Plastics and Adhesives II**1 credit**

Prerequisite: ACT 101, ACT 110, ACT 151, or Faculty Consent

ACT 251 emphasizes advanced plastic and adhesives. The current state-of-the-art repair for both rigid and flexible plastic components using the latest manufacturer's repair techniques are presented. Sheet Molded Compound procedures and the use of proper adhesives are covered.

ACT 266 Mechanical Components**1-40 credits**

Prerequisite: ACT 101, ACT 110, or Faculty Consent

ACT 266 allows students to select any or all mechanical instructional areas of collision related mechanical technology to study. This includes Electrical, Brakes, Steering & Suspension, Heating & Air Conditioning, Drive Train, and Restraints.

ANT - Anthropology

ANT 101 – Cultural Anthropology 3 Credits

ANT 101 studies human cultural patterns and learned behavior. It includes linguistics, social and political organization, religion, culture and personality, culture change, and applied anthropology.

ANT 111 – Physical Anthropology 3 Credits

ANT 111 studies human biology and its effects on behavior. It includes principles of genetics and evolution, vertebrates and primates, human origins, human variation, and ecology.

ARE - Apprentice- Related Technology

ARE 110 Carpentry I 4 credits

ARE 110 provides the student an orientation to the carpentry trade, basic safety, construction math, hand and power tools, wood building materials, and basic rigging.

ARE 111 Painting I 4 credits

ARE 111 covers safety, math, careers, hand and power tools, blueprints, rigging, ladders, scaffold, lifts, fall protection, materials and conditions, preparation, sealants and fillers, paints and coatings, brushing and rolling paints, and coatings.

ARE 112 Electrical I 4 credits

ARE 112 presents general safety, tools of the electrical trade, contractor owned tools, trade history and introduces electrical theory, conduit outlet boxes and the National Electrical Code. It 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 113 Masonry I 4 credits

ARE 113 introduces students to the masonry trade. It 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.

ARE 114 Plumbing I 4 credits

ARE 114 introduces the plumbing trade and covers topics including plumbing careers, trade regulations and safe and effective use of tools. It focuses on First Aid, OSHA, plumbing math, related science and installation practices. Beginning blueprint reading completes year one of Plumbing and Pipefitting. The ability to lift 80 pounds and climb a 25 foot ladder is required.

ARE 115 Sheet Metal I 4 credits

ARE 115 introduces safety, shop/trade mathematics, the principles of layout, the elements of blueprint reading and fabrication. This course also covers the various tools, fasteners, metals and sheet metal processes.

ARE 120 Carpentry II 4 credits

Prerequisite: ARE 110 or permission of the coordinator.
ARE 120 covers site layout 1 (distance measurement and leveling) and introduction to blueprints.

ARE 121 Painting II 4 credits

Prerequisite: ARE 111 or permission of coordinator.

ARE 121 focuses on safety, math, careers, hand and power tools, blueprints, rigging, ladders, scaffold, lifts, fall protection, materials and conditions, preparation, sealants and fillers, paints and coatings, brushing and rolling paints, and coatings.

ARE 122 Electrical II 4 credits

Prerequisite: ARE 112 or permission of Coordinator

ARE 122 presents general safety, tools of the electrical trade, contractor owned tools, trade history and introduces electrical theory, conduit outlet boxes and the National Electrical Code. It explores the sources of electricity, trade math, laws of electricity, series circuits, parallel circuits and series parallel circuits. It covers magnetism laws, wire devices, service boxes connectors, conduit bending, conductors and insulators, insulation and pulling large and small wires.

ARE 123 Masonry II 4 credits

Prerequisite: ARE 113 or permission of coordinator

ARE 123 introduces students to the masonry trade. It 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.

ARE 124 Plumbing II 4 credits

Prerequisite: ARE 114 or permission of coordinator.

ARE 124 introduces the plumbing trade and covers topics including plumbing careers, trade regulations and safe and effective use of tools. It covers first aid, OSHA, plumbing math, related science and installation practices. Beginning blueprint reading completes year one of Plumbing and Pipefitting. The ability to lift 80 pounds and climb a 25 foot ladder is required.

ARE 125 Sheet Metal II**4 credits**

Prerequisite: ARE 115 or permission of the coordinator.

ARE 125 introduces safety, shop/trade mathematics, the principles of layout, the elements of blueprint reading and fabrication. This course also covers the various tools, fasteners, metals and sheet metal processes.

ARE 130 Carpentry III**4 credits**

Prerequisite: ARE 120 or permission of the coordinator.

ARE 130 covers reading plans and elevations, foundations and flatwork, soils and compaction, and concrete forms.

ARE 131 Painting III**4 credits**

Prerequisite: ARE 121 or permission of coordinator.

ARE 131 focuses on job planning, stains, coatings, water and chemical cleaning, spray painting, remedies, wall coverings, wood finishing, graphics, and glazing and antiquing.

ARE 132 Electrical III**4 credits**

Prerequisite: ARE 122 or permission of coordinator

ARE 132 covers blueprint symbols, blueprint reading, schedules and specifications, instruments and meters, characteristics of induction and AC capacitance. It includes series circuits (AC), parallel circuits (AC), over-current 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 133 Masonry III**4 credits**

Prerequisite: ARE 123 or permission of coordinator.

ARE 133 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.

ARE 134 Plumber and Pipefitter III**4 credits**

Prerequisite: ARE 124

ARE 134 teaches the specific aspects of water piping materials, additional plumbing math, sewage disposal, blueprint reading, shielded welding and water properties. Safety and rigging concepts end the second year of this course.

ARE 135 Sheet Metal III**4 credits**

Prerequisite: ARE 125 or permission of the coordinator

ARE 135 introduces parallel line development, triangulation, radial line development and expands your knowledge of trade mathematics. It presents soldering and brazing, hangers and supports, insulation, gutters and downspouts, flashing and hoods and ventilators.

ARE 140 Carpentry IV**4 credits**

Prerequisite: ARE 130 or permission of the coordinator

ARE 140 is an introduction to concrete, reinforcing concrete, handling and placing concrete, patented forms, tilt-up wall systems, and light equipment.

ARE 141 Painting IV**4 credits**

Prerequisite: ARE 131 or permission of coordinator.

ARE 141 focuses on job planning, stains, coatings, water and chemical cleaning, spray painting, remedies, wall coverings, wood finishing, graphics, and glazing and antiquing.

ARE 142 Electrical IV**4 credits**

Prerequisite: 132 or permission of coordinator

ARE 142 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) over-current 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. Introduces alternating current, Ohm's Law for Alternating Current, the theory of grounding and the general requirements of wiring.

ARE 143 Masonry IV**4 credits**

Prerequisite: ARE 133 or permission of the coordinator.

ARE 143 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.

ARE 144 Plumber and Pipefitter IV**4 credits**

Prerequisite: ARE 134 or permission of the coordinator.

ARE 144 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.

ARE 145 Sheet Metal IV**4 credits**

Prerequisite: ARE 135 or permission of the coordinator

ARE 145 introduces parallel line development, triangulation, radial line development and expands your knowledge of trade mathematics. This course also presents soldering and brazing, hangers and supports, insulation, gutters and downspouts, flashing and hoods and ventilators.

ARE 151 Painting V**4 credits**

Prerequisite: ARE 141 or permission of coordinator.

ARE 151 covers trade history, math and measurement, color and sheen, spraying special devices, wallcovering failures and remedies, surface preparation, adhesives and installation, stenciling, gliding lining and stripping, texturing, caulks, roof coatings, finishing, water-proofing, and floor coatings.

ARE 152 Electrical V**4 credits**

Prerequisite: ARE 142 or permission of coordinator

ARE 152 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. It explores residential calculations, fixed electric space heating, fundamentals of AC motors, control of motor starting, single phase motors and polyphase motors. It covers the general requirements for commercial wiring and busways, as well as motor circuit, code, types of motors, wire sizing, overload protection, motor connections and over-current protection.

ARE 153 Masonry V**4 credits**

Prerequisite: ARE 143 or permission of the coordinator.

ARE 153 covers safety panels and prisms, brick creativity, stone work, residential masonry, glass block, acid brick and refractories, structured glazed tile, repair and restoration, panel construction, welding and brick paving.

ARE 154 Plumber and Pipefitter V**4 credits**

Prerequisite: ARE 144 or permission of the coordinator.

ARE 154 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 complete this course.

ARE 155 Sheet Metal V**4 credits**

Prerequisite: ARE 145 or permission of the coordinator.

ARE 155 introduces welding, brazing and cutting. The principles of air flow, equipment, fiberglass and PVC ducts, blueprint specifications and field measuring and fitting are also explored in this course.

ARE 156 Painting VI**4 credits**

Prerequisite: ARE 151 or permission of the coordinator.

ARE 156 covers trade history, math and measurement, color and sheen, spraying special devices, wallcovering failures and remedies, surface preparation, adhesives and installation, stenciling, gliding lining and stripping, texturing, caulks, roof coatings, finishing, water-proofing, and floor coatings.

ARE 157 Electrical VI**4 credits**

Prerequisite: ARE 152 or permission of coordinator

ARE 157 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. It explores residential calculations, fixed electric space heating, fundamentals of AC motors, control of motor starting, single phase motors and polyphase motors. In addition, this course covers the general requirements for commercial wiring and busways, as well as motor circuit, code, types of motors, wire sizing, overload protection, motor connections and over-current protection.

ARE 158 Plumber and**Pipefitter VI****4 credits**

Prerequisite: ARE 154 or permission of coordinator.

ARE 158 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 complete this course.

ARE 159 Sheet Metal VI**4 credits**

Prerequisite: ARE 155 or permission of coordinator

ARE 159 introduces welding, brazing and cutting. The principles of air flow, equipment, fiberglass and PVC ducts, blueprint specifications and field measuring and fitting are also explored in this course.

ARE 163 Masonry VI**4 credits**

Prerequisite: ARE 153 or permission of coordinator

ARE 163 covers safety panels and prisms, brick creativity, stone work, residential masonry, glass block, acid brick and refractories, structured glazed tile, repair and restoration, panel construction, welding and brick paving.

ARE 164 Plumber and**Pipefitter VII****4 credits**

Prerequisite: ARE 158 or permission of coordinator.

ARE 164 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.

ARE 165 Sheet Metal VII**4 credits**

Prerequisite: ARE 159 or permission of coordinator

ARE 165 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.

ARE 167 Electrical VIII**4 credits**

Prerequisite: ARE 162 or permission of coordinator

ARE 167 explores tool and material takeoffs, electrical safety, reading diagrams, journey person responsibilities, low voltage lighting control, emergency lighting, special systems, transformer connections, solid state fundamentals and advanced meter applications. This course also covers high voltage fundamentals, special occupancies and equipment, resistive heating cables and special terminations.

ARE 168 Plumber and Pipefitter VIII**4 credits**

Prerequisite: ARE 164 or permission of coordinator.

ARE 168 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.

ARE 169 Sheet Metal VIII**4 credits**

Prerequisite: ARE 165 or permission of coordinator

ARE 169 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.

ARE 210 Carpentry V**4 credits**

Prerequisite: ARE 140 or permission of the coordinator

ARE 210 It covers windows and exterior doors; roof framing; exterior finishing, roofing applications and advanced roofing systems, thermal and moisture protection, and metal buildings.

ARE 220 Carpentry VI**4 credits**

Prerequisite: ARE 210 or permission of the coordinator

ARE 220 covers floor systems, wall and ceiling framing, and roof framing.

ARE 230 Carpentry VII**4 credits**

Prerequisite: ARE 220 or permission of the coordinator

ARE 230 It covers windows and exterior doors; roof framing, exterior finishing, roofing applications and advanced roofing systems, thermal and moisture protection, and metal buildings.

ARE 240 Carpentry VIII**4 credits**

Prerequisite: ARE 230 or permission of the coordinator

ARE 240 will teach the student about cabinet installation, trim work, a review of stair construction, and introduction to management and supervision.

ART- Art

www.rccc.edu/arts/art

ART 110 Art Appreciation**3 credits**

ART 110 introduces the cultural significance of the visual arts, including media, processes, techniques, traditions, and terminology.

ART 111 Art History I**3 credits**

ART 111 provides the knowledge base to understand the visual arts, especially as related to Western culture. This course surveys the visual arts from the Ancient through the Medieval periods.

ART 112 Art History II**3 credits**

No prerequisite

ART 112 provides the knowledge base to understand the visual arts, especially as related to Western culture. This course surveys the visual arts from the Renaissance through the Modern periods.

ART 121 Drawing I**3 credits**

ART 121 investigates the various approaches and media that students need in order to develop drawing skills and visual perception.

ART 122 Drawing II**3 credits**

Prerequisite: ART 121, or permission of instructor

ART 122 explores expressive drawing techniques with an emphasis on formal composition, color media, and content or thematic development.

ART 123 Watercolor I**3 credits**

Prerequisite: ART 121, ART 131, or permission of instructor

ART 123 introduces the basic techniques and unique aspects of materials involved in the use of either transparent or opaque water media or both. Color theory is included.

ART 124 Watercolor II**3 credits**

Prerequisite: ART 123, or permission of instructor

ART 124 continues the study of watercolor techniques, emphasizing original compositions and experimentation with materials. Color theory is included.

ART 131 2D Design**3 credits**

ART 131 examines the basic elements of design, visual perception, and artistic form and composition as they relate to two-dimensional media.

ART 132 3D Design**3 credits**

ART 132 focuses on learning to apply the elements and principles of design to three-dimensional problems.

ART 141 Jewelry and Metal**Work I****3 credits**

ART 141 introduces the construction of jewelry designs in metals and small casting techniques.

ART 142 Jewelry and Metal**Work II****3 credits**

Prerequisite: ART 141, or permission of instructor

ART 142 emphasizes conceptual design development, using casting and specialized techniques.

ART 146 Stained Glass I**3 credits**

ART 146 develops a basic understanding of and approach to stained glass. Students gain an understanding of and appreciation for the properties of glass and the nature of finished stained glass construction.

ART 147 Stained Glass II**3 credits**

Prerequisite: ART 146, or permission of instructor

ART 147 is a continuation of Stained Glass I. Students advance to a clearer but still basic understanding of and approach to stained glass. Students gain a greater understanding of and appreciation for the properties of glass and the nature of finished stained glass construction

ART 154 Sculpture I**3 credits**

Prerequisite: ART 131, ART 132, or permission of instructor

ART 154 introduces the fundamentals of sculpture such as modeling, casting, carving, and the processes of assemblage.

ART 155 Sculpture II**3 credits**

Prerequisite: ART 154, or permission of instructor

ART 155 develops an understanding of and focus on manipulation of three-dimensional form, with greater concentration on individual creativity and style.

ART 156 Figure Drawing I**3 credits**

ART 156 introduces the basic techniques of drawing the human figure.

ART 157 Figure Painting I**3 credits**

ART 157 focuses on painting the human figure, and includes a brief survey of figure painting, and instruction in the fundamental methods of composition and expressions.

ART 161 Ceramics I**3 credits**

ART 161 introduces traditional and contemporary ceramic forms and processes, including handbuilding and throwing on the potter's wheel.

ART 162 Ceramics II**3 credits**

Prerequisite: ART 161

ART 162 is a continuation of ART 161. This course emphasizes skill, technique and form.

ART 175-177 Special Topics**1-6 credits**

Prerequisite: Permission of instructor
ART 175-177 cover specific topics in art. These courses are offered as needed for credit appropriate to the topic. Each offering includes a description of the topic(s).

ART 207 Art History – 1900 to Present**3 credits**

No prerequisite

ART 207 provides students with the knowledge base to understand the visual arts as related to Modern and Contemporary visual art. This course surveys world art of the twentieth century, including Modernism to Post-Modernism.

ART 209 Studio Art**3 credits**

Prerequisite: Permission of instructor
ART 209 is designed for advanced students interested in further exploring an art discipline to develop a more comprehensive portfolio.

ART 211 Painting I**3 credits**

Prerequisite: ART 121, ART 131, or permission of instructor

ART 211 explores basic techniques, materials, and concepts used in opaque painting processes in oil or acrylic painting to depict form and space on a two-dimensional surface.

ART 212 Painting II**3 credits**

Prerequisite: ART 211, or permission of instructor

ART 212 further explores techniques, materials, and concepts used in opaque painting processes in oil or acrylic painting, with emphasis on composition and content development.

ART 213 Painting III**3 credits**

Prerequisite: ART 212, or permission of instructor

ART 213 provides continued exploration of techniques, materials, and concepts used in opaque painting processes in oil or acrylic painting, with emphasis on composition and content development.

ART 214 Painting IV**3 credits**

Prerequisite: ART 213, or permission of instructor

ART 214 explores advanced techniques, materials, and concepts used in opaque painting processes, with emphasis on the development of themes and a cohesive body of work.

ART 221 Drawing III**3 credits**

Prerequisite: ART 122, or permission of instructor

ART 221 offers a continued study of expressive drawing techniques and development of individual style, with an emphasis on composition and technique variation.

ART 222 Drawing IV**3 credits**

Prerequisite: ART 221, or permission of instructor

ART 222 explores advanced drawing problems with an emphasis on conceptual development and portfolio and/or exhibition quality presentation.

ART 223 Watercolor III**3 credits**

Prerequisite: ART 124, or permission of instructor

ART 223 concentrates on the advanced study of subject development, form, color, and theme in watercolor.

ART 224 Watercolor IV**3 credits**

Prerequisite: ART 223, or permission of instructor

ART 224 concentrates on the advanced study of techniques, individual style of expression, and consistency of compositional problem-solving in watercolor.

ART 225 Printmaking I

3 credits

Prerequisites: ART 121 and ART 131, or permission of instructor

ART 225 introduces the basic techniques and skills of printmaking as a fine art medium. Instruction includes an understanding of visual concepts as they relate to prints. This course may include introduction to relief, intaglio, lithography, and screen printing techniques.

ART 226 Printmaking II

3 credits

Prerequisite: ART 225, or permission of instructor

ART 226 introduces more advanced techniques and skills of printmaking as a fine art medium. Instruction includes an understanding of visual concepts as they relate to prints. This course may include introduction to relief, intaglio, lithography, and screen printing techniques.

ART 231 Advanced 2D Design

3 credits

Prerequisite: ART 131

ART 231 provides continued study of the principles and elements of two-dimensional design with an emphasis on visual communication for further application in fine art, commercial art, and/or applied arts.

ART 232 Advanced 3D Design

3 credits

Prerequisite: ART 132

ART 232 provides continued study of the principles and elements of three-dimensional design with an emphasis on visual communication for further application in fine art, commercial art, and/or applied arts.

ART 241 Jewelry and Metal Work III

3 credits

Prerequisite: ART 142, or permission of instructor

ART 241 focuses upon advanced work and emphasizes experimentation with materials and techniques, individual designs, and superior craftsmanship.

ART 242 Jewelry and Metal Work IV

3 credits

Prerequisite: ART 241, or permission of instructor

ART 242 provides continued study of the properties of metal and stone in creating decorative work. Students employ advanced design and techniques to explore original, personal expression. A variety of materials and approaches are used in discovering new and independently creative finished pieces.

ART 246 Stained Glass III

3 credits

Prerequisite: ART 147

ART 246 provides continued instruction in which students advance to a clearer and more advanced understanding of and approach to stained glass. Students gain a greater understanding of and appreciation for the properties of glass and the nature of finished stained glass construction. This course emphasizes original, personal expression.

ART 247 Stained Glass IV

3 credits

Prerequisite: ART 246

ART 247 continues instruction in stained glass with students advancing to a clearer understanding and approach. Students gain greater appreciation for the properties of glass and the nature of finished stained glass construction. This course focuses on original, personal expression. Student independence is emphasized with regard to use of materials and tools and a wide variety of glass.

ART 254 Sculpting the Figure

3 credits

ART 254 focuses on sculpting the human figure using modeling techniques in clay.

ART 256 Advanced Figure Drawing

3 credits

Prerequisite: ART 156

ART 256 provides continuing study of the various methods of drawing the human figure, with emphasis on the description of form and individual style.

ART 257 Advanced Figure Painting

3 credits

Prerequisite: ART 157

ART 257 offers continued study of painting the human figure with advanced problem-solving in composition and experimentation with materials and techniques.

ART 261 Ceramics III

3 credits

Prerequisite: ART 162

ART 261 encourages students to develop an individual style of wheel-thrown and hand-built ceramic forms with continuing involvement in surface treatment.

ART 262 Ceramics IV

3 credits

Prerequisite: ART 261

ART 262 continues advanced work with emphasis on various clay bodies, unique glazes and engobes, combining different textures and shapes, and development of personal forms.

ART 264 Marketing for the Visual Artist

3 credits

Prerequisite: 12 credits of any combination of ART courses

ART 264 provides students with the framework, tools, and professional materials necessary for the practicing visual artist. Guidelines for writing proposals, artist's statements, and resumes are discussed and practiced. This course explores theoretical and practical considerations related to portfolio presentation and exhibiting artwork through hands-on activities, readings, and discussion.

ART 268 Sculpture III

3 credits

Prerequisite: ART 155 or permission of instructor

ART 268 focuses on advanced individual sculpture projects, emphasizing experimentation with materials, accomplished technique, and conceptual significance.

ART 275-277 Special Topics**1-6 credits**

Prerequisite: Permission of instructor
ART 275-277 cover specific topics in art. These courses are offered as needed for credit appropriate to the topic. Each offering includes a description of the topic(s).

ART 280 Internship**1-6 credits**

Prerequisite: Permission of instructor
ART 280 provides the opportunity for students to gain supervised occupational experience in any of the disciplines involving the visual arts, including, but not limited to, gallery or museum administration and graphic design. Instruction is coordinated by the on-site supervisor and instructor and is totally based on the student's occupational experience plan.

ASE- Automotive Service Technology

ASE 101 Auto Shop Orientation**2 credits**

ASE 101 provides students with safety instruction in the shop and on the Automobile. Emphasis is placed on the proper use and care of test equipment, precision measuring and machining equipment, gaskets, adhesives, tubing, wiring, jacks, presses, and cleaning equipment and techniques.

ASE 102 Introduction to the Automotive Shop**2 credits**

ASE 102 prepares the incoming automotive student to work in the shop safely and gain familiarity with the shop and common equipment.

ASE 110 Brakes I**3 credits**

ASE 110 covers basic operation of automotive braking systems. The course includes operation, diagnosis, and basic repair of disc brakes, drum brakes, and basic hydraulic systems.

ASE 120 Basic Automotive Electricity**2 credits**

ASE 120 introduces automotive electricity and includes basic electrical theory, circuit designs, and wiring methods. The course focuses on multi-meter usage and wiring diagrams.

ASE 123 Automotive Battery, Starting, and Charging Systems**2 credits**

Prerequisite: ASE 120
ASE 123 covers the operation, testing, and servicing of automotive battery, starting, and charging systems. The course includes voltage and amperage testing of starter and alternator, load testing and battery maintenance.

ASE 130 General Engine Diagnosis**2 credits**

ASE 130 focuses on theory and related laboratory experiences in the diagnosis and necessary corrective actions of automotive fuel, ignition and mechanical engine performance factors.

ASE 132 Ignition System Diagnosis and Repair**2 credits**

Prerequisite: ASE 130
ASE 132 focuses on theory and related laboratory experiences in the diagnosis, service, adjustments and repair of various automotive ignition systems.

ASE 134 Automotive Emissions**2 credits**

Prerequisite: ASE 132
ASE 134 focuses on theory and laboratory experiences in the diagnosis and repair of automotive emission control systems.

ASE 140 Suspension and Steering I**3 credits**

ASE 140 focuses on theory and related experiences in the diagnosis and service of suspensions and steering systems and their components.

ASE 150 Automotive U-joint and Axle Shaft Service**2 credits**

ASE 150 studies the operating principles and repair procedures relating to axle-shafts, drive shafts and universal joints.

ASE 151 Automotive Manual Transmission/Transaxles and Clutches**2 credits**

ASE 151 focuses on theory and related laboratory experiences in the diagnosis and repair of automotive manual transmissions, transaxles, clutches and related components.

ASE 152 Differentials and 4WD/AWD Service**2 credits**

ASE 152 focuses on theory and related laboratory experiences in the diagnosis and repair of automotive differentials, transfer cases, four wheel and all wheel drive units.

ASE 160 Automotive Engine Removal and Installation**3 credits**

ASE 160 focuses on theory and laboratory experiences in the removal and installation procedures of the automotive engine from and into front wheel and rear wheel drive vehicles.

ASE 161 Engine, Disassembly Diagnosis and Assembly**5 credits**

ASE 161 focuses on theory and laboratory experiences in the disassembly, diagnosis and reassembly of the automotive engine. Topics include the diagnostic and repair procedures for the engine block and head assemblies.

ASE 201 Automotive Parts Management**6 credits**

ASE 201 covers instruction as to the proper methods in completing parts invoices, repair orders, sales receipts and tickets. Also included are handling and pricing procedures utilized in parts areas: warehouse distributor, jobber, retail and wholesale prices.

ASE 210 Brakes II

3 credits

Prerequisite: ASE 110

ASE 210 covers the operation and theory of the modern automotive braking systems. This course includes operation, diagnosis, service, and repair of anti-lock braking systems, power assist units and machining operations on brake systems.

ASE 221 Automotive Body Electrical

5 credits

Prerequisite: ASE 120

ASE 221 provides a comprehensive study of the theory, operation, diagnosis, and repair of electrical/electronic vehicle accessories such as lights, wipers, horns.

ASE 231 Automotive Computers

2 credits

Prerequisite: ASE 120, ASE 134, ASE 220

ASE 231 focuses on theory and laboratory experiences in the inspection and testing of typical computerized engine control systems.

ASE 233 Fuel Injection and Exhaust Systems

4 credits

Prerequisite: ASE 120, ASE 134, ASE 231

ASE 233 focuses on theory and related laboratory experiences in the diagnosis and repair of electronic fuel injection systems and modern exhaust systems.

ASE 235 Driveability Diagnosis

1 credit

Prerequisite: ASE 233

ASE 235 emphasizes theory and related laboratory experience in diagnostic techniques and the use of diagnostic scan tools, oscilloscopes, lab scopes, multi-meters and gas analyzers. Students diagnose live vehicle driveability problems.

ASE 240 Suspension and Steering II

3 credits

Prerequisite: ASE 140

ASE 240 emphasizes theory and related experiences in the diagnosis and service of active suspensions and steering systems and wheel alignment.

ASE 250 Automatic Transmission/Transaxle Service

3 credits

ASE 250 focuses on practical methods of maintaining, servicing, and performing minor in car adjustments on an automatic transmission and transaxle.

ASE 251 Automatic Transmission/ Transaxle Diagnosis and Assemblies

5 credits

Prerequisite: ASE 250

ASE 251 covers diagnosis, principles of hydraulics, principles of electronic components, power flow, theory of operation, removal of transmission/transaxle, tear down, replacement of components, measurement and subsequent adjustment of components and replacement of transmission/ transaxle.

ASE 265 Automotive Heating and Air Conditioning

5 credits

ASE 265 emphasizes theory and related laboratory experiences in the diagnosis and service of automotive heating and air conditioning systems and their components.

ASE 280 Internship: Electrical and Engine Performance

1-6 credits

Prerequisite: ASE 120, ASE 130

ASE 280 focuses on practical on-the-job, work related experience that corresponds to the area of study.

ASE 281 Internship: Heavy Duty and Power Train

1-6 credits

Prerequisite: ASE 130

ASE 281 Focuses on practical on-the-job, work related experience that corresponds to the area of study.

ASE 282 Internship: General (Summer)

1-6 credits

Prerequisite: Permission of instructor

ASE 282 emphasizes practical on-the-job, work related experience that corresponds to the area of study.

ASE 285 Independent Study

1-6 credits

Prerequisite: Permission of instructor

ASE 285 Meets the individual needs of students. Students engage in intensive study or research under the direction of a qualified instructor.

ASE 287 Cooperative Education

1-6 credits

Prerequisite: 24 credit hours of automotive classes.

ASE 287 develops practical objectives assigned by an automotive employer providing an on-the-job learning experience at an approved automotive repair facility.

ASL - American Sign Language

www.rccc.edu/languages

ASL 121 American Sign Language I

5 credits

This course exposes you to American Sign Language. Readiness activities are conducted focusing on visual/receptive skills and basic communication. Uses the direct experience method. Students must complete this course with a 'B' or higher or pass the ASL proficiency test with a score of at least 80 percent or better prior to registering for ASL 122, if planning to enroll in the Interpreter Preparation Program.

ASL 122 American Sign Language II

5 credits

Prerequisite: Successful completion of ASL 121 or passing the ASL 121 proficiency exam.

Co-requisite: Permission of instructor.

This course develops a basic syntactic knowledge of American Sign Language (ASL), basic vocabulary and basic conversational skills. Incorporates vital aspects of deaf culture and community. The direct experience method is used to enhance the learning process. Students must complete this course with a 'B' or higher or pass the ASL 121 proficiency test at 80% or better prior to acceptance into the Interpreting and Transliterating Preparation program.

ASL 122 American Sign Language II

5 credits

Prerequisite: Successful completion of ASL 121 or passing the ASL 121 proficiency exam.

Co-requisite: Permission of instructor.

ASL 122 develops a basic syntactic knowledge of American Sign Language (ASL), basic vocabulary and basic conversational skills. It incorporates vital aspects of deaf culture and community. The direct experience method is used to enhance the learning process. Students must complete this course with a 'B' or higher or pass the ASL 121 proficiency test at 80% or better prior to acceptance into the Interpreting and Transliterating Preparation program.

AST - Astronomy

AST 101 Astronomy I

4 credits

AST 101 focuses on the history of astronomy, the tools of the astronomer and the contents of the solar system, including the planets, moons, asteroids, comets, and meteoroids. AST 101 incorporates a laboratory experience.

AST 102 Astronomy II

4 credits

AST 102 emphasizes the structure and life cycle of the stars, the sun, galaxies, and the universe as a whole, including cosmology and relativity. AST 102 incorporates a laboratory experience.

BIO- Biology

www.rccc.edu/science/biology

BIO 105 Science of Biology

4 credits

BIO 105 examines the basis of biology in the modern world and surveys the current knowledge and conceptual framework of the discipline. BIO 105 explores biology as a science - a process of gaining new knowledge - and the impact of biological science on society. This course includes laboratory experiences and is designed for non-science majors.

BIO 106 Basic Anatomy and Physiology

4 credits

BIO 106 focuses on basic knowledge of body structures and function, and provides a foundation for understanding deviations from normal and disease conditions. This course is designed for individuals interested in health care and is directly applicable to the Practical Nursing Program, Paramedic Program and the Medical Office Technology Program.

BIO 111 General College Biology with Lab

5 credits

BIO 111 examines the fundamental molecular, cellular and genetic principles characterizing plants and animals. This course includes cell structure and function, and the latest information: metabolic processes of respiration, and photosynthesis, as well as cell reproduction and basic concepts of heredity. This course includes laboratory experience.

BIO 112 General College Biology II with Lab

5 credits

Prerequisite: BIO 111

BIO 112 is a continuation of Biology I. This course includes ecology, evolution, classification, structure, and function in plants and animals. This course includes laboratory experience.

BIO 201 Human Anatomy and Physiology I

4 credits

Prerequisite: BIO 111 or equivalent, or permission of department chair

BIO 201 focuses on an integrated study of the human body, including the histology, anatomy, and physiology of each system. This course examines molecular, cellular, and tissue levels of organization plus integumentary, skeletal, articular, muscular, nervous, and endocrine systems. It includes a mandatory hands-on laboratory experience covering experimentation, microscopy, observations, and dissection. This is the first semester of a two-semester sequence.

BIO 202 Human Anatomy and Physiology II

4 credits

Prerequisites: BIO 201 or equivalent, or permission of department chair

BIO 202 focuses on the integrated study of the human body and the histology, anatomy, and physiology of the following systems and topics: cardiovascular, hematology, lymphatic and immune, urinary, fluid and electrolyte control, digestive, nutrition, respiratory, reproductive and development. This course includes a mandatory hands-on laboratory experience involving experimentation, microscopy, observations, and dissection. This is the second semester of a two-semester sequence.

BIO 208 Microbiology

5 credits

Prerequisites: BIO 111 or equivalent, or permission of department chair

BIO 208 surveys the biology of microorganisms. Topics include microbial diversity, functional anatomy, biochemistry, genetics, ecology and disease. This mandatory laboratory allows students to experiment on, examine, culture, and identify microbes.

BIO 211 Cell Biology

4 credits

Prerequisite: BIO 111 or equivalent, or permission of department chair.

BIO 211 is an intensive study of the cell and its organelles. Emphasis will be on the molecular mechanisms involved in cell communication, metabolism, motility, genetics, growth, and reproduction. This course requires hands-on laboratory experience.

BIO 212 Molecular Biology

4 credits

Prerequisite: BIO 111 or equivalent, or permission of department chair
BIO 212 is an intensive survey of molecular biology techniques and principles. Topics will include chemical and enzymatic reactions, cellular processes, DNA, RNA, and protein manipulations, and genetic studies. This course requires hands-on laboratory experience.

BIO 220 General Zoology

5 credits

Prerequisite: BIO 111 or equivalent, or permission of department chair
BIO 220 focuses on the study of invertebrate and vertebrate animals and examines structure, evolutionary development, ecology, classification, physiology, reproduction, and zoogeography. A survey of zoological diversity emphasizes the characteristics, zoological contributions, and classification of animal phyla and major classes. This course requires hands-on laboratory and field experience and is designed for biology majors.

BIO 221 Botany

5 credits

Prerequisites: BIO 111 or equivalent, or permission of department chair
BIO 221, designed for a biology major, is a study of nonvascular and vascular plants. It emphasizes photosynthetic pathways, form and function, reproduction, physiology, genetics, diversity, evolution, and ecology. This course requires mandatory hands-on laboratory and field experience.

BIO 228 Field Biology

4 credits

Prerequisites: BIO 111 or equivalent, or permission of department chair
BIO 228 involves in-depth field study of natural environments within and outside of the United States. This course varies from seven to twenty-one days in length. Focuses on the identification of organisms, as well as an examination of ecological concepts and principles. This course requires hands-on laboratory and field experience (includes extensive hiking).

BTE- Business Technology

www.rccc.edu/cis

BTE 100 Computer Keyboarding

1 Credit

Prerequisite: None
BTE 100 is designed for students who have minimal or no keyboarding skills. This 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

2 Credits

Prerequisite: BTE 100 or minimum typing speed of 20 wpm
BTE 102 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

1 Credit

BTE 108 introduces touch control of the PC ten-key pad. This class emphasizes the development of speed and accuracy using proper techniques.

BTE 111 Keyboarding

Speedbuilding I

2 Credits

Prerequisite: BTE 102 or minimum typing speed of 25 wpm
BTE 111 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

Speedbuilding II

2 Credits

Prerequisite: BTE 111 or minimum typing speed of 30 wpm
BTE 112 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

Prerequisite: Acceptable keyboarding proficiency
BTE 125 offers instruction on how records are created, stored, and retrieved are presented in this course. It covers the basic filing rules--classifying, indexing, coding, storing, and retrieving as applied to the basic methods--alphabetic, chronological, subject, numeric, and geographic. The student does "hands-on" records management through the use of simulations, which includes manual and/or computer software.

BTE 166 Business Editing Skills

3 Credits

Prerequisite: None
BTE 166 is designed to develop skills that will allow students to edit copy so that mailable copy can be produced.

BTE 202 Office Simulation I

3 Credits

Prerequisite: CIS 118 or permission of instructor
BTE 202 provides experience in the atmosphere of reality 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 203 Office Simulation II

3 Credits

Prerequisite: BTE 202; or experience with advanced word processing and electronic spreadsheet applications, minimum keyboarding skill 35 wpm; or permission of instructor
BTE 203 provides the student the opportunity to demonstrate and perfect the computer, organizational, and communication skills required to secure employment and/or advancement in the workplace.

BTE 225 Administrative Office Management**3 Credits**

Prerequisite: None

BTE 225 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 287 Cooperative Education/Internship**3 Credits**

Prerequisite: Permission of instructor

BTE 287 allows students to gain work experience from on-the-job training.

BUS-Business

www.rccc.edu/business

BUS 115 Introduction to Business**3 credits**

BUS 115 focuses on the operation of the American business system. The course covers fundamentals of the economy, careers and opportunities, marketing, management, production, governmental regulations, tools of business, and social responsibilities.

BUS 120 Introduction to e-Commerce**3 credits**

BUS 120 provides an introduction to electronic commerce—the business trend of the future. It covers definition of e-commerce, technology and software requirements, security issues, electronic payment and marketing strategies. It focuses on what to expect when creating a dot com as well as the business-to-business use of e-commerce.

BUS 204 Introduction to e-Business**3 credits**

BUS 204 introduces the use of technology in all aspects of a business. It explores the use of technology for customer relations' management, accounting and financial applications, purchasing and production tools, sales and marketing functions, and human resources management. Students examine the use of the Internet, World Wide Web and sophisticated multi-function software tools, while gaining a heightened awareness of emerging technologies and trends in e-business.

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. BUS 215 teaches how to approach and maximize this business opportunity. This course includes global e-marketing and promotion, import and export management, legal issues, and language and cultural issues.

BUS 216 Legal Environment of Business**3 credits**

BUS 216 emphasizes public law, regulation of business, ethical considerations, and various relationships existing within society, government, and business. Specific attention is devoted to economic regulation, social regulation, regulation and laws impacting labor/management issues, and environmental concerns. Students develop an understanding of the role of law in social, political, and economic change.

BUS 217 Business Communication and Report Writing**3 credits**

BUS 217 emphasizes effective business writing, and covers letters, memoranda, reports, application letters, and resumes. The course includes the fundamentals of business communication and an introduction to international communication.

BUS 226 Business Statistics**3 credits**

Prerequisite: Elementary Algebra

BUS 226 focuses on statistical study, descriptive statistics, probability, the binomial distribution, index numbers, time series, decision theory, confidence intervals, linear regression, and correlation. It is intended for business majors.

BUS 275 Special Topics**1-3 credits**

BUS 275 provides students with a vehicle to pursue special topics of interest in business. The content of this course is designed on an as needed basis to provide current, up-to-date information.

BUS 285 Independent Study**1-3 credits**

Prerequisite: Permission of instructor
BUS 285 meets the individual needs of students. Students engage in intensive study or research under the direction of a qualified instructor.

BUS 287 Cooperative Education**1-3 credits**

Prerequisite: Permission of instructor
BUS 287 provides students with the opportunity to supplement course work with practical work experience related to their educational program and occupational objectives. Students are placed at approved workstations related to their program of study. They work under the immediate supervision of experienced personnel at the business location and with the direct guidance of the instructor/coordinator.

CAD- Computer-Aided Design

www.rccc.edu/egt/

(See EGT for more listings)

CAD 105

AutoCAD for Interiors

4 credits

CAD 105 provides an opportunity for the Interior Design student to obtain the basic skills necessary to operate Computer Aided Design (CAD) software. AutoCAD software is emphasized.

CAD 110 Basic CAD

6 credits

CAD 110 serves all emphasis areas of engineering graphics. It 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.

CAD 119 Intermediate CAD I

3 credits

CAD 119 serves all areas of technical graphics. It includes producing two-dimensional working drawings using applications of geometric construction, intersection and development methods and animation techniques. Databases and file management systems are incorporated into the learning experience to improve and increase production time of technical drawings.

CAD 121 Intermediate CAD II

3 credits

Prerequisite: CAD 119 or equivalent
CAD 121 offers application of 2-D concept drawings that are created from given design parameters and appropriate specifications relative to the individual certificate or degree program. Concepts such as but not limited to data base management, using prototypes, paperspace/modelspace, XRefs, Wblocks, cross sections, auxiliary views, details.

CAD 123 Basic 3D CAD

3 credits

Prerequisite: CAD 121 or equivalent
CAD 123 serves all areas of technical graphics. Focuses on construction of three dimensional objects using the latest release of CAD software. It includes wireframe construction, surface modeling, solid modeling, extrusions, Boolean operations, 3-D editing, 3-D views, rendering, and 3-D to 2-D construction relative to certificate or degree problem.

CAD 202 Computer-Aided Drafting/3D

3 credits

Prerequisite: CAD 123 or equivalent
CAD 202 focuses on construction of three dimensional objects using the latest release of CAD software. It includes wireframe construction, surface modeling, solid modeling, extrusions, Boolean operations, 3-D editing, 3-D views, rendering, and 3-D to 2-D construction relative to certificate or degree program.

CAD 203 Pro/E Basic PT and Assembly Design

6 credits

Prerequisite: CAD background in 2-D/3-D applications is desirable
CAD 203 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 you will understand the basic functions needed to generate parts, assemblies and drawings along with the proper basic techniques.

CAD 204 Pro/E Drawing/ Detailing Fundamentals

6 credits

Prerequisites: CAD background in 2D/3D applications is desirable, and CAD 203 or equivalent.
CAD 204 introduces the 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.

CAD 206 Pro/E Advanced Applications

6 credits

Prerequisite: CAD background in 2D/3D desirable and CAD 203, 204, 205 or equivalent and instructor approval.
CAD 206 introduces various advanced applications of the design principles used in parametric design software, ranging from sheetmetal design, advanced Surfacing, Animation, Basic Mechanisms and Basic Manufacturing.

CAD 207 Pro/E Current Version Update

6 credits

Prerequisite: CAD background in 2D/3D or equivalent desirable, instructor approval
CAD 207 updates you to the most current release of Pro/E, showing any core user interface changes, menu changes and or module changes.

CAD 208 Pro/E Industry Upgrade

6 credits

Prerequisite: CAD background in 2D/3D desirable and CAD 203, 204, 205 or equivalent, approval of instructor.
CAD 208 updates you on the most current release of Pro/E, showing any core user interface changes, menu changes and/or module changes.

CAD 217 AutoDesk VIZ

6 credits

CAD 217 focuses on introductory level basic features of the software using the latest version of AutoDesk VIZ. It includes creation and modification of primitive and complex shapes, Boolean constructions, creation and modification of lights, applying materials to objects, creation and modification of backgrounds, creation and adjustment of cameras, rendering, and animation by keyframing.

CAD 218 AutoDesk VIZ / Advanced

6 credits

Prerequisite: CAD 217
CAD 218 builds on the basic 3-D Studio VIZ skills learned in CAD 218. It includes importing and editing solid models, external processes (special effects), incorporating scanned images, advanced materials editing, creating materials libraries, rendering, animating and project management.

**CAD 226 Architectural Desktop
6 credits**

Prerequisite: EGT 231 or equivalent
CAD 226 focuses on creation of production drawings using AutoDESK Architectural Desktop with an emphasis on 3-D concept design.

**CAD 231
Land Desktop/AutoDesk
3 credits**

CAD 231 focuses on the basic command structure and applications of civil mapping concepts utilizing a civil software, to include data collection files, symbols libraries, setting attributes, COGO, layer control, surface modules, road calc and site design. All course work is completed on a CAD system.

**CAD 235
Survey/AutoDesk
3 credits**

CAD 235 advances to techniques employed in the creation of civil engineering graphics. Communicating survey data to and from the field. Topics include: symbology, scales, mapping, computations, surveying notes, drawing plats, and roadway design.

**CAD 241 Inventor Basics
6 credits**

Prerequisites: 2-D/3-D CAD applications, permission of instructor.
CAD 241 focuses on the basic applications of Inventor software to build parametric models of parts and assemblies.

**CAD 242 Inventor Intermediate
6 credits**

Prerequisite: CAD 241 or equivalent
CAD 242 explores the intermediate applications of SolidWorks to create parametric models.

**CAD 243 Inventor Advanced
6 credits**

Prerequisite: CAD 242 or equivalent
CAD 243 focuses on advanced applications of Inventor to create parametric models.

**CAD 260
C.A.D. Project
2 credits**

CAD 260 focuses on a final computer aided drafting project in the student's area of special interest.

**CAD 256 SolidWorks Basics
6 credits**

Prerequisite: 2-D/3-D CAD applications, permission of instructor
CAD 256 examines the basics of SolidWorks software to produce parametric models.

**CAD 257 SolidWorks
Intermediate
6 credits**

CAD 257 teaches you to apply intermediate SolidWorks applications to produce parametric models of parts and assemblies.

**CAD 258 SolidWorks Advanced
6 credits**

Co-requisite CAD 259
CAD 258 demonstrates the advanced applications of SolidWorks software.

**CAD 285 Independent Study
1-6 credits**

Prerequisite: Permission of instructor
CAD 285 meets the individual needs of students. Students engage in intensive study or research under the direction of a qualified instructor.

CAR- Carpentry

www.rccc.edu/construction

**CAR 133 Construction Framing & Safety
4 Credits**

CAR 133 utilizes hands-on techniques to illustrate basic framing methods and materials. Floor/Wall/and Roof framing will be discussed/demonstrated and taught. There will be extensive utilization of modern and western residential framing methods. The course will also include 10 hours of OSHA approved safety instruction, which will qualify the student for their "10 hour safety card"

**CAR 134 Exterior Finishes and Trim
4 Credits**

CAR 134 utilizes hands-on techniques to illustrate exterior moisture, trim, and exterior doors and window installation. Student will explore various residential materials and methods. Estimation of time and material will be discussed as well as general business practices

**CAR 136 Remodeling, Renovation, and Additions
4 credits**

Prerequisite: CAR 133 or permission of Instructor
Car 136 covers conversions of attic and basement spaces to usable living spaces and additions for renovation to existing residential structures, including kitchens and baths. Examines materials scheduling, estimation, and construction methods.

**CAR 144 Interior Trim & Finish Methods
4 Credits**

CAR 144 utilizes hands-on techniques to illustrate basic interior finishing methods. This class guides the student through the techniques utilized in sheetrock, tape and texture, interior doors, and trim, and basic cabinet installation

**CAR 155 Interior Trim-Built-ins
4 Credits**

CAR 155 covers design and build processes for custom built-in cabinetry. Taken in conjunction with CAR156, this course explores the variety of materials and methods of work to create anything from closet storage shelves to a built-in entertainment center.

**CAR 156 Shop Tools: Stationary, Hand, and Portable
4 credits**

Car 156 covers the safe use and care of stationary, hand, and portable tools. This course is designed to help student develops skills through tool utilization to pass competency and safety tests for each tool. Student study standard practices for Bench Carpentry through the actual construction of a project.

**CAR 165 Shop Carpentry
4 credits**

Prerequisite: Permission of instructor
CAR 165 focuses on the non-site, shop carpenter and includes jig and pattern making, stationary power tool maintenance and adjustment, machining of woods, and techniques unique to shops, cabinetmakers and millworkers.

CAR 166 Stair Design & Construction

4 credits

Prerequisite: CAR 156 or permission of Instructor

CAR 166 focuses on both site and off-site stair lay-out and construction. Students have a chance to explore various techniques for building the stairs and millwork involved in the construction and installation of handrail assemblies.

CAR 253 Advanced Interior Trim - Cabinet/Countertops

4 credits

Prerequisite: CAR 156, or permission of instructor

CAR 253 emphasizes an in-depth/hands-on look at all components of cabinet-making, installation and countertops. It includes construction of traditional (face-frame) and European cabinets. It covers hardware applications and installation, and countertop construction, ranging from laminates to solid surface.

CAR 275 Special Topics

1-6 credits

Prerequisites: CAR 156 or permission of Instructor

CAR 275 provides students with a vehicle to pursue in depth exploration of special topics of interest

CAR 280 Technical Project

4-12 credits

Prerequisite: Permission of the instructor

CAR 280 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.

CAR 282 Internship

0.5-12 credits

Prerequisite: Permission of the instructor

CAR 282 provides students with prior course work an opportunity to apply their course studies.

CAR 285 Independent Study

0.5-12 credits

Prerequisite: Permission of the instructor

CAR 285 provides students the opportunity to work with the instructor on a specific area with specific objectives and a predetermined project completion date.

CHE- Chemistry

www.rccc.edu/science/chemistry

CHE 101 Introduction to Chemistry I with Lab

5 credits

Prerequisites: MAT 106

CHE 101 includes the study of measurements, atomic theory, chemical bonding, nomenclature, stoichiometry, solutions, acid and base, gas laws, and condensed states. Laboratory experiments demonstrate the above concepts qualitatively and quantitatively. This course is designed for nonscience majors, students in occupational and health programs, or students with no chemistry background.

CHE 111 General College Chemistry I with Lab

5 credits

Prerequisite: One year of high school chemistry or equivalent.

Co-requisite: MAT 121

CHE 111 focuses on basic chemistry and measurement, matter, chemical formulas, reactions and equations, stoichiometry and thermochemistry. This course covers the development of atomic theory culminating in the use of quantum numbers to determine electron configurations of atoms, and the relationship of electron configuration to chemical bond theory and molecular orbital theory. It includes gases, liquids, and solids. Problem solving skills are emphasized. This course incorporates laboratory experiments.

CHE 112 General College

Chemistry II with Lab

5 credits

Prerequisites: CHE 111, MAT 121

CHE 112 presents concepts in the areas of solution properties, chemical kinetics, chemical equilibrium, acid-base and ionic equilibrium, thermodynamics, electrochemistry, nuclear chemistry, and organic chemistry. This course emphasizes problem solving skills and descriptive contents for these topics. Laboratory experiments demonstrate qualitative and quantitative analytical techniques.

CHE 208 Introduction to Organic and Biochemistry with Lab

5 credits

Prerequisite: CHE 111 and CHE 112

CHE 208 introduces some of the major topics in modern organic chemistry and biochemistry, focusing on relating structure and behavior of molecules to their functions.

The chemistry of organic molecules based on their functional groups, proteins, carbohydrates and lipids is studied.

CHE 211 Organic Chemistry I with Lab

5 credits

Prerequisite: CHE 112

CHE 211 focuses on compounds associated with the element carbon. This course includes structure and reactions of aliphatic hydrocarbons and selected functional group families. This course covers nomenclature of organic compounds, stereochemistry, and reaction mechanisms such as SN1, SN2, E1 and E2. Laboratory experiments demonstrate the above concepts, plus the laboratory techniques associated with organic chemistry.

CHE 212 Organic Chemistry II with Lab

5 credits

Prerequisite: CHE 211

CHE 212 continues the investigation into the chemistry of carbon-based compounds, their reactions and synthesis. This course includes the structure, physical properties, reactivities, and synthesis of organic functional groups not covered in the first semester. It explores functional groups including alcohols, ethers, aromatics, aldehydes, ketones, amines, amides, esters, and carboxylic acids. CHE 212 includes reactions and reaction mechanisms of aromatic compounds. An introduction to biochemical topics may be included if time permits. Laboratory experiences demonstrate the above concepts and the laboratory techniques associated with organic chemistry.

CIS-Computer Information Systems

www.rccc.edu/cis

CIS 103 Learning Windows

1 credit

CIS 103 provides foundational skills in Windows operating system for personal use. This course is designed for the more mature learner and/or those students who wish to advance at a slower pace.

CIS 105 Learning E-mail and Internet

1 credit

CIS 105 provides foundational skills in email and internet applications for personal use. This course is designed for the more mature learner and/or the student who wishes to advance at a slower pace.

CIS 106 Learning Word

1 credit

CIS 106 provides foundational skills in Microsoft Word for personal use. This course is designed for the more mature learner and/or the student who wishes to advance at a slower pace.

CIS 108 Learning Excel

1 credit

CIS 108 provides foundational skills in Microsoft Excel for employment/personal development. This course is designed for the more mature learner and/or the student who wishes to advance at a slower pace.

CIS 118 Introduction to PC

Applications: MS Office

3 credits

CIS 118 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. This course is equivalent to taking CIS 131, CIS 141 and CIS 151.

CIS 128 Windows Complete

3 credit

CIS 128 introduces students to concepts, terminology and hands-on skills in the use of the operating system and Windows. It emphasizes navigation, file manipulation, file creation and troubleshooting.

CIS 130 Introduction to the Internet

1 credit

Prerequisite: A working knowledge of Windows

CIS 130 enhances the student's knowledge of the Internet and its resources. Individuals learn terminology in dealing with the Internet. It includes privacy and copyright issues with information retrieved from the Internet. Students experience the use of e-commerce, multimedia and e-mail. It explores searching the Internet and credibility of information obtained with searches.

CIS 131 Word Processing I: Word

1 credit

Prerequisite: CIS 128 or a working knowledge of Windows

CIS 131 introduces the features of word processing software packages. Topics include creating, editing, formatting documents, and the use of spelling dictionary and thesaurus. The student who has taken CIS 118, Introduction to PC Applications, should not take this course.

CIS 132 Word Processing II: Word

1 credit

Prerequisite: CIS 131

CIS 132 continues to build on word processing skills learned in CIS 131. Practice emphasizes hands on exercise skills such as hyphenation and columns format layout, document design, mail merge, tables, forms and graphics.

CIS 133 Word Processing III: Word

Word

1 credit

Prerequisite: CIS 132

CIS 133 continues to build on word processing skills learned in CIS 132. Topics include outlines, style sheets, macros, and large document formatting.

CIS 135 Complete PC Word Processing: Word

3 credits

Prerequisite: CIS 128 or a working knowledge of Windows

CIS 135 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 131, 132, and 133 taken separately.

CIS 140 Microsoft Outlook

1 credit

Prerequisite: None

CIS 140 introduces the functions used in Microsoft Outlook including email messages, calendaring, contacts, tasks, journals, and notes.

CIS 141 PC Databases I: Access

1 credit

Prerequisite: CIS 128 or a working knowledge of Windows

CIS 141 introduces the functions of a database. It includes skills such as file creation, searches, sorts, simple editing and indexing. The student who has taken CIS 118, Introduction to PC Applications, should not take this course.

**CIS 142 PC Databases II: Access
1 credit**

Prerequisite: CIS 141

CIS 142 continues to build on database application skills learned in CIS 141. Students practice through hands on exercise skills such as report writing and the creation of custom forms.

**CIS 143 PC Databases III: Access
1 credit**

Prerequisite: CIS 142

CIS 143 continues to build on database application skills learned in CIS 142. Course topics include creating a user interface, database, problem solving, and programming using macros to create automated used interfaces. Visual Basic for Applications is not covered.

**CIS 145 Complete PC Database:
Access
3 credits**

Prerequisite: CIS 128 or a working knowledge of Windows

CIS 145 introduces the operations of a PC database management system. Topics may include database design, table operations, searches, sorts, edits, queries, forms, and reports. Interfacing with other packages and creating a user interface are covered. Visual Basic for Applications is not covered. This course is the equivalent of CIS 141, 142, and 143 taken separately.

**CIS 151 PC Spreadsheets I: Excel
1 credit**

Prerequisite: CIS 128 or a working knowledge of Windows

CIS 151 introduces the student to concepts and applications of an electronic spreadsheet. Topics include calculations, built-in functions, spreadsheet design, and introduction to graphics. Additional topics may include tables and macros. The student who has taken CIS 118, Introduction to PC Applications, should not take this course.

**CIS 152 PC Spreadsheets II:
Excel
1 credit**

Prerequisite: CIS 151

CIS 152 continues to build on spreadsheet skills learned in CIS 151. Students practice through hands-on exercises such as design and report writing. Database features of filters, sorts and special calculations are also covered.

**CIS 153 Advanced Spreadsheets:
Excel
1 credit**

Prerequisite: CIS 152

CIS 153 presents the development and execution of macros to automate the spreadsheet, development of menu driven macros, "what if" tables, advanced functions/commands for using a statistical database, and formatting are covered.

**CIS 155 PC Spreadsheet
Concepts: Excel
3 credits**

Prerequisite: CIS 128 or a working knowledge of Windows

CIS 155 introduces the use of an electronic spreadsheet. Topics may include spreadsheet design, formatting, formulas, functions, charts, databases, statistical and "what if" analysis, and macros. This course is the equivalent of CIS 151, 152, and 153 taken separately.

**CIS 165 Complete Presentation
Graphics: PowerPoint
3 credits**

Prerequisite: CIS 128 or a working knowledge of Windows

CIS 165 focuses on the development of presentation graphics material including graphs, charts, illustrations and diagrams. Emphasis is on effective communication. Automated presentation with sound, video, and animation will also be covered.

**CIS 167 Desktop Publishing: MS
Publisher
3 credits**

Prerequisite: CIS 128 or a working knowledge of Windows

CIS 167 is designed to be a hands on course introducing the student to the concepts and techniques of desktop publishing. The student will then work with more complex documents and publications to utilize the advanced features and capabilities of today's page layout software.

**CIS 201 Computer Issues
1 credit**

Prerequisite: 8 credits of Computer Technology coursework

CIS 201 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 220 Fundamentals of UNIX
3 credits**

CIS 220 covers the structure and fundamentals of the UNIX operating system. Topics covered will include the files system and file processing, various utility programs, and shell, multi-user operation, text processing, and communications.

**CIS 221 UNIX Shellscripting
3 credits**

Prerequisite: CIS 220

CIS 221 continues building upon the skills and commands covered in CIS 220. An emphasis is made on more advanced shell scripting utilizing pipelines, filters, grep, awk, and file processing.

**CIS 240 Database Design and
Development
3 credits**

CIS 240 introduces the basic concepts of relational databases, data storage, and retrieval. It covers database design, data modeling, transaction processing, and introduces the Structured Query Language for databases.

CIS 251 Introduction to Structured Query Language (SQL)

3 credits

Prerequisite: CIS 145

CIS 251 introduces students to creating database structures and storing, retrieving, and manipulating data in a relational database. SQL is the set of statements that all users and programs must use to access data in the Oracle database. This course also focuses on SQL*Plus to manipulate SQL statements.

CIS 253 Programming with a MS SQL Server Database

3 credits

Prerequisite: CIS 251 or equivalent knowledge and experience

CIS 253 provides students with the technical skills required to program a database solution by using Microsoft SQL Server.

CIS 268 Systems Analysis and Design I

3 Credits

Spring Only except Online

Prerequisite: This course should be taken during the last semester of your certificate/degree program

CIS 268 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.

CIS 289 Capstone

3 credits

Spring Only except online

Prerequisite: Last semester of your certificate/ degree program

The purpose of CIS 289 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 skills that they bring to the course, the type of project that they participate in, and the roll they play on the project team.

CNG- Computer Networking

www.rccc.edu/cis

CNG 121 Computer Technician I: A+

4 credits

CNG 121 introduces personal computer hardware to gain the skills and knowledge for a successful entry-level computer service technician. This course provides extensive hands-on work with computer systems. It includes PC setup and configuration, floppy and hard drive installation and basic maintenance and troubleshooting. Successful completion prepares the student for the core hardware service technician portion of the CompTIAA+ Certification Exam.

CNG 122 Computer Technician II: A+

4 credits

Prerequisite: CNG 121

CNG 122 focuses on operating systems as well as installation of modems, tape backups, CD-ROM drives, and SCSI subsystems. This course covers operating systems, Windows 9x, Windows NT and Windows 2000 installation, configuration and upgrading. It includes laser printers and backup power systems. This course prepares the student for the CompTIAA+ OS Technologies Exam.

CNG 124 Networking I: Network+ 3 credits

Prerequisite: CNG 122 or comparable knowledge or experience

CNG 124 provides students with the knowledge necessary to understand, identify and perform necessary tasks involved in supporting a network. This course covers the vendor-independent networking skills and concepts that affect all aspects of networking, such as installing and configuring the TCP/IP. This course also prepares students for the Networking II: Network + course.

CNG 125 Networking II: Network+ 3 credits

Prerequisite: CNG 124

CNG 125 continues to provide students with the knowledge necessary to implement and support a network. This course focuses on the vendor-independent networking skills and concepts that affect all aspects of networking. The Networking I and II: Network + courses prepare students for the Network + certification.

CNG 211 Windows XP Configuration

3 credits

CNG 211 provides students with the knowledge and skills necessary to address the implementation and desk-top support needs of customers who are planning to deploy and support Microsoft Windows XP Professional in a variety of network operating system environments.

CNG 212 Manage MS Windows Server Environment

4 credits

CNG 212 provides students with the knowledge and skills that are required to manage accounts and resources, maintain server resources, monitor server performance, and safeguard data in a Microsoft Windows Server environment.

CNG 213 Implementing a MS Windows Network Infrastructure

4 credits

Prerequisite: CNG 212

CNG 213 provides students with the knowledge and skills to implement and manage a Microsoft Windows Server network infrastructure. Students will learn to implement routing; implement and manage Dynamic Host Configuration Protocol (DHCP), Domain Name System (DNS), and Windows Internet Name Service (WINS); secure Internet Protocol (IP) traffic with Internet Protocol security (IPSec) and certificates; configure a network access infrastructure, manage and monitor network access.

CNG 214 Plan a MS Windows Server Network Infrastructure

4 credits

Spring Only

Prerequisite: CNG 213

CNG 214 provides students with the knowledge and skills necessary to plan and maintain a Windows Server network infrastructure. Students will learn to Plan optimize and troubleshoot a TCP/IP physical and logical network, routing, Dynamic Host Configuration Protocol (DHCP), Domain Name System (DNS) Windows Internet Naming Service (WINS) and IPsec network access.

CNG 216 Plan MS Windows Server Active Directory Infrastructure

4 credits

Spring Only

Prerequisite: CNG 214

CNG 216 provides students with the knowledge and skills to successfully plan, implement, and troubleshoot a Microsoft Windows Server Active Directory service infrastructure. The course focuses on a Windows Server directory service environment, including forest and domain structure, Domain Name System (DNS), site topology and replication, organizational unit structure and delegation of administration, Group Policy, and user, group, and computer account strategies.

CNG 217 Implement Security in a MS Windows Environment

3 credits

Spring Only

Prerequisite: CNG 213

CNG 217 provides students with the knowledge to implement, manage, maintain, and troubleshoot security in a Microsoft Windows Server network infrastructure and also plan and configure a Windows Server PKI.

CNG 221 Design MS Director and Network Infrastructure

3 credits

Spring Only

Prerequisite: CNG 216

CNG 221 provides students with the knowledge and skills to design an Active Directory service and network infrastructure for a Microsoft Windows Server environment. The course is intended for systems engineers who are responsible for designing directory service and/or network infrastructures.

CNG 226 Implementing and Managing Microsoft Exchange

3 credits

Spring Only

Prerequisite: CNG 213

CNG 226 is designed to teach students the knowledge and skills necessary to install, configure, and administer Microsoft Exchange. Students will learn to use Exchange in medium to very large computing environments that typically have multiple physical locations, mixed client connection protocols, and internet messaging connectivity.

CNG 227 Administering a Microsoft SQL Server Database

3 credits

Spring Only

Prerequisite: CNG 212

CNG 227 provides students with the knowledge and skills required to install, configure, administer, and troubleshoot the client-server database management system of Microsoft SQL Server.

CNG 260 Cisco Network Associate I

5 credits

CNG 260 (CCNA1: Networking Basics) is the first of the four courses leading to the Cisco Certified Network Associate (CCNA) certification. CCNA 1 introduces Cisco Networking Academy Program students to the networking field. The course focuses on network terminology and protocols, local-area networks (LANs), wide-area networks (WANs), Open System Interconnection (OSI) models, cabling, cabling tools, routers, router programming, Ethernet, Internet Protocol (IP) addressing, and network standards.

CNG 261 Cisco Network Associate II

5 credits

Prerequisite: CNG 260

CNG 261 (CCNA2: Routers and Routing Basics) is the second of four CCNA courses leading to the Cisco Certified Network Associate (CCNA) certification. CCNA 2 focuses on initial router configuration, Cisco IOS software management, routing protocol configuration, TCP/IP, and access control lists (ACLs). Students will develop skills on how to configure a router, manage Cisco IOS Software, configure routing protocols, and create access lists controlling access to the router.

CNG 262 Cisco Network Associate III

5 credits

Prerequisite: CNG 261

CNG 262 (CCNA3: Switching Basics and Intermediate Routing) is the third of four courses leading to the Cisco Certified Network Associate (CCNA) certification. The course focuses on advanced IP addressing techniques including Variable Length Subnet Masking (VLSM), Intermediate routing protocols (RIPv2), single-area OSPF, EIGRP, command-line interface configuration of switches, Ethernet switching, Virtual LANs (VLANs), Spanning Tree Protocol (STP), and VLAN Trunking Protocol (VTP).

CNG 263 Cisco Network Associate IV

5 credits

Prerequisite: CNG 262

CNG 263 (Cisco CCNA4: WAN Technologies) is the last of four courses leading to the Cisco Certified Network Associate (CCNA) certification. The course focuses on advanced IP addressing techniques (Network Address Translation (NAT), Port Address Translation (PAT), and DHCP), WAN technology and terminology, PPP, ISDN, DDR, Frame Relay, Network Management, and introduction to optical networking. In addition, the student will prepare for taking the CCNA exam.

COM - Communication

COM 105

Career Communications

3 credits

COM 105 develops skills needed in obtaining and keeping a job. It includes job searching, applications, resumes, interviews, and the dynamics of customer, peer, and managerial relationships. It emphasizes speaking, writing, listening, critical reading skills, and vocabulary development essential to the employment world.

COM 126

Communication In Healthcare

3 credits

COM 126 familiarizes the student with interactive concerns in settings related to patient-client care. The course includes discussions of diverse cultures, client interaction and family/care-giver issues. The student will also address the concerns of attitude, office politics, teamwork, self-initiative and conflict management as specifically experienced in the patient and client setting.

CMD 160

Introduction to Human Communication Disorders

3 credits

CMD 160 surveys identifying characteristics, causes, diagnosis and treatment of hearing disorders and speech-language problems, including stuttering, voice disorders, articulation/phonological disorders, child language disorders, and neurogenic disorders.

CMD 260

Introduction to Phonetics

2 credits

CMD 260 introduces characteristics of American English speech sounds and the International Phonetic Alphabet symbols used to represent them. Normal phonological development is also covered.

CMD 265

Physiological and Biological Acoustics

2 credits

Pre-requisite: College level reading and math skills

CMD 265 introduces the physics of sound as it relates to speech and hearing including the acoustic and physiologic information underlying the chain of events between speakers and listeners. This course includes linguistic organization, the physics of sound, speech production, sound measurement, acoustic characteristics of speech, and speech perception.

CMD 266

Normal Language Development

3 credits

CMD 266 discusses the study of normal speech and language development and their relationship to other aspects of child development and childhood disabilities.

CMD 267

3 credits

Anatomy and Physiology of the Speech and Hearing Mechanism

Prerequisite: CMD 160

CMD 267 is designed to introduce the student to the systems, anatomical and functional, that enable us to speak and hear. This includes the respiration, phonation, resonance, articulation, and hearing systems. Within each functional system the nervous, muscular (including ligament and cartilage) and skeletal involvement are discussed.

CON- Construction Technology

www.rccc.edu/construction

CON 105 Construction Technology

4 credits

CON 105 explores a variety of software applications available for the construction trade. Introduces computer applications such as Word, Excel, PowerPoint, scheduling, estimating, and accounting programs.

CON 110 Introduction to Construction

3 credits

CON 110 explores the expanding array of careers within the construction industry. Students will be exposed to the construction industry through job site tours, hands-on experience, and classroom activities. Math and science applications will be established through the academic integration of the job-site experience and the classroom theory.

CON 120 Building Materials and Environmental Impact

3 credits

CON 120 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, vinyl and aluminum and their applications in construction process. It explores Built- Green products and their characteristics.

CON 128 Introduction to Cost Estimation

2 credits

CON 128 provides an overview of the estimation process. Bid requirements, and package are discussed along with an introduction to the CSI divisions.

CON 140 Introduction to Building Codes and Enforcement

3 credits

CON 140 introduces the basic concepts of code enforcement.

CON 145 Construction Project Management I

2 credits

CON 145 covers the principles of project planning, scheduling, estimating and management. The participant learns the basic skills required to supervise personnel, with the introduction of technologies as they become commonly accepted.

CON 146 Construction Project Scheduling

2 credits

CON 146 covers the principles of project planning & scheduling. Techniques and Tools and techniques for effective scheduling are introduced and investigated. The participant learns the basic skills required to supervise personnel, with the introduction of technologies as they become commonly accepted. Several case studies are included.

CON 151 Introduction to the Construction Process

2 credits

CON 151 provides an overview of the construction process and is designed as either a primer course for CON 251, or as an introduction to the construction process for the owner-contractor. This course covers liens, contracts, building permits, and licensing.

CON 156 Building Permits/Licensing

4 credits

Co-requisite: CON 151

CON 156 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.

CON 207 Light Construction Equipment

3 credits

CON 207 covers construction equipment, and cost choices based upon size of job vs. cost of equipment rental or ownership. Course covers maintenance issues associated with various equipment and specialization.

CON 228 Estimating II

4 credits

CON 228 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.

CON 230 Blueprint Reading

4 credits

CON 230 introduces students to reading and interpreting blueprints for residential, commercial and 142 opportunities, options, excellence

CON 231 Construction Ethics

3 credits

CON 231 covers aspects of the trade and how to assure an ethical approach is taken when dealing with owners/customers, contractors, and suppliers. Discussion is encouraged and required as many aspects will have several points of view. Industry standards, customer expectations, warranty issues, and bid practices are all topics which will be discussed.

CON 240 Code Compliance II

3 credits

CON 240 prepares students to successfully complete the building inspector exam. Course studies building codes and enforcement practices.

CON 241 Overview of International Codes

4 credits

CON 241 provides a general overview of the 11 codes promulgated by the International Code Council for the purpose of providing regulations for the building industry.

CON 242 Residential and Non-Residential Plan Review

3 credits

CON 242 provides a step-by-step procedure for reviewing construction documents for compliance with the nonstructural and structural requirements of the 2000 International Building Code. It covers the procedure for reviewing residential plans and specifications based on the 2000 International Residential Code.

CON 245 Project Management

4 credits

CON 245 covers the principles of project planning, scheduling, estimating and management. Emphasizes the basic skills required to supervise personnel. It includes case studies.

CON 251 Construction Process

4 credits

CON 252 covers the entire construction process including liens, contracts, bids, specifications, building permits and licensing, inspections and the Uniform Building Code. Introduces intra-trade coordination, remodeling and additions, construction practices, construction management and supervision, scheduling, solar building techniques, insulation concerns and multi-unit construction.

CON 252 Owner-Built Homes and Owner Contracting

4 credits

Prerequisite: CON151 or CAR136

CON 252 explores the issues of the owners/ builders building 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. Examines the problems and common pitfalls of the owner-built home.

CON 259 Heavy/Highway Construction Supervisor Overview

2 credits

CON 259 introduces the skills necessary to make a successful transition from construction craftsman to supervisor focusing on heavy/highway specialists. This course is designed for journeymen, leadmen and foremen who aspire to become construction supervisors. Key topics include leadership, motivation, communication, problem solving, decision making, cost awareness, planning and organizing, production control, accident prevention and contract documents. (Overview unit of Associated General Contractors of America Supervisory Training Program)

CON 260 Construction Supervisor Overview

2 credits

CON 260 introduces the skills necessary to make a successful transition from construction craftsman to supervisor, focusing on building projects. This course is designed for journeymen, leadmen and foremen who aspire to become construction supervisors. Key topics include leadership, motivation, communication, problem solving, decision making, cost awareness, planning and organizing, production control, accident prevention and contract documents. (Overview unit of Associated General Contractors of America Supervisory Training Program)

CON 261 Leadership and Motivation for Construction Supervisors

2 credits

CON 261 introduces basic management ideas, principles and skill that will enable the student to immediately function more effectively in everyday management of a crew on a construction project. This course includes the role of the construction supervisor, motivational strategies, positive discipline, leadership styles, and team building. (Unit 1 of AGC Supervisory Training Program)

CON 262 Oral and Written Communication for Construction Supervisors

2 credits

CON 262 presents the fundamental principles of communication, with emphasis on sorting, facilitating and managing the flow of information that construction supervisors encounter in their daily work. The course includes nonverbal communication, listening, negotiating, giving effective directions, building consensus, writing and fundamentals of electronic communication. (Unit 2 of AGC Supervisory Training Program)

CON 263 Problem Solving and Decision Making for Construction Supervisors

2 credits

CON 263 will teach the student to identify common problems and how they occur in the construction industry. The course includes defining the role of the construction supervisor in problem identification, problem solving, and decision making to prevent problems. (Unit 3 of AGC Supervisory Training Program)

CON 264 Contract Documents and Construction Law for Construction Supervisors

2 credits

CON 264 will develop a basic understanding of contract documents and construction law as they impact the construction supervisor. Learn how to use them to solve problems, resolve issues and remedy conflicts. Understand the rights and responsibilities of the construction supervisor as defined by this information. (Unit 4 of AGC Supervisory Training Program)

CON 265 Planning and Scheduling for the Construction Supervisor

2 credits

CON 265 the student will learn to plan the sequence, duration and relationship of activities for a construction process. Understand how to communicate the plan to contractual parties and to use the plan as a reference point for examining project changes. The course includes planning for safety, organization, manpower and site layout. (Unit 5 of AGC Supervisory Training Program)

CON 266 Understanding and Managing Project Costs for Construction Supervisors

2 credits

CON 266 will teach the student to become familiar with how construction project estimates are compiled, how to compare actual project costs with those estimated, methods to control the costs to meet the estimate, and how to apply lessons learned to future projects. (Unit 6 of AGC Supervisory Training Program)

CON 267 Accident Prevention and Loss Control for Construction Supervisors

2 credits

CON 267 will teach the student to understand how basic safety and health principles increase productivity, competitive position and profitability. Learn how the construction supervisor can directly impact the bottom line by understanding and applying basic principles of accident prevention and loss control. Course includes moral and personal obligations toward safety, basics of insurance, cost considerations of safety and methods to create a safe working environment. (Unit 7 of AGC Supervisory Training Program)

CON 268 Managing the Project, the Construction Supervisor's Role

2 credits

CON 268 will teach the student to develop an understanding of the supervisor's role in the application of business management functions to a construction project. Topics include: pre-planning, staffing, production, cost and risk control, subcontractor coordination, purchasing and project closeout. (Unit 8 of AGC Supervisory Training Program)

CON 269 Productivity Improvement for Construction Supervisors

2 credits

CON 269 will teach the student to organize a construction project with productivity improvement as a goal is the focus of this course. Topics include calculating and measuring work productivity, work improvement analysis, understanding work worker ability and the impact of environmental factors, implementing and monitoring improvement programs. (Unit 9 of AGC Supervisory Training Program)

CRJ- Criminal Justice

www.rccc.edu/criminal

CRJ 101 Basic Law Enforcement Academy

8 credits

Prerequisite: Permission of academy director

CRJ 101 conforms to P.O.S.T. standards and state certification requirements as well as the basic skills and knowledge necessary to perform the entry level duties of a police officer. Emphasis will be on simulating actual situations using a lecture and laboratory mode of learning.

CRJ 102 Basic Law Enforcement Academy II

6 credits

Prerequisite: Permission of academy director

CRJ 102 conforms to P.O.S.T. standards and state certification requirements as well as the basic skills and knowledge necessary to perform the entry level duties of a police officer. Emphasis will be on simulating actual situations using a lecture and laboratory mode of learning.

CRJ 103 Basic Law Enforcement Academy III

2 credits

Prerequisite: Permission of academy director

CRJ 103 enhances the standards established by the P.O.S.T. Board and state certification requirements, as well as the basic skills and knowledge necessary to perform the entry level duties of a police officer. Emphasis will be on expanding the P.O.S.T. curriculum to create a unique learning experience.

CRJ 104 Basic Law Enforcement Academy IV

1 credit

Prerequisite: Permission of academy director

CJR 104 enhances the standards established by the P.O.S.T. Board and state certification requirements, as well as the basic skills and knowledge necessary to perform the entry level duties of a police officer. Emphasis will be on expanding the P.O.S.T. curriculum to create a unique learning experience.

CRJ 105 Basic Law

6 credits

Prerequisite: Requires special application.

CRJ 105 covers constitutional and procedural consideration affecting arrest, search and seizure, and civil liability. It includes the Colorado criminal, liquor, controlled substance, and children's codes. Emphasizes victim's rights and courtroom testimony.

CRJ 106 Arrest Control Techniques

3 credits

Prerequisite: Permission of academy director.

CRJ 106 covers the skills, knowledge and abilities necessary to effectively maintain control of a suspect when making an arrest. Emphasizes the continuum of force and de-escalation of force.

CRJ 107 Law Enforcement Driving

3 credits

Prerequisite: Permission of academy director.

CRJ 107 covers the skills, knowledge and abilities required for operation of a law enforcement vehicle. Emphasizes defensive driving. Enables students to demonstrate skills by driving a vehicle under simulated conditions.

CRJ 108 Firearms

3 credits

Prerequisite: Permission of academy director

CRJ 108 discusses the skills, knowledge and abilities necessary to safely use police firearms. Students will demonstrate skills by firing weapons on a firing range. The student will demonstrate basic safety techniques and will explain the firearms role within the continuum of force.

CRJ 110 Intro to Criminal Justice

3 credits

CRJ 110 introduces a study of the agencies and processes involved in the criminal justice system: the legislature, the police, the prosecutor, the public defender, the courts, and corrections. It includes an analysis of the roles and problems of the criminal justice system in a democratic society, with an emphasis upon inter-component relations and checks and balances.

CRJ 111 Substantive Criminal Law

3 credits

Prerequisite: CRJ 110

CRJ 111 teaches legal definitions of crime, purposes and functions of the law, historical foundations, and the limits of the criminal law.

CRJ 112 Procedural Criminal Law

3 credits

Prerequisite: CRJ 110

CRJ 112 covers constitutional and procedural considerations affecting arrest, search and seizure, post-conviction treatment, origin, development, philosophy, and constitutional basis of evidence. Focuses on degrees of evidence and rules governing admissibility, judicial decisions interpreting individual rights, and an analysis of case studies from arrest through final appeal.

CRJ 116 Civil Liability

3 credits

Prerequisite: CRJ 110

CRJ 116 covers the origin and jurisdiction of civil action, procedure and responsibility addressing the liability of criminal justice practitioners.

CRJ 118 Report Writing

3 credits

Prerequisite: CRJ 110

CRJ 118 identifies the areas of concern in regards to proper documentation of police related activities. Focuses on report writing skills, proper structuring of interviews and chronological documentation of events. Incorporates proper sentence structuring, the use of correct terminology and accuracy in written reports.

CRJ 125 Law Enforcement Operations

3 credits

Prerequisite: CRJ 110

CRJ 125 examines the complexity and multidimensional aspects of the law enforcement role and career; law enforcement discretion; law enforcement values and culture in modern America. It covers the role and functions of law enforcement in occupational, social, political and organizational context.

CRJ 126 Patrol Procedures**3 credits**

Prerequisite: CRJ 110

CRJ 126 focuses on an in-depth study of the basic knowledge and skills required of a peace officer to safely and effectively accomplish the patrol procedure.

CRJ 135 Judicial Function**3 credits**

Prerequisite: CRJ 110

CRJ 135 examines the criminal process with an analysis of the major judicial decision makers, i.e., prosecutors, defense attorneys, judges, and the discretionary aspects of adjudication.

CRJ 145 Correctional Process**3 credits**

Prerequisite: CRJ 110

CRJ 145 focuses on 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, CRJ 135 and CRJ 145

CRJ 146 introduces an analysis of community based correctional programs and procedures. Emphasizes the environment and the relationship to public safety, reintegration and punishment.

CRJ 150 Victims of Crime and**Trauma 3 credits**

Prerequisite: CRJ 110

CRJ 150 introduces you to the role the crime victim plays in the criminal justice system. The traditional response that a crime victim receives from the system will be studied and the psychological, emotional and financial impact these responses have on victimization will be analyzed.

CRJ 151 Domestic Violence**3 credits**

Prerequisites: CRJ 110 and CRJ 150

CRJ 151 examines theories, issues, legal strategies, and intervention applicable to abuse in intimate relationships.

CRJ 152 Sexual Assault**3 credits**

Prerequisite: CRJ 110 and CRJ 150

CRJ 152 examines sexual assault beginning with definitions and describing the degrees of sexual assault and the penalties and realities of punishment. It covers myths, statistics, services, treatment and prevention. Both the rapist and the adolescent offender are profiled. Emphasizes the pro-active approach with regard to prevention.

CRJ 153 Violence Against Children**3 credits**

Prerequisites: CRJ 110 and CRJ 150
CRJ 153 includes an in-depth study of physical, sexual, and emotional abuse and neglect of children. Focuses on identification and treatment of abusive families and victims of abuse and the response of the legal system, the community, and human service agencies.

CRJ 190 Financial Investigation**3 credits**

Prerequisite: CRJ 110

CRJ 190 introduces current perspectives dominant in the field of financial investigations. It includes concepts of law and evidence, sources of information, including financial institutions, business financial record keeping, tracing funds using a variety of methods, and interviewing as applied to detecting and resolving financial crimes. Emphasizes theoretical principles and applications of financial investigative techniques.

CRJ 210 Constitutional Law**3 credits**

Prerequisite: CRJ 110

CRJ 210 focuses on the powers of government as they are allocated and defined by the United States Constitution. It includes intensive analysis of United States Supreme Court decisions.

CRJ 216 Juvenile Law and Procedures**3 credits**

Prerequisite: CRJ 110

CRJ 216 focuses on an in-depth analysis of the socio-legal operation of the juvenile justice system emphasizing the substantive and due process rights of minors. It includes analysis of legal reasoning underlying the juvenile law as it operates all levels of government.

CRJ 218 Drug**Investigative Strategies****3 credits**

Prerequisite: CRJ 110

CRJ 218 focuses on laws dealing with gambling, prostitution, sex crimes, and narcotics. Emphasizes special techniques employed in the detection, suppression, and apprehension of violators. It includes effects of drugs and narcotics, identification of narcotics, and terminology.

CRJ 220 Human**Relations and Social Conflict****3 credits**

Prerequisite: CRJ 110

CRJ 220 highlights the environmental, organizational and socio-psychological dimensions of social control. It includes the study of individual attitudes, beliefs and behavior involved in role conflicts, community relations and conflict management in the social structure.

CRJ 225 Crisis Intervention**3 credits**

Prerequisites: CRJ 110 and CRJ 150

CRJ 225 provides information and application of crisis theories in working with diverse populations. Examines the interventionist role.

CRJ 230 Criminology**3 credits**

Prerequisite: CRJ 110

CRJ 230 examines the question of crime causation from legal, social, political, psychological and theoretical perspectives. It covers the history and development of criminology.

CRJ 235 Delinquent Behavior**3 credits**

Prerequisite: CRJ 110

CRJ 235 focuses on the adolescent who violates social and legal norms and the consequences for the individual and society. Emphasizes the social and psychological factors influencing individual delinquent patterns.

CRJ 239 Managing Emergency Worker Stress

3 credits

Prerequisite: CRJ 110, CRJ 150

CRJ 239 provides an understanding of trauma reaction and stress management for first line responders, i.e., police officers, victim advocates, paramedics and firemen. Focuses on practical application of coping skills and stress management for first line responders.

CRJ 240 Criminal Investigations

3 credits

Prerequisite: CRJ 110

CRJ 240 introduces investigation methods and procedures from preliminary through the follow-up stages.

CRJ 245 Interview and Interrogation

3 credits

Prerequisite: CRJ 110

CRJ 245 focuses on the study of technical and legal approaches used in gathering desired information from victims, witnesses, and suspects. Examines the fundamental characteristics of questioning and the use of psychological influences.

CRJ 246 Traffic Investigation

3 credits

Prerequisite: CRJ 110

CRJ 246 provides an overview of the skills and concepts necessary to complete an accurate investigation of a traffic collision. Emphasizes traffic management concepts, selective traffic enforcement, and safety issues.

CRJ 255 Organizational Management of Correctional Institutions

3 credits

Prerequisite: CRJ 110

CRJ 255 focuses on 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

CRJ 256 focuses on the process through which the custodial, educational, vocational and treatment needs of the offender are determined.

CRJ 269 Adult Survivors of Molestation

3 credits

Prerequisite: CRJ 110, CRJ 150

CRJ 269 provides the potential victim advocate with the latest treatment modalities for victims who are adult survivors of childhood molestation. The course will also focus on the possible long term destruction mannerisms (Post Traumatic Stress Disorder) as well as the immediate trauma. Discussion will focus on how this type of crime can impact its victims' physical, mental, and emotional attitudes, thereby affecting their personal and professional lives.

CRJ 275 Special Topics

1-6 credits

Prerequisite: Some topics may be restricted to criminal justice practitioners.

CRJ 275 provides students with a vehicle to pursue in-depth exploration of special topics of interest.

CRJ 280 Internship

1-6 credits

Prerequisite: Permission of internship and CRJ coordinators.

CRJ 280 provides placement in the criminal justice field to integrate theory with practice.

CRJ 285 Independent Study

1-6 credits

Prerequisite: Permission of instructor.

CRJ 285 meets the individual needs of students. Students engage in intensive study or research under the direction of a qualified instructor.

CRJ 289 Capstone

1 credit

CRJ 289 provides a demonstrated culmination of learning within a given program of study.

CSC- Computer Science

www.rccc.edu/cis

CSC 119 Introduction to Programming

3 credits

CSC 119 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.

CSC 154 Introduction to MS Visual Basic .NET (OOP)

3 credits

Prerequisite: CSC 119 or equivalent experience or permission of instructor
CSC 154 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 syntax, 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

4 credits

Prerequisite: MAT 106 Survey of Algebra, equivalent experience, or permission of instructor

CSC 160 will introduce students to the discipline of computer science. Topics covered will include algorithm development, data representation, arithmetic and logical expressions, sub-programs and input/output operations using a structured programming language. Intensive computer laboratory activities are required. Object-oriented techniques will also be emphasized.

CSC 161 Computer Science II **4 credits**

Prerequisite: CSC 160 or equivalent experience or permission of instructor
CSC 161 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** **Spring Only**

Prerequisite: CSC 160 or equivalent experience or permission of instructor
CSC 165 prepares students for a fundamental understanding of computing and computer science. Topics covered will include set theory, Boolean algebra, relations, functions, graph theory and techniques for formal reasoning.

CSC 240 Java Programming **3 credits**

Prerequisite: CSC 160 or equivalent experience or permission of instructor
CSC 240 is an introduction to the Java programming language and will cover 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 248 Java Internet Programming **3 credits**

CSC 248 covers Java programming in the internet environment. It focuses on server-side programming and covers network programming, database connectivity, server programming, multimedia and Java beans.

CSC 250 Programming with Microsoft ADO .NET **3 credits**

Prerequisite: CSC 154, CSC 261, or equivalent experience or permission of instructor
CSC 250 teaches students to build data-centric applications and Web services with Microsoft ADO.NET, Microsoft SQL Server and the Microsoft .NET Framework. This course includes designing and building data-centric, distributed applications.

CSC 251 Programming in Visual Basic .NET **3 credits**

Prerequisite: CSC 154 or equivalent experience or permission of instructor
CSC 251 provides students with the knowledge and skills needed to develop Microsoft .NET-based applications by using Visual Basic .NET. Focuses on Visual Basic .NET (a significant upgrade to Visual Basic) and incorporates new features and framework goals of the .NET architecture. This course enables the student to create enterprise applications for the .NET Platform and to create more traditional Visual Basic applications that take advantage of the enhancements to the language.

CSC 253 MS ASP .NET Web Application Development **3 credits**

Prerequisite: CSC 251 or CSC 261
CSC 253 will teach programmers and beginning Web developers the fundamentals of Web application site implementation by using Microsoft ASP.NET and Microsoft Visual Basic .NET. This course focuses on using the Microsoft Visual Studio .NET environment and the Microsoft .NET platform to create an ASP.NET Web application that delivers dynamic content to a website

CSC 254 AS/400 E-Business Development for WebSphere Application Server **3 credits**

Prerequisite: Permission of Instructor or AS/400 Experience or Equivalent Knowledge
CSC 254 students learn to develop Java Servlets that can run under IBM's WebSphere Application Server, on IBM iSeries 400 or AS/400 servers, the world's most secure and reliable HTTP servers, under OS/400. Students learn how to use IBM's Developer Tools, such as WebSphere 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, accessing the server using any web browser. Students learn how to include data from IBM iSeries 400 DB2 UDB databases in your web pages using Java servlets technology to create "dynamic" web page content.

CSC 261 Programming in C# .NET **3 credits**

Prerequisite: CSC 160 or equivalent experience or permission of instructor
CSC 261 provides students with the knowledge and skills they need to develop C# applications for the Microsoft .NET Platform. This course focuses on C# program structure, language syntax, and implementation details.

CSC 262 VS.NET Application Development: VB & C# **3 credits**

Prerequisite: CSC 251, CSC 261, or equivalent experience
CSC 262 provides C# programmers with the skills required to create Windows Forms applications by using the .NET Framework. The course will cover the major topics for Windows client application programming on the .NET Framework. These topics include: Windows Forms, GDI+, simple data access, interoperating with unmanaged code, threading and asynchronous programming issues, simple remoting, Web access, Web Services consumption, debugging, security, and deployment issues for desktop applications.

CSC 263 MS ASP .NET XML Web Service Development

3 credits

Prerequisite: CSC 262

CSC 263 provides students with the knowledge and skills that are required to develop XML Web services-based solutions to solve common problems in the distributed application domain. The course focuses on using Microsoft Visual Studio .NET, Microsoft ASP.NET, and Universal Description, Discovery, and Integration (UDDI) to enable students to build, deploy, locate, and consume Extensible Markup Language (XML) Web services.

CSC 264 Building COM+ Applications using MS .NET Enterprise Services

3 credits

CSC 264 provides students with the knowledge and skills to effectively build scalable, distributed applications that use Microsoft .NET Enterprise Services and the Microsoft .NET Framework.

CSC 265 Assembly Language Programming

3 credits

Spring Only

Prerequisite: CSC 119

CSC 265 is designed to teach assembly language programming on the (platform). Topics covered will include executable files, screen processing, string instructions, arithmetic (Binary/ASCII/BCD) operations, table processing and macros.

CWB- Computer Web

www.rrcc.edu/web

CWB 110 Complete Web Authoring: HTML

3 credits

Prerequisite: CIS 130 and CIS 128, or a working knowledge of Windows

CWB 110 explores a complete set of web authoring skills using HTML (Hypertext Markup Language). Topics include links, backgrounds, controlling text and graphic placement, tables, image maps, frames, forms and CSS (Cascading Style Sheets).

CWB 115 Web Design Fundamentals

3 credits

Prerequisite: CIS 130 and CWB 110, or working knowledge of HTML

CWB 115 is an introduction to the development of web pages using structured design to layout pages. Topics may include text manipulation, cross-platform calibration, graphics formats, data tables, and file downloading requirements.

CWB 130 Complete Web Editing Tools: Dreamweaver

3 credits

Prerequisite: CWB 110 and CIS 128, or a working knowledge of Windows

CWB 130 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.

CWB 162 Image Editing I: Photoshop

3 credits

Fall Only

Prerequisite: CIS 128 or a working knowledge of Windows

CWB 128 provides an introduction to digital graphics. The course emphasizes image processing and special effects. Chemical free darkroom and illustration techniques are studied along with graphics/text integration.

CWB 164 XML

3 credits

Prerequisite: CWB 110 or a working knowledge of HTML including CSS

CWB 164 is designed to teach the student how 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: JavaScript

3 credits

Prerequisite: CSC 119, CWB 130 and one programming language or permission of instructor

CWB 205 explores the complete set of web scripting skills needed to develop Web Applications. Topics include variables, data types, arithmetic operations, logical operations, looping, creating and reading cookies, creating an array, displacing data based on a cookie value, setting flags, working with frames, creating objects in a hidden frame, using the History Object, writing HTML to another window, determining browser, and directing keystrokes.

CWB 208 Web Application Development: ColdFusion

3 credits

Prerequisite: CWB 110 or a working knowledge of HTML Knowledge of a database is recommended

CWB 208 is designed to teach the student a basic overview of ColdFusion, URI Parameters, Strings, and other data types. The student will also have the opportunity on control in Cold Fusion, form handling, databases and SQL. Other topics include data retrieval, application framework, reusing code and building a complete Web application.

CWB 245 Complete Web Animation: Flash

3 credits

Fall Only except Online

Prerequisite: CSC 119 or CSC 160; CWB 110 and CWB 162 are recommended, or permission of instructor CWB 245 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, preliminary Generator discussion, and preloaded sequences, and integration of 3D objects, and a high-end project.

CWB 246 Advanced Web Animation: Flash

3 credits

Spring Only

Prerequisite: CWB 245 or permission of instructor

This course is an advanced topics study of the Flash r/6 authoring tool, Flash's scripting language Action Script, and the complex functions of the Macromedia Flash .swf file format. The main objective of the course is the exposure to advanced interactivity, design and coding principles

CWB 262 Image Editing II: Photoshop

3 credits

Spring Only

Prerequisite: CWB 162

This course covers advanced features of Adobe Photoshop, including advance image editing and image preparation for the Web. Topics include color management, color correction, photographic retouching, effects, file formats, optimization, ImageReady, animated gifs, image maps and slicing.

DAN- Dance

DAN 121 Jazz I

1 credit

DAN 121 introduces the basic techniques and vocabulary of jazz dance and the basic elements of dance. Focuses on movement oriented dance, comprised of warm-up exercises, center combinations, traveling combinations and cool down. May be repeated for a maximum of three credits.

DAN 130 Dance Sampler

1 credit

DAN 130 introduces the beginning dancer to popular dances through a social dance sampler in Salsa, Swing, and Country Western Dance technique, footwork, body posturing, rhythms, and dance floor etiquette. Examines a variety of dances such as Salsa's Mambo, Cha-Cha, and Rumba; Swing's Lindy Hop (jitterbug); and Country Western's Two Step, Cowboy Waltz, Cotton-Eyed Joe and various Country Western line dances.

DAN 141 Regional Dances

1 credit

DAN 141 introduces the basic terminology, techniques and routines of several dances from a specific country or region. Focuses on the music, costumes and customs related to the dances studied. Partners are not required. May be repeated for a maximum of three credits.

DAN 142 Regional Dances II, Latin American Ballroom

1 credit

DAN 142 continues DAN 141 with focus on regional dances, customs and rhythms. Partners are not required. May be repeated for a maximum of three credits.

DAN 143 Tap I

1 credit

DAN 143 introduces basic tap dance movements and techniques. The shuffle, ball change, brush, flap heel drop, stomp and stamp step are covered.

DAN 151 Belly Dance I

1 credit

DAN 151 presents belly dance - the oldest dance form known to humankind and a celebration of life. Emphasizes developing balance and enables the student to perform a belly dance and learn the history of belly dance and costuming techniques.

DAN 152 Belly Dance II

1 credit

DAN 152 continues DAN 151, with emphasis on coordination and balance and additional techniques. It includes costume design.

DAN 154 Dance and Stage Movement

3 credits

DAN 154 introduces students to the basic elements of modern dance and to the potential of dance and stage movement as a means of communication.

DAN 224 Dance for Musical Theatre

3 credits

Prerequisites: DAN 154 or permission of instructor.

DAN 224 introduces students to dance within the context of musical theatre. Enables you to practice non-verbal communication and expressive movement techniques.

DAN 275 Special Topics

1-6 credits

DAN 275 provides students with a vehicle for in-depth exploration of special topics of interest.

ECE Early Childhood Education

ECE 101 Introduction to Early Childhood Education

3 credits

ECE 101 provides an introduction to Early Childhood Education. It includes 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; and Administration and Supervision. This course focuses on birth through age eight.

ECE 102 Introduction to Early Childhood Lab Techniques

3 credits

ECE 102 is a lab course that includes both a classroom seminar and placement in a child care setting. The supervised placement provides the student with the opportunity to observe children, to practice appropriate interactions, and to develop effective guidance and management techniques. This class addresses birth through age 8.

ECE 103 Guidance Strategies for Children

3 credits

ECE 103 explores guidance theories, applications, goals, techniques, and factors that influence expectations, classroom management issues, and pro-social skills from birth through age 8.

ECE 111 Infant and Toddler Theory and Practice**3 credits**

ECE 111 presents an overview of theories, applications (including observations), and issues pertinent to infant and toddler development in group and/or family settings. It also includes the state mandated infant and toddler requirements for licensing, health, safety, and nutrition issues.

ECE 112 Intro to Infant/Toddler Lab Techniques**3 credits**

ECE 112 is a lab course that includes both a classroom seminar and placement in an infant and/or toddler setting. The supervised placement provides the student with the opportunity to observe, to practice appropriate interactions, and to develop effective guidance and nurturing techniques with infants and/or toddlers. The class addresses ages prenatal through age 2.

ECE 125 Science/Math and the Young Child**3 credits**

ECE 125 examines theories of cognitive development as a framework for conceptualizing the way young children acquire scientific and mathematical skills, concepts, and abilities. It enables students to research and develop appropriate individual and group scientific/mathematical activities for young children.

ECE 126 Art and the Young Child**2 credits**

ECE 126 prepares students to plan and implement a comprehensive and developmentally appropriate art program for young children. Additionally, the student will investigate the development of self-taught art techniques in young children.

ECE 127 Music/Movement for the Young Child**1 credit**

ECE 127 focuses on the purposes of incorporating music and movement into the early childhood curriculum. Through active participation with hands-on experiences, students work with the concepts of age and developmental appropriateness when designing fun activities with both subjects.

ECE 191 School Age Theory and Practice**3 credits**

ECE 191 emphasizes processes for planning and implementing developmentally appropriate environments and experiences in school age programs working with children ages 6 to 12 years of age. It also includes expression and problem-solving skills in school age children.

ECE 192 School Age Lab Techniques**3 credits**

ECE 192 incorporates lab experience in before/after school, summer camp, or elementary school programs. The class focuses on planning and implementing developmentally appropriate curriculum for school age children and includes assisting the supervising teacher in all activities.

ECE 205 Nutrition, Health and Safety**3 credits**

ECE 205 focuses on nutrition, health and safety as key factors for optimal growth and development of young children. It includes nutrient knowledge, menu planning, food program participation, health practices, management and safety, appropriate activities and communication with families around these issues. This course addresses information from before birth through age 8.

ECE 220 Curriculum Development: Methods and Techniques**3 credits**

ECE 220 provides an overview of early childhood curriculum development. It includes processes for planning and implementing developmentally appropriate environments and experiences, selection of appropriate materials, and quality in early childhood programs.

ECE 225 Language and Cognition for the Young Child**3 credits**

Prerequisite: ECE or PSY 238 or permission of instructor

ECE 225 examines theories of cognitive and language development as a framework for conceptualizing the way children acquire thinking skills. It addresses observation, planning, facilitation, creative representation, and evaluation strategies within the context of play with a focus on language, science, math, problem solving, and logical thinking. Ages addressed are birth through age eight.

ECE 226 Creativity and the Young Child**3 credits**

ECE 226 provides an emphasis on encouraging and supporting creative self expression and problem solving skills in young children. It explores creative learning theories and research and focuses on developmentally appropriate curriculum strategies in all developmental domains. Ages addressed are birth through eight.

ECE 228 Language and Literacy**3 credits**

ECE 228 presents strategies for optimum language development, literacy, and the social/emotional development which supports acquisition of these skills. It addresses children's language and literacy in home, classroom, and community settings and provides appropriate teacher/child verbal interactions, classroom environments, and activities. Ages addressed are birth through eight.

ECE 237 Theories and Techniques of Social and Emotional Growth**3 credits**

Prerequisite: ECE 238 and ECE 220
ECE 237 incorporates student specific techniques and strategies for guiding and enhancing the social and emotional growth of children 0-8 years. The class introduces and compares the theories and theorists underlying quality interactions and patterns of social and emotional progression.

ECE 238 Child Growth and Development**4 credits**

ECE 238 covers the growth and development of the child from conception through the elementary school years. It examines the physical, cognitive, language, social and emotional domains and the concept of the whole child. It also addresses how adults can provide a supportive environment for optimum growth and development.

ECE 240 Administration of Early Childhood Care and Education Programs**3 credits**

Prerequisite: ECE 101 or permission of Instructor

ECE 240 examines Colorado's minimal licensing requirements, as well as optimal standards pertaining to the operation of programs for young children ages birth to eight. The focus is on the director's administrative skills and role as a community advocate for young children.

ECE 241 Admin: Human Relations for Early Childhood Professions**3 credits**

ECE 241 focuses on the human relations component of an early childhood professional's responsibilities. Topics include director staff relationships, staff development, leadership strategies, parent-professional partnerships, and community interaction.

ECE 256 Working with Parents, Families, and Community Systems**3 credits**

ECE 256 examines attitudes and family values systems and how they affect parent-professional partnerships. It addresses communication, problem-solving, and conflict resolution strategies. The student will learn how to plan effective activities and programs for parent involvement in facilities serving children birth to age eight.

ECE 260 Exceptional Child**3 credits**

Prerequisite: ECE 238 or permission of instructor

ECE 260 presents an overview of typical and atypical developmental progression. It includes planning techniques, learning strategies, legal requirements, and accommodations and adaptations that are necessary in order to create an integrated classroom environment for a child with a wide range of exceptionalities. This course focuses on birth through age twelve.

ECE 275 Special Topics**1-6 credits**

ECE 275 explores current topics, issues, and activities related to one or more aspects of the early childhood care and education profession.

ECO- Economics**ECO 101 Economics of Social Issues****3 credits**

ECO 101 examines the major socio-economic issues of the past century. It covers poverty and growth, education, health care, pollution and discrimination.

ECO 201 Principles of Macroeconomics**3 credits**

ECO 201 focuses on the study of the American economy, stressing the interrelationships among household, business, and government sectors. The class explores saving and investment decisions, unemployment, inflation, national income accounting, taxing and spending policies, the limits of the market and government, public choice theory, the Federal Reserve System, money and banking, and international trade. (Suggested Pre-requisite: MAT 121).

ECO 202 Principles of Microeconomics**3 credits**

ECO 202 studies the firm, the nature of cost, and how these relate to the economy as a whole. The class analyzes economic models of the consumer, perfect competition, monopoly, oligopoly and monopolistic competition. It explores economic issues including market power, population growth, positive and negative externalities, income distribution, poverty and welfare, discrimination, and international economic interdependence. (Suggested Pre-requisite: MAT 121).

ECO 287**Cooperative Education/Internship****1-6 credits**

To be arranged with instructor.

EDU - Education**EDU 101 CRLA Tutor Certification - Regular****1 credit**

EDU 101 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.

EDU 102 CRLA Tutor Certification - Advanced**1 credit**

EDU 102 presents an extension of EDU 101 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.

EDU 103 CRLA Tutor Certification - Master**1 credit**

EDU 103 presents an extension of EDU 102 and continues the study of effective tutoring skills. Topics include learning strategies for specific subject areas, intercultural communication, and group facilitation.

EDU 110 Overview of Special Populations for Paraeducators

3 credits

EDU 110 provides students with knowledge in the areas of: laws and history of special education; roles and responsibilities of paraeducators; planning for students with disabilities; typical and non-typical developmental stages of children and youth; basic learning concepts; cognitive, communicative, physical and affective needs of students with disabilities; understanding people with disabilities; transition, job coaching; and how to teach students self-advocacy skills.

EDU 151 Literacy Intervention for Paraeducators

3 credits

EDU 151 is an introduction to the 5 components of Scientifically Based Reading Research: Phonemic Awareness, Alphabetic Principle, Fluency, Vocabulary Development, and Comprehension. This course will provide an overview of research-based practices and concepts in multi-sensory instruction for reading and provide the participants with a systematic and sequential scope and sequence of the reading process and a lesson plan format.

EDU 152 Math Interventions for Paraeducators

3 credits

EDU 152 focuses on the best practices of teaching mathematics, particularly in intervention situations. This includes knowledge of national, state, and district mathematics, content standards, process standards, approaches to teaching mathematics, literature connections, and proper use of manipulatives and assessment. There is a content focus on number and operation.

EDU 153 ESL and Cultural Issues for Paraeducators

3 credits

EDU 153 provides an introduction to multicultural education and the issues facing students whose primary language is not English. The topics will be covered with the perspective of paraprofessionals in mind. The class will examine culture as a framework through which our identities are shaped, and we will explore the sociopolitical aspects of cultural identity and how they influence attitudes, approaches, and educational systems. Topics include institutional racism, discrimination, and deficit views of particular racial and ethnic groups and of English language learners.

EDU 221 Introduction to Teacher Education

3 credits

EDU 221 will study the historical, social, political, philosophical, cultural, legal and economic forces that shape the United States public school system as they explore teaching as a career choice. Topics will include current issues of educational reform, technology as it relates to education and considerations related to becoming a teacher in the state of Colorado. Special interest will be paid to the topic of diversity in the K-12 school system

EDU 275 Field Based Experience

1 credit

EDU 275 provides students with experiences in the "real world" of the classroom and gives them input for wise and early career choices.

EDU 261 Teaching, Learning and Technology

3 credits

EDU 261 prepares students to integrate technology into their teaching curriculum. It enables the student to design educational and training materials incorporating instructional technology. This course explores a variety of technologies, including the computer, Internet, multimedia, graphics, audio, and text with an emphasis on increasing learning through their use. It examines combining technology with a variety of instructional methodologies.

EDU 242 Expressive Arts in the Elementary Classroom

3 credits

EDU 242 explores the integration of visual arts, music, and physical education/movement into the self-contained elementary classroom curriculum based upon the theory of multiple intelligences. The course familiarizes the student with the Colorado Model Content Standards for each area and basic curriculum development.

EDU 240 Teaching the Exceptional Learner

3 credits

EDU 240 focuses on the individual differences and modifications that are necessary in the educational practices of the exceptional learner.

EDU 275 Multicultural Education

1 credit

EDU 275 focuses on the need to recognize and understand the similarities and differences among people and develop a respect for all individuals and groups. This class will study the special learning needs of children from different racial, ethnic, cultural and socioeconomic groups and the need to integrate multicultural/diversity teaching into the school curriculum.

EGT - Engineering Graphics Technology

(See CAD for more listings)

EGT 210 Framing Methods

3 credits

EGT 210 emphasizes applications of current building methods as applied to 3-D residential concept models.

EGT 211 Roof Design

3 credits

Prerequisite: EGT 210 or equivalent
EGT 211 focuses on applications of current residential roof framing methods as applied to 3-D residential concept models.

EGT 230 Drafting and Design I
6 credits

Prerequisite: CAD 202 or equivalent
EGT 230 develops a fundamental understanding of concept design using 2D and 3D drawings and pertinent design data relative to the AAS degree emphasis or advanced applications for industry upgrade.

EGT 231 Drafting and Design II
6 credits

Prerequisite: EGT 230 or equivalent
EGT 231 examines ideas, sketches and layouts to create working drawings of a customized design relative to certificate of degree program. Projects require full documentation details and presentation of graphics and documentation.

EGT 240 Assembly and Detail
GD&T**3 credits**

Prerequisite: CAD 123 or equivalent
EGT 240 focuses on 3-D assembly drawings created from individual data bases. Assemblies are built using WBlock and XRef applications. Production drawing is created using the 2D extractions from the 3D model. Presentation methods are also demonstrated.

EGT 241 Mechanisms and Drives
3 credits

Prerequisite: EGT 240 or equivalent
EGT 241 emphasizes the applications of 3D drawing of a variety of mechanisms and drives to 3D assembly drawings. 3D animation and rendering methods are created for a more realistic presentation drawing.

EIC— Electricity - Industrial/ Commercial/ Residential

www.rccc.edu/constructiontech

**EIC 100 Electrical Constructions
and Planning****4 credits**

EIC 100 introduces the planning of electrical system installations from blueprints to the completed job, preparation of material lists, job sheets and time schedules for various phases of construction. Emphasizes the National Electrical Code.

**EIC 104 Basics of Industrial
Electricity****1.5 credits**

EIC 104 focuses on 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**

EIC 105 focuses on 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

EIC 110 covers residential building wiring in conformance with the current National Electrical Code and local codes using nonmetallic cable. Emphasizes proper use of tools and safety.

EIC 120 Electrical Installation II
4 credits

EIC 120 Prerequisite: EIC 110 or permission of instructor
EIC 120 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****1 credit**

EIC 124 focuses on training that is 100% practical and deals with every important aspect of OSHA's electrical safety-related work practices and how they apply. Teaches the safe installation and maintenance of electrical equipment. It covers the use of personal protective equipment.

EIC 130 National Electrical Code I
4 credits

EIC 130 focuses on the National Electrical Code and local code requirements for electrical installation. It covers chapters one through four of the National Electrical Code.

**EIC 134 Life Safety Code (Nfpa
72)****4 credits**

EIC 134 addresses new and existing buildings with specific requirements that directly influence the safety of people and protection of property and equipment. Designed for inspectors, managers, engineers, architects, building owners and insurers, manufacturers including fire suppression and alarm systems, and others in the building-related field.

EIC 135 National Electrical Code II

4 credits

EIC 135 builds on course 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

EIC 144 prepares you in the latest technology and techniques available for code and standards-compliant grounding and bonding systems. This course focuses on grounding and bonding requirements as they relate to Article 250 and other articles of the NEC. The course covers installation, testing and inspection procedures for eleven power systems. This course includes rules to minimize the risk of electricity as a source of electric shock, and as an ignition source for fires.

EIC 150 DC Circuit Fundamentals

4 credits

Prerequisite: EIC 105, MAT 107 or equivalent

EIC 150 covers the principles of DC electricity and magnetism with emphasis on Ohm's, Kirchoff's and Watt's laws to analyze circuits voltage current and power. It will address common measuring instruments and safety.

EIC 155 AC Circuit Fundamentals

4 credits

EIC 155 emphasizes 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. It covers the principles of AC electricity, magnetism, inductive and capacitive circuits; use of phasors to represent AC quantities; the concept of reactive volt-amperes and power factor; and use of instruments, including VOM's and oscilloscopes. It explores the principles of polyphase alternating current systems, Wye and Delta circuit configurations, and safety procedures will be explored.

EIC 160 Electrical Instruments and Measurements

4 credits

Prerequisite: EIC 105 or permission of instructor.

EIC 160 covers the proper techniques for using electrical instruments, including volt/ohm, amp, phase-rotation, oscilloscopes and recording meters. Focuses on instrument transformers for journeymen and in-plant electricians.

EIC 164 Intro to Indust Electronics

1.5 credits

EIC 164 emphasizes 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 165 Solid State Devices and Circuits

4 credits

EIC 165 explores the basic properties of diodes, transistors, triacs, SCRs and other solid state devices. It covers applications of solid state devices in control and power conversion and the circuits in equipment likely to be encountered in power installations.

EIC 166 Tuning Ddc/ Process Cont. Loops

1.5 credits

EIC 166 investigates process characteristics and process control loops to learn quick and proper controller adjustment for good response. It includes defining proportional band, integral and derivative, formal open and closed loop tuning methods, and advances control methods. Enables you to use computer simulation software to learn the concepts of proportional band, integral and derivative and practice different tuning methods.

EIC 167 Electrical Maintenance

4 credits

EIC 167 introduces students to common electrical repairs, electrical systems, tools and test equipment. It includes replacing or repairing devices such as receptacles, light fixtures and ballasts, circuit breakers, fuses and switches. Addresses electrical safety and code applications.

EIC 168 Maintenance Management

1 credit

EIC 168 covers the critically important but often overlooked component of maintenance management. Focuses on the implementation of a maintenance program or improvement of an existing program. It covers how to reduce unscheduled overtime, excessive material costs, and the number of breakdown repairs

EIC 169 Electrical Code Calculations

4 credits

EIC 169 discusses calculations used in the application of the National Electrical Code. Emphasizes sizing of branch circuit and feeder conductors and calculating ratings of protective devices

EIC 205 Advanced Electrical Planning

4 credits

EIC 205 explores the planning and layout of large commercial and industrial electrical installations.

EIC 210 Advanced National Electrical Code

4 credits

Prerequisite: EIC 130, 135 or permission of instructor

EIC 210 is an Advanced National Electrical Code course for the in-plant technician. The course emphasizes interpret NEC rules that apply to industrial/commercial installations. Maintenance electricians and residential wiremen desiring to upgrade their knowledge of these rules can benefit from this class.

EIC 215 Advanced Code Calculations

4 credits

Prerequisite: EIC 169, or permission of instructor

EIC 215 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/commercial situations are also explored. Sizing of transformers and power factor correction calculations are discussed as well.

EIC 217 Electrical Estimating/Costing**4 credits**

EIC 217 focuses on the fundamentals of electrical estimating, material takeoffs from prints, required labor hours, material loss allowances and scheduling to ensure orderly work progress.

EIC 220 Industrial Electrical Controls I**4 credits**

Prerequisite: EIC 105 or permission of instructor

EIC 220 studies the application of electrical and electromechanical sensing/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 Control Circuits**1.5 credits**

EIC 221 bridges the gap between the theoretical knowledge and the critical thinking skills needed on the job. Incorporates working at a troubleshooting station with circuits that are identical to motor control circuits in a plant. Concentrates exclusively to teaching hands-on troubleshooting.

EIC 222 Intro. Instr. and Process Control**1.5 credits**

EIC 222 investigates theory of industrial instrumentation measurement through process control. It includes theory and measurement, methods for temperature, pressure, level and flow. Incorporates hands-on training equipment to measure temperature and pressure and perform calibration of a pressure differential transmitter. Enables you to construct a closed loop and tune the loop. Test equipment is used to simulate a two-wire transmitter and source a current signal for calibration of an I/P transducer.

EIC 224 Understanding PLC's**1.5 credits**

EIC 224 improves the individual's ability to read, interpret and analyze electrical ladder drawings. Acquaints you with the basic electromechanical components commonly used in electrical control circuits, as well as solid-state relays and the role of programmable controllers.

EIC 225: Programmable Controllers**4 credits**

Prerequisite: EIC 105 and 220 or permission of instructor.

EIC 225 studies the use of solid-state control equipment, primarily the programmable controller and associated solid-state sensors to control equipment, machinery or complete processes. It includes 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. Enables you to design, implement and test control systems in the laboratory to meet specifically- assigned control problems. Emphasizes accuracy, safety and National Electrical Code requirements.

EIC 226 PLC Controllers Advanced**1.5 credits**

Prerequisite: EIC-224 or Permission from instructor

EIC 226 studies the advanced uses and applications of programmable logic controllers toward automated equipment, machines and processes. It includes understanding the functions of PLC hardware components, converting relay logic to ladder logic, comprehending ladder logic instruction functionality and identifying the PLC's data structure. Enables you to create, implement and troubleshoot ladder logic programs that simulate automated machine control and processes.

EIC 227 Mechanical Drives**1.5 credits**

EIC 227 covers the basics of mechanical drives including chain drives, belt drives, bushings, couplings, gear drives, bearings, and lubrication. It includes power transmission physics, shafts, keyways and keyseats, prime movers, gearing, chain drives, belt drives, bushing couplings, bearings, lubrication, clutches, brakes and torque limiters, mechanical variable speed drives.

EIC 229 AC and DC Variable-Speed Drive**1.5 credits**

EIC 229 teaches variable speed drive technology that offers a cost effective method to match driver speed to load demands and represents a state-of-the-art opportunity to reduce operating costs and improve overall productivity. Focuses on variable speed drive technology including operation, set-up, troubleshooting, maintenance, proper selection and application for drives and basic drive overview and comparison.

EIC 231 Electro-Pneumatic Training 1.5 credits.

EIC 231 introduces the real world of pneumatic and electro-pneumatic control and power transmission through a powerful interactive training program. Focuses on the full scope of compressed air production, preparation, and distribution. Through hands-on learning, you learn to apply simple gas laws, reading of symbols and understanding of component technologies.

EIC 234 High Voltage Elect. Safety**1 credit**

EIC 234 incorporates the latest technological equipment to include demonstrations with participant interaction as well as hands-on lab exercises. Addresses basic operational theory and the actual operation of various types of AC and DC motors. This is an entry-level course, so prior electrical experience is desired but not required.

EIC 240 Fire Alarm Fundamentals 4 credits

EIC 240 covers terminology, symbols, diagrams, devices, circuits and wiring. Focuses on basic layouts and principles involved in fire alarm system design and construction.

EIC 241 Advanced Fire Alarm Systems

4 credits

Prerequisite: EIC 240

EIC 241 covers design, installation, documentation, testing, and codes. Focuses on advanced layout and principles involved in fire alarm system design and construction. Allows students to test for NICET II certification

EIC 242 National Fire Alarm Code
4 credits

EIC 242 covers Fire Alarm Code (NFPA72) and local codes terminology, symbols, diagrams, devices, circuits, and the wiring of fire alarm systems. The basic code layouts and principles involved in fire alarm design and construction also will be addressed. Students testing for NICET certifications can benefit from this class.

EIC 250 Fiber Optics Training
1.5 credits

EIC 250 introduces the theory of fiber optics including standards, installation, connectorization, mechanical/fusion splicing, and testing through advanced procedures in troubleshooting, repair, and certification. Serves as the non-vendor dependent certification course for levels 1, 2, and 3. Focuses on building real world fiber networks with extensive hands on certification and written exams that prepare students for the versatility of actual work environments.

EIC 251 Fiber Optics Advanced
1.5 credits

EIC 251 offers advanced study in the theory of fiber optics including standards, installation, connectorization, mechanical/fusion splicing, and testing through advanced procedures in troubleshooting, repair, and certification. Serves as a non-vendor dependent certification course for levels 1, 2, 3. Focuses on building real world fiber networks with extensive hands on certification and written exams that prepare students for the versatility of actual work environments.

EIC 252 Comprehensive Structured Cabling
3 credits

EIC 252 combines the Fiber Optics Certification and Structured Cabling Certification classes into a comprehensive study of cabling systems

EIC 253 Fiber Optics Certification
1 credit

EIC 253 introduces the theory of fiber optics including standards, installation, connectorization, mechanical/fusion splicing and testing through advanced procedures in troubleshooting, repair and certification. Serves as a non-vendor dependent certification course for levels 1, 2 and 3. Focuses on building real world fiber networks with extensive hands on certification and written exams that prepare students for the versatility of actual work environments.

EIC 254 Telephony
1.5 credits

EIC 254 prepares individuals new to the telecommunications industry or new to positions requiring a basic knowledge of voice and data communications systems, networks and terminology. Focuses on understanding current networking alternatives and the impact on business decisions and opportunities.

EIC 255 Electrical Issues for Telecommunications
0.5 credit

EIC 255 examines Telecom/Data com system installation with electrical systems including pathways, distribution and supply, grounding and bonding, UPS and lighting. It explores improvements and new technologies and enables the telecom/data com professional to assess and secure an overview of the communications industry convergence with the electrical field.

EIC 256 Structured Cabling Systems Distribution Certification
1.5 credits

EIC 256 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 257 Certification for Residential Voice/Data System Network
1.5 credits

EIC 257 trains the contractor/installer in design, estimation, installation, troubleshooting and certification of complex residential structured cabling systems. Emphasizes home automation, complex office electrical systems and A/V contractors. It includes the use of network simulators.

EIC 258 Voice Data Cat Distribution
1 credits

EIC 258 focuses on voice/data coaxial distribution certification for residential, multioccupant, commercial and campus structured cabling systems.

EIC 259 LAN Certification/ Repair/ Troubleshooting
1 credit

EIC 259 explores the testing, repair, certifying and troubleshooting of LAN using network distribution simulators to diagnose twisted repairs, coax and fiber.

EIC 261 Project Management
1 credit

EIC 261 covers the critically important but often overlooked component of construction - project management. It includes 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 262 Specification Analysis for Cabling Systems
0.5 credit

EIC 262 focuses on avoidance of problems and unanticipated expenses on cabling projects for estimators, contractors and suppliers through an organized analysis of the project specifications.

EIC 263 Specification Writing for Structured Cabling Systems**1 credit**

EIC 263 teaches the writing of specifications for structured cabling systems. Examines the job layout, products used and execution of the project. Focuses on establishing good working relationships with customer, installation contractor and product supplier.

EIC 264 Cabling System Grounding and Bonding**1 credit**

EIC 264 prepares students in the latest technology and techniques available for code and standards compliant grounding and bonding systems. Enables you to learn correct procedures in order to comply with applicable codes and standards.

EIC 268 Fiber Optic Networks**2 credits**

EIC 268 introduces the theory of fiber optics including standards, installation, connectorization, mechanical/fusion splicing and testing through advanced procedures in troubleshooting, repair and certification. Serves as a non-vendor dependent certification course for levels 1, 2 and 3. Focuses on building real world fiber networks with extensive hands on certification and written exams that prepare students for the versatility of actual work environments.

EIC 275 Special Topics**0.5-12 credits**

Prerequisite: Permission of instructor
EIC 275 provides students with a vehicle to pursue in depth exploration of special topics of interest.

EIC 282 Internship**0.5-12 credits**

Prerequisite: Permission of instructor
EIC 282 provides students with the opportunity to supplement coursework with practical work experience related to their educational program. Students work under the immediate supervision of experienced personnel at the business location and with the direct guidance of the instructor.

EIC 285 Independent Study**0.5-12 credits**

Prerequisite: Permission of instructor
EIC 285 meets the individual needs of students. Students engage in intensive study or research under the direction of a qualified instructor

EIC 289 RCDD Exam Prep Course**2 credits**

EIC 289 focuses on 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. This RCDD exam preparation course should be taken prior to the BICSI RCDD exam.

EMP- Emergency Management and Planning

www.rccc.edu/emplan**EMP 101 Principles of Emergency Management****3 credits**

EMP 101 presents a broad overview of an emergency management system and the importance of an integrated approach to managing emergencies.

EMP 105 Emergency Planning**3 credits**

EMP 105 introduces a specialized type of community planning that identifies local government strategies, resources and responsibilities for protecting citizens from the effects of disasters and other major emergency events.

EMP 106 Exercise Design and Evaluation**3 credits**

EMP 106 provides knowledge and the development of skills that enable the student to train a staff and to conduct an exercise that tests a community's plan and its operational response capability.

EMP 107 Emergency Operations Center and Communications**3 credits**

EMP 107 provides the knowledge and skills to manage and operate an EOC during crisis situations.

EMP 109 Incident Command**3 credits**

EMP 109 explores the dynamics of managing major emergency incidents and examines the National

EMP 240 Leadership and Influence**3 credits**

EMP 240 examines the dynamics of leadership techniques as it applies to emergency and disaster situations.

EMP 241 Decision Making and Problem Solving**3 credits**

EMP 241 enables the student to clearly identify a problem and its causes in order to determine the appropriate type of decision making style.

EMP 242 Effective Communication**3 credits**

EMP 242 sharpens presentation and media skills of emergency management officials when giving and receiving information in emergency management contexts.

EMP 244 Developing Volunteer Resources**3 credits**

EMP 244 improves skills in recognizing volunteer resources in the community, and enhances the ability to manage the involvement of volunteers in all phases of emergency management.

EMP 247 Decision Making in a Crisis**3 credits**

EMP 247 focuses on individual and group decisions based on a model problem-solving process.

EMP 280 – Business Emergency Management

3 credits

EMP 280 develops contingency planning and emergency response skills required by private sector companies.

EMP 291 - Basic Public Information Officer

3 credits

EMP 291 provides the student an opportunity to practice and expand on public information skills in a crisis environment.

EMS- Emergency Medical Services

www.rccc.edu/ems

EMS 115 First Responder

3 credits

EMS provides the student with core knowledge and skills to function in the capacity of a first responder arriving at the scene of an emergency, providing supportive care until advanced EMS help arrives.

EMS 125 Emergency Medical Technician – Basic

9 credits

Prerequisite: Permission of instructor
Co-requisite: EMS 170

EMS 125 enables the student, after successful completion of this course, to take the National Registry EMT-Basic certification examinations as required by the Colorado Department of Health and Environment. Student must be at least 18 years of age.

EMS 126 Emergency Medical Technician – Basic Refresher

3 credits

Prerequisites: Current CPR card; current or less than 36 months expired EMT Basic certification; permission of instructor

Co-requisite: None, if EMT-Basic certification is current or less than 60 days expired. Co-requisite: EMS 170, if EMT-Basic certification is greater than 60 days expired.

EMS 125 provides required didactic and skills review for renewing EMT students and accommodates the needs of the re-entry EMT student.

EMS 130 Emergency Medical Technician Intravenous Therapy

2 credits

Prerequisite: Current Colorado State EMT Basic certification; permission of instructor.

EMS 130 focuses on cognitive and skill practice as required by Colorado Prehospital Care Program for EMT Basic level IV approval. Examines criteria, procedures and techniques for IV therapy, discusses fluid and electrolyte balance and principles and treatment for shock.

EMS 170 EMT-Basic Clinical

1 credit

Prerequisite: Permission of instructor
Co-requisite: EMS 125 or 126

EMS 170 provides the EMT student with the clinical experience required of initial and some renewal processes.

EMS 214 Basic Trauma Life Support

1 credit

Prerequisite: EMT-Basic or higher certification

EMS 214 provides students with information and skill practice to treat trauma patients in the prehospital environment.

The following courses are offered in conjunction with hospital-based paramedic programs. Only students accepted into those programs may register for them. Prerequisites for those programs normally include successful completion of an EMT Basic course, IV approval, Basic EKG interpretation, Anatomy and Physiology, and approximately one year of experience as an EMT-Basic. Contact an EMS faculty advisor for more information.

EMS 225 Fundamentals of Paramedic Practice

3 credits

EMS 225 serves as the first course of the National Standard Paramedic Curriculum as approved by the Colorado State Department of Health and Environment.

EMS 226 Fundamentals of Paramedic Practice Lab

2 credits

EMS 226 serves as the lab experience to coincide with EMS 225 topics.

EMS 227 Paramedic Special Considerations

3 credits

EMS 227 focuses on a comprehensive study of Advanced Life Support Practice.

EMS 228 Paramedic Special Considerations Lab

2 credits

EMS 228 serves as the lab experience for those students enrolled in EMS 227.

EMS 229 Paramedic Pharmacology

3 credits

EMS 229 focuses on a comprehensive study of emergency pharmacology.

EMS 230 Paramedic Pharmacology Lab

2 credits

EMS 230 serves as the required lab course in the paramedic education program.

**EMS 231 Paramedic Cardiology
5 credits**

EMS 231 addresses cardiology topics as presented in the National Standard Curriculum for paramedics.

**EMS 232 Paramedic Cardiology
Lab****1 credit**

EMS 232 incorporates a hands-on application of principles of cardiac care in the pre-hospital environment.

**EMS 233 Paramedic Medical
Emergencies****4 credits**

EMS 233 focuses on a comprehensive study of adult and pediatric medical emergencies.

**EMS 234 Paramedic Medical
Emergencies Lab****1 credit**

EMS 234 focuses on a clinical study of adult and pediatric medical emergencies.

**EMS 235 Paramedic Trauma
Emergencies****4 credits**

EMS 235 focuses on a comprehensive study of adult and pediatric trauma emergencies.

**EMS 236 Paramedic Trauma
Emergencies Lab****1 credit**

EMS 236 serves as a lab presenting various acute trauma scenarios.

**EMS 237 Paramedic Internship
Preparatory****2 credits**

EMS 237 reviews concepts and techniques used in the prehospital setting.

**EMS 280 Paramedic Internship I
6 credits**

EMS 280 serves as the preceptor/internship program for paramedic students.

**EMS 281 Paramedic Internship II
6 credits**

EMS 281 serves as the continuation of EMS 280, preceptor program for paramedic students.

ENG- English

www.rccc.edu/english

**ENG 030 Basic Writing Skills
2 credits**

ENG 030 focuses on sentence and basic paragraph structure and development.

It enables you to review and improve grammar, usage, and punctuation skills while employing critical thinking strategies and the writing process to respond to a wide variety of writing situations.

**ENG 060 Writing Fundamentals
3 credits**

Prerequisite: ENG 030 or appropriate ACCUPLACER score

ENG 060 focuses on paragraph structure and development and introduces the formal essay. The course enables you to review and improve grammar, usage, and punctuation skills while employing critical thinking strategies and the writing process to respond to a wide variety of writing situations.

**ENG 090 Basic Composition
3 credits**

Prerequisite: ENG 060 or appropriate ACCUPLACER score

ENG 090 emphasizes critical thinking as students explore writing for specific purposes and audiences. The course enables you to develop skills required for college-level writing while reviewing paragraph structure and focusing on essay development.

**ENG 116 Designing
Print Documentation****3 credits**

ENG 116 focuses on developing technical documents, such as product manuals and troubleshooting guides that are delivered to users in print form. The course emphasizes content, organization, presentation, and style of print documentation. This course introduces concepts of document preparation and printing, as well as project cycle management, working as part of a documentation team, and collaboration with technical experts.

**ENG 118 Designing
Online Documentation****3 credits**

ENG 118 focuses on developing technical documents that are delivered to users on line, such as online manuals and online help information. The course emphasizes content, organization, presentation, and style of online documentation.

This course introduces hypertext and Web publishing concepts, as well as project cycle management, working as part of a documentation team, and collaboration with technical experts.

**ENG 119 Resumes and Cover
Letters****1 credit**

ENG 119 provides an introduction to writing resumes and cover letters.

Students will learn a variety of techniques for writing, presenting, formatting, and organizing traditional resumes, electronic resumes and cover letters.

**ENG 121 English Composition I
3 credits**

Prerequisite: A grade of "C" or higher in ENG 090 or appropriate SAT, ACT or ACCUPLACER score.

ENG 121 emphasizes the planning, writing, and revising of compositions, including the development of critical and logical thinking skills. Students write a minimum of five compositions that stress analytical, evaluative, and persuasive/argumentative writing.

**ENG 122 English Composition II
3 credits**

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

ENG 122 expands and refines the objectives of English Composition I. The course emphasizes critical/logical thinking and reading, problem definition, research strategies, and writing analytical, evaluative, and/or persuasive papers that incorporate research.

ENG 131 Technical Writing

3 credits

Prerequisites: Appropriate assessment score in reading and writing or "C" or better in ENG 090 or equivalent
ENG 131 develops skills one can apply to a variety of technical documents.

The course focuses on principles for organizing, writing, and revising clear, readable documents for industry, business, and government.

ENG 132 Technical Writing II

3 credits

Prerequisites: Grade of `C` or better in ENG 131 (or its equivalent) or permission of instructor.

ENG132 expands and refines the objectives of ENG 131, emphasizing formal presentations, both written and oral.

ENG 205 Technical Editing

3 credits

ENG 205 focuses on editing technical documents of varying lengths and types, from memos to product manuals. The course emphasizes consistency, readability, and conformity to an organization's style manual. This course introduces conventions governing content, organization, presentation, and style of technical documents. The course covers how to develop a style manual. The course introduces concepts of project cycle management, working as part of a documentation team, and collaboration with technical experts.

ENG 221 Creative Writing I

3 credits

Prerequisite: ENG 121 or instructor's permission

ENG 221 teaches techniques for creative writing. The course explores imaginative uses of language through creative genres (fiction, poetry, literary non-fiction) with emphasis on your own unique style, subject matter and needs.

ENG 226 Fiction Writing

3 credits

ENG 226 teaches techniques for creating fiction, including the study and appreciation of the language and forms of the short story.

ENG 227 Poetry Writing

3 credits

ENG 227 teaches techniques for creating poems, including study of figurative language, forms, and sound patterns of poetry.

ENG 230 Creative Nonfiction

3 credits

ENG 230 teaches students to incorporate literary techniques into factual writing. The course enables you to survey a wide range of readings and analyze form and content. The course includes critical review, biographical profiles, travel writing, and memoirs. This course provides the opportunity for students to write and review their own nonfiction in a supportive, constructive setting.

ENG 231 Literary Magazine

3 credits

ENG 231 teaches you the editorial process involved in preparing a literary magazine for publication. The course covers the process of selection of material (fiction, nonfiction, poetry, and visual art) to be published, as well as design, layout, and production to prepare a manuscript for publication. The course enables you to produce a literary magazine.

ENV - Environmental Science

ENV 101 Introduction to Environmental Science

4 credits

ENV 101 introduces you to the basic concepts of ecology and the relationship between environmental problems and biological systems. This course includes discussions on biology, chemistry, geology, energy, natural resources, pollution and environmental protection.

FIW- Fine Woodworking

FIW 100 Fundamentals of Woodworking

4 Credits

FIW 100 introduces the student to the manipulation of materials, drawings, hand and power tools, sharpening, joinery, assembly, and preparation for and finishing to accomplish woodworking

FIW 101 Introduction to Woodworking

8 Credits

FIW 101 is an introduction to woodworking based on an old-world approach to the instruction of basic woodworking skills. This is a thorough and intense class and is intended for the serious student only. An example of the intensity of this class is best illustrated by the first project, a Krenov style wood plane. The final project consists of a student' designed tool box, designed by them. The course includes in-depth instruction of all hand, power, and stationary tools and thorough instruction on the elements of design, shop drawings, and wood science. The business side of woodworking is also discussed including the creation of a portfolio, customer relations, and wood shop set-up.

FIW 102 Classical Guitar Construction

5 Credits

FIW 102 teaches the student how to build a guitar from scratch. Beginning with raw materials, the student is expected to build a classical based guitar. As the guitars are built, the student will learn many of the skills which distinguish the art of Lutherie.

FIW 103 Steel String Guitar Construction**5 Credits**

FIW 103 takes the student through the actual process of creating a steel string guitar from scratch. Beginning with raw materials, the student is expected to build a steel string guitar, either OM (Orchestra Model) or dreadnaught style.

FIW 104 Elements of Design**2 Credits**

FIW 104 is designed to assist the student in developing an approach to furniture design that will assist them with either a current project or projects in the future. The class covers sketches, shop drawings, and model making.

FIW 106 Plane Making**4 Credits**

Prerequisite: FIW 100, FIW 109 or permission of instructor

FIW 106 explores the tradition of craftsmen making their own tools and offers an explanation of the ideal within the creation of hand planes. Enables the students to determine the type of construction techniques to use in building this project through researching old methods and examining current practices. The final outcome is demonstrated by using the new plane.

FIW 107 Hand Tool Project**4 Credits**

FIW 107 involves making a project utilizing only hand tools. Through hand tool use a great many techniques and abilities that will be useful in improving woodworking skills and power tool performance will be learned.

FIW 108 Toolmaking and Jigs**4 Credits**

Pre-Requisite: FIW 100, FIW 109 or permission of instructor

FIW 108 expands the capabilities, speed and accuracy of the woodworker through the use of jigs and specialty tools. Focuses on constructing several projects (box joint jig, a router table, a mock dovetail jig or spring pole lathe) of progressing difficulty.

FIW 109 Introduction to Cabinetmaking**4 Credits**

FIW 109 will introduce the student to the various components of cabinetmaking. The course will teach the student basic shop drawing, material properties, joinery, and power and stationary tools as relating to basic cabinet construction. Safe and efficient use of machinery and materials are the essential goals of this course.

FIW 115 Strip Canoe Building**4 Credits**

FIW 115 focuses on constructing a strip canoe utilizing forms, thin wood strips, and epoxy/fiberglass techniques resulting in a beautiful and strong yet lightweight craft. It explores construction of seats, thwarts, and paddles

FIW 116 Cabriole Leg and Queen Anne Furniture**4 Credits**

Prerequisite: FIW 100, FIW 109 or permission of instructor

FIW 116 focuses on the Queen Anne style in order to guide the furniture maker to depart from rectilinear form and create curves and bends in wood. Examines patternmaking and building from drawings to create a chair, table, cabinet or similar piece.

FIW 118 Lathe Turning**4 Credits**

FIW 118 explores the capacities of a lathe through spindle and faceplate turnings. The use of lead, cove, taper, cylindrical, v-cut, proportion and curved line relationships are examined. Lathe components, tools and sharpening are explored.

FIW 119 Intermediate Turning I**4 Credits**

Prerequisite: FIW 118 or permission of instructor

FIW 119 guides the student through the art and craft of turning natural edge bowls, end grain hollowing, box making, platters, other open forms, and closed forms/internal hollowing techniques

FIW 121 Intermediate Turning II**4 Credits**

Prerequisite: FIW 119 or permission of instructor

FIW 121 teaches the student how to create unique turning through the use of finish applications, burning, inlays, and texturing

FIW 122 Wood Carving**4 Credits**

FIW 122 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**4 Credits**

FIW 125 allows the student to research the wide variety of finishes available from the oldest formulations to the bewildering array of modern films and stains. Students experiment with a representative sampling of colorations and surface finishes on a variety of species of wood using a selection of application techniques

FIW 128 Doormaking**4 Credits**

Prerequisite: FIW 100, FIW 109 or permission of instructor

FIW 128 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 techniques are examined.

FIW 200 Veneering and Marquetry**4 Credits**

Prerequisite: FIW 100, FIW 109 or permission of instructor

FIW 200 covers the surface decoration of wood; both edge and face treatments through the use of thin, often expensive, exotic or figured woods. Manmade 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**4 Credits**

Prerequisite: FIW 100, FIW 109 or permission of instructor

FIW 201 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**4 Credits**

Prerequisite: FIW 201

FIW 205 involves the study and construction of flat surface using some 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**4 Credits**

Prerequisite: FIW 201

FIW 206 utilizes chair construction to examine some of the alternatives of machine and hand-tool construction as illustrated by seat shaping through router surfacing vs. inshave use, for examples. Spindle turnings, spokeshave use and compound angles may be encountered in constructing a chair. Chair style often dictates resolving construction dilemmas such as jointing compound curves and jig making for tapered legs with fluting or reeding.

FIW 208 Furniture Repair**4 Credits**

Prerequisite: FIW 100, FIW 109 or permission of instructor

FIW 208 recognizes the need to repair and restore furniture and allows the student 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 topics covered in this course.

FIW 209 Cabinetmaking**4 Credits**

Prerequisite: FIW 109 or permission of instructor

FIW 209 will take the skills learned in the introductory course, and expand them. The course extensively covers techniques to use for the construction of more elaborate cabinets and large quantities of cabinets. This course also covers the estimation of materials and time for kitchen or similar cabinet installations.

FIW 210 Bending and Laminations**4 Credits**

Prerequisite: FIW 100, FIW 109 or permission of instructor

FIW 210 involves the process of curving natural and manmade panels through a variety of methods including spaced kerfs, cold lamination and steam bending. Form construction, various qualities of different wood species and adhesive selection are studied.

FIW 211 Shop Carpentry**4 Credits**

Prerequisite: Permission of instructor
FIW 211 is for the non-site, shop carpenter and includes jig and patternmaking; stationary power tool maintenance and adjustment; machining of woods; and techniques unique to shops, cabinetmakers and mill workers.

FIW 213 Furniture Making**4 Credits**

Prerequisite: FIW 201

FIW 213 teaches furniture design, construction techniques and material selection.

FIW 215 Advanced Joinery**4 Credits**

Prerequisite: FIW 201 and FIW 206
FIW 215 examines all types of joinery from decorative to the most complex of hand and machine cutting techniques. Students study and learn their respective qualities in regards to strength, material and adhesive selection, wood movement and the properties of different joints. A project incorporating many of these joints will be expected.

FIW 217 Advanced Cabinetmaking**4 Credits**

Prerequisite: FIW 100

FIW 217 expands skills taught in FIW 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/designs of cabinets used in residential/commercial construction. Construction of shop-built cabinets including a variety of door styles and the proper use of power tools for creating various designs. The uses and application of plastic laminates are explored and students learn the proper installation of shop-built cabinets.

FIW 219 Woodworking Lab**4 Credits**

Prerequisite: FIW 100 or FIW 109

FIW 219 provides the opportunity for the experienced woodworker to create a piece to expand their 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, 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.

FIW 220 Advanced Furniture and Cabinet Construction**4 Credits**

Prerequisite: FIW 213

FIW 220 is designed to assist the student in organizing their woodworking abilities. By the time the student takes this course, they should have a stable base of skills and abilities. Their completion of this project should demonstrate their understanding of advanced woodworking techniques, the ability to create and utilize shop drawings, and finishing techniques.

FIW 250 Period Furniture Reproduction

4 Credits

Prerequisite: FIW 201

FIW 250 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 275 Special Topics

0 – 6 Credits

FIW 275 provides students with a vehicle to pursue in depth exploration of special topics of interest

FIW 280 Technical Project

4 Credits

Prerequisite: Permission of the instructor

FIW 280 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.

FIW 285 Internship

4 Credits

Prerequisite: Permission of the instructor

FIW 285 provides students with the opportunity to apply their skills in a real woodworking environment.

FST- Fire Science Technology

www.rccc.edu/fire

FST 100 Firefighter I

9 credits

Prerequisite: PED 110-402 (may test out of this requirement)

Prerequisite or co-requisite: FST 102
Strongly recommended before taking Fire Academy: EMS 125/170 (EMT-Basic) and FST 160 (CPAT Test Prep)

FST 100 addresses the requirements necessary to perform at the first level of progression as identified in National Fire Protection Association (NFPA) 1001, Firefighter Professional Qualifications. This course is a classroom section in which the IFSTA 200 Essentials of Firefighting Manual is taught.

FST 101 Firefighter II

3 credits

Prerequisite: FST 100

FST 101 addresses the requirements necessary to perform at the second level of progression as identified in NFPA 1001, Level II Fire Fighter Professional Qualifications.

FST 102 Introduction to Fire Science and Suppression

3 credits

FST 102 introduces the fire service organization and operation from past to present operations. It includes operation and organization of federal, state, local and private protection forces.

Emphasizes extinguishing methods and equipment, special extinguishing agents, and special hazard considerations. Serves as a prerequisite for students with no previous fire suppression training or experience.

FST 103 Firefighter Occupational Health and Safety

3 credits

FST 103 focuses on on-scene and on-the-job firefighter health, safety and fitness, the safety officer, mental well-being, stress management, and standards related to health, safety and fitness.

FST 104 Fire Protection Systems

3 credits

Prerequisite: FST 100 and 105, or permission of instructor

FST 104 addresses principles and functions involved in the installation and use of sprinkler systems, special suppression systems, and fire detection and alarm systems. It covers portable fire extinguishing equipment requirements, sprinkler systems, installation, inspection and maintenance, special protection systems, and residential sprinklers.

FST 105 Building Plans and Construction

3 credits

FST 105 covers various methods of building construction, the materials used in building construction, and their relationship to methods of fire attack and extinguishments. It includes types of building construction, principles of fire resistance, flame spread, smoke and fire containment, basic knowledge of plan review, and blueprint specifications.

FST 106 Fire Inspection Practices

3 credits

FST 106 introduces the organization of the fire prevention agency; inspections, surveying, mapping and company inspections; recognition of fire hazards; engineering a solution to the hazard, enforcement of the solution, and public relations as affected by fire prevention. Fire Inspector I State Certificate available.

FST 107 Hazardous Materials Awareness Operations

3 credits

FST 107 covers 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

FST 110 addresses all aspects of the fire service entrance examination process and emphasizes various components of the exam, including the written, physical abilities, and oral interview. The objective of this class is to help increase the entrance firefighter candidate's chance of obtaining a career in the fire service.

FST 121 Technical Rope Rescue

4 credits

FST 121 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 132 Structural Collapse Rescue

2 credits

FST 132 covers the various types of construction, causes for structural collapse, types of structural collapse, and identification of structural component failures. Students study mitigation of a structural collapse response and other associated hazards through use of ICS, proper size-up, building failure analysis, monitoring techniques, shoring systems and associated equipment, proper search and recovery techniques, and personal protective equipment requirements.

FST 133 Trench Rescue

2 credits

FST 133 covers trench types; trench versus excavation rescues; soil types encountered at trench rescue sites; collapse dynamics; ICS/IMS; equipment, materials and tools used for rescue operations; personal protection issues; trench shoring; and victim extrication.

FST 134 Confined Space Rescue

2 credits

FST 134 covers the definition of confined space; OSHA considerations and permit requirements, monitoring instruments; ICS/IMS; victim contact; breathing apparatus such as SABA/ SCBA; communications and equipment, e.g., radio/hardwired; patient packaging, rescue versus recovery; and patient extrication.

FST 135 Ice Water Rescue

2 credits

FST 135 covers types of ice encountered in ice water rescue, ICS/IMS; ice strength, patient evaluation and contact, rescue equipment, ice water rescue techniques, rescue suit safety; belay line and shore support, hypothermia, Zodiac boat techniques and victim rescue.

FST 136 Swift Water Rescue

2 credits

FST 136 covers fast water hazards and risk analysis relating to swift water rescue, low head dam, ICS/IMS, victims in vehicles, rescue equipment and techniques, rope systems and throw bags, reach/throw/go, rescuer safety and shore support, and personal protective equipment.

FST 137 Vehicle Extrication

2 credits

FST 137 covers transportation emergency assessment skills as they relate to vehicle extrication; establishing safety zones; "reading" the wreck; ICS/IMS; utilities, traffic and fuel; vehicle construction; air bags; vehicle stabilization; victim access and stabilization; dismantling the vehicle; and patient packaging.

FST 150 Introduction to Fire Prevention Education

3 credits

FST 150 focuses on conducting prevention and education needs assessment, targeting audiences; development and delivery of prevention and education programs. It includes methods of conducting fire prevention and safety inspections.

FST 151 Driver-Operator

3 credits

FST 151 provides you with the basic knowledge and skills to safely operate fire apparatus according to the NFPA professional standard. The course enables you to display and demonstrate knowledge of fire apparatus, operation of apparatus, pumps and pumping, hydraulics calculations, maintenance and testing.

FST 152 Wildland Firefighting

3 credits

FST 152 introduces a basic understanding of wildland fire and the strategies and tactics involved during suppression operations. It includes fire line safety, emphasizing the wildland fire orders and watch out situations. Students receive training qualifying them as Certified Wildland Firefighters under the Incident Command System, recognized by the National Wildfire Coordinating Group. It covers fire behavior, fire weather, fuel types, safety equipment and guidelines, incident size up, determining resource needs, aircraft identification and capabilities, direct versus indirect attack, burn-out, backfiring and map reading.

FST 175 Special Topic

1-6 credits

Prerequisite: Permission of instructor
FST 175 provides foundational (100 level) and advanced (200 level) classes that are offered in the fire service field that do not fall under the standard curriculum. These may be seminar classes or may be prior learning credit portfolio classes that apply to fire electives. This includes National Fire Academy courses, NFPA courses, and local seminars and other professional courses and certifications.

FST 180 Internship

1-6 credits

Prerequisite: Permission of program advisor.

FST 175 allows students to gain experience and knowledge from on-the-job training. Positions are non-paid. This course must be arranged through the office of Job Placement/Cooperative Education and with approval of your advisor.

FST 201 Instructional Methodology (Fire Instructor I and II)

3 credits

Prerequisites: FST 100 and 102, or permission of instructor

FST 201 covers the role and responsibility of the fire service instructor. It includes oral communication skills, concepts of learning, developing lesson plans, instructional materials and delivery methods, testing and evaluations, records, reports, and demonstration of instructional abilities. Fire Instructor I State Certificate is available.

FST 202 Firefighting Strategy and Tactics

3 credits

Prerequisite: FST 102, 104 and 107, or permission of instructor

FST 202 covers firefighting strategy and tactics, methods of fire attack, fire behavior, building construction, and pre-fire planning.

FST 203 Fire Science Hydraulics

3 credits

Prerequisite: FST 105; MAT 090

(Introductory Algebra)

FST 203 covers hydraulic calculations that are necessary in water delivery and supply for fire suppression; hydraulic laws and formulas as applied to fire protection requirements, and fire apparatus UL requirements.

FST 204 Fire Codes and Ordinances

3 credits

Prerequisite: FST 102, 104, 105 or Instructor Approval

FST 204 covers familiarization and interpretation of national, state and local codes, ordinances and laws which influence the field of fire prevention. Fire code and life safety code are reviewed and referred to throughout the course.

FST 205 Fire Cause Determination

3 credits

FST 205 covers the proper method(s) of conducting basic fire investigation, determining area and point of origin, cause and methods of fire spread, recognition and preservation of evidence. It includes arson law, Constitutional law, interviewing, court procedures and testimony.

FST 206 Fire Company Supervision and Leadership

3 credits

Prerequisite: ENG 121; FST 102, 202, or permission of instructor

FST 206 covers fire department organization, management philosophies, leadership traits, time management, group dynamics, communications, motivation counseling, conflict resolution, and employee discipline. Meets components of Fire Officer I State Certificate.

FST 207 Firefighting Strategy and Tactics II

3 credits

Prerequisite: FST 202

FST 207 focuses on tactics and strategies associated with transportation emergencies and fires, high-rise fires, below-ground incidents, confined space emergencies, and special rescue situations.

FST 250 Chemistry for Fire Protection

3 credits

Prerequisite: FST 107

FST 250 addresses the actions and reactions of commonly encountered products and chemicals, chemical properties, and field applied chemistry.

FST 251 Fire Service and the Law

3 credits

FST 251 provides the professional fire officer with detailed information on federal, state and local laws, ordinances, and civil and criminal liabilities that impact the fire service. It includes the OSHA and NFPA standards in-depth, as well as pensions, Workman's Compensation, drug testing, union bargaining agreements and other topics.

FST 252 Fire Arson Investigation

3 credits

Prerequisites: FST 100, 102 and 205, or permission of instructor

FST 252 studies cause and origin as related to arson fires, evidence preservation and chain of evidence, interviewing, giving testimony; and laws associated with fire and arson investigation, records and reports.

FST 253 Fire Ground Organization and Command

3 credits

Prerequisite: FST 202

FST 253 focuses on fire ground management, resource availability, management and deployment, Integrated Management System and all related components, communications, problem solving, and table top exercises.

FST 254 Hazardous Materials Technician

3 credits

Prerequisite: FST 107

FST 254 focuses on techniques associated with hazardous materials mitigation, the use of monitoring devices, components of a mitigation team, command and control of hazardous materials incidents.

FST 255 Fire Service Management

3 credits

Prerequisites: FST 202 and FST 206, or by permission of instructor

FST 255 serves as the basic management course for present and potential members of the fire service, and for students and members of other fire science-related professions. Introduces you to current management practices and philosophies and real-world applications from the supervisor's point of view. It covers decision making/problem solving, communication skills, conflict resolution, creativity and innovation, as well as the role of the manager in supervising personnel and programs, e.g., motivation, leadership, counseling, ethics, and handling discipline and grievances.

FST 256 Fire Service EMS Management

3 credits

FST 256 addresses budgeting, staffing, training, and equipment issues; transportation, standard of care, and protocols; operations, communications, incident and disaster management, and legal issues associated with EMS operations.

FST 257 Fire Department Administration

3 credits

Prerequisite: FST 206

FST 257 focuses on the operations of volunteer and combination fire departments, compliance with standards and ordinances, funding, recruiting, hiring and retaining employees, funding and budgeting, organizational planning and public relations.

FST 258 Wildland Fire Incident Management and Organization

3 credits

Prerequisite: FST 152 or previous certified red card training

FST 258 introduces and develops supervisory and decision-making skills for fireline management individuals. It covers (1) First Attack Incident Commander, (2) Crew Supervisor, (3) Incident Commander Multi-resource, and (4) Task Force/Strike Team Leader. All four courses are certifiable by the Incident Command System under NIIMS and recognized by the National Wildfire Coordinating Group. It covers fireline safety, size-up, incident planning, ordering, tactics, strategies, and administrative duties.

FST 260 Intermediate Fire Behavior

S-290

2 credits

FST 260 analyzes the affects of fuels, weather, topography and fire behavior on the wildland fire environment.

Acquaints prospective fire line supervisors in wildland fire behavior for effective and safe fire management operations.

FST 261 Fire Operations in the Urban Interface

2 credits

Prerequisites: Firefighter II in the National Wildfire Coordinating Group and ability to perform wildland firefighting tasks.

FST 261 examines fireline personnel skills to anticipate and predict wildland fire behavior, weather, and rates of spread. This course was developed under the Interagency Curriculum established and coordinated by the National Wildfire Coordinating Group. It 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 Wildland Fire Behavior

3 credits

Prerequisites: Firefighter II in the NWCG system and ability to perform wildland firefighting tasks in the field.

FST 262 gives fireline personnel skills to anticipate and predict wildland fire behavior, weather, and rates of spread. This course was developed under the Interagency Curriculum established and coordinated by the National Wildfire Coordinating Group. 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 263 Powersaws S212

2 credits

Prerequisites: Firefighter Type II in National Wildfire Coordinating Group and ability to perform chainsaw operations.

FST 263 teaches the wildland firefighter the skills necessary to use, repair and maintain a chainsaw in the field. Focuses on techniques to fell trees and buck material in a fireline operation.

FST 264 Helicopter Crew S-217

2 credits

FST 264 provides training for fire and nonfire personnel involved in project assignments with helicopters. Enables you to develop skills and to work with a helicopter in performing tasks common to all helicopter operations.

FST 265 Ignition Operations S-234

2 credits

Prerequisites: FST 152 or equivalent, Intermediate Fire Behavior; qualification as a Squad Boss/Firefighter Type 1.

FST 265 teaches the wildland firefighter techniques in conducting firing operations. Focuses 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 266 Crew Boss S230

2 credits

Prerequisites: FST 260 or completion of S290 Intermediate Fire Behavior, squad boss qualification

FST 266 meets the training needs of a Crew Boss on an incident. It includes preparation, mobilization, tactics and safety, off-line duties, demobilization and postincident responsibilities.

FST 270 Basic Air Ops S270

1 credit

Prerequisites: FST 202 and FST 206; or permission of instructor

FST 270 serves as the basic management course for present and potential members of the fire service, and for students and members of other fire science-related professions. Introduces you to current management practices and philosophies and real-world applications from the supervisor's point of view. It covers decision making/problem solving, communication skills, conflict resolution, creativity and innovation, as well as the role of the manager in supervising personnel and programs, e.g., motivation, leadership, counseling, ethics, and handling discipline and grievances.

FST 275 Special Topics**1-4 credits**

Prerequisite: Permission of instructor. FST 275 provides students with a vehicle to pursue in depth exploration of special topics of interest not previously offered. It includes National Fire Academy courses, VFIS courses, NFPA certification courses or other special subject classes that do not fall under the standard FST curriculum.

FST 285 Independent Study**1-6 credits**

Prerequisite: Permission of instructor. FST 285 meets the individual needs of students. Students engage in intensive study or research under the direction of a qualified instructor.

FRE- French

www.rccc.edu/languages

FRE 101 Conversational French I
3 credits

FRE 101 introduces beginning students to conversational French and focuses on understanding and speaking French. It covers basic vocabulary, grammar, and expressions that are used in daily situations and in travel.

FRE 102 Conversational French II
3 credits

Prerequisites: FRE 101 or instructor permission. FRE 102 continues the sequence for beginning students who wish to understand and speak French. It covers basic conversational patterns, expressions, and grammar.

FRE 111 French Language I
5 credits

FRE 111 begins a sequence dealing with the development of functional proficiency in listening, speaking, reading and writing the French language. Note: The order of the topics and methodology will vary according to individual texts and instructors.

FRE 112 French Language II**5 credits**

Prerequisites: FRE 111 or instructor permission.

FRE 112 continues French I in the development of functional proficiency in listening, speaking, reading and writing the French language. Note: The order of the topics and the methodology will vary according to individual texts and instructors.

FRE 211 French Language III**3 credits**

Prerequisites: FRE 112 or instructor permission.

FRE 211 continues French I and II in the development of increased functional proficiency in listening, speaking, reading and writing the French language. Note: The order of the topics and the methodology will vary according to individual texts and instructors.

FRE 212 French Language IV**3 credits**

Prerequisites: FRE 211 or instructor permission.

FRE 212 continues French I, II and III in the development of increased functional proficiency in listening, speaking, reading and writing the French language. Note: The order of the topics and the methodology will vary according to individual texts and instructors.

GEO- Geography

www.rccc.edu/humanities/geography

GEO 105 – World Regional
Geography

GEO 105 facilitates an understanding of spatial relationships between and among the geographic regions of the world. It includes demographic and cultural (political, economic, and historic) forces related to the physical environments of selected regions. Focuses on analysis of interrelationships between developed and developing regions, and the interactions between human societies and natural environments.

GEO 106 – Human Geography

GEO 106 introduces geographic perspectives and methods with applications to the study of human activities.

Emphasizes the distribution of humans, adjustments to the natural environment, and land use practices.

GER- German

www.rccc.edu/languages

GER 101 Conversational
German I
3 credits

GER 101 introduces beginning students to conversational German and focuses on understanding and speaking German. It covers basic vocabulary, grammar, and expressions that are used in daily situations and in travel.

GER 102 Conversational
German II
3 credits

Prerequisite: GER 101 or permission of instructor

GER 102 continues the sequence for students who wish to understand and speak German. It covers basic patterns, expressions, and grammar.

GER 111 German Language I
5 credits

GER 111 begins a sequence dealing with the development of functional proficiency in listening, speaking, reading and writing the German language.

Note: The order of the topics and methodology will vary according to individual texts and instructors.

GER 112 German Language II
5 credits

Prerequisite: GER 111 or instructor permission

GER 112 continues German Language I in the development of functional proficiency in listening, speaking, reading and writing the German language.

Note: The order of the topics and the methodology will vary according to individual texts and instructors.

GER 211 German Language III
3 credits

Prerequisites: GER 112 or instructor permission.

GER 211 continues German Language I and II in the development of increased functional proficiency in listening, speaking, reading and writing the German language. Note: The order of the topics and the methodology will vary according to individual texts and instructors.

GER 212 German Language IV **3 credits**

Prerequisite: GER 211 or instructor permission.

GER 212 continues German Language I, II and III in the development of increased functional proficiency in listening, speaking, reading and writing the German language. Note: The order of the topics and the methodology will vary according to individual texts and instructors.

GEY- Geology

www.rccc.edu/science/geology

GEY 111 Physical Geology **4 credits**

GEY 111 studies the materials of the earth, its structure, surface features and the geologic processes involved in its development. This course includes laboratory experience.

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GEY 118 Rock and Mineral Identification **1 credit**

GEY 118 introduces basic information on the definition, formation, identification, and uses of rocks and minerals.

GEY 119 The Great Ice Age **1 credit**

GEY 119 analyzes the effect of the last ice age on the development of North America and also explores theories of climatic change.

GEY 135 Environmental Geology **3 credits**

GEY 135 introduces geology and its relationship to man's environment. The course covers geologic hazards such as floods, landslides, avalanches, earthquakes and volcanoes. It focuses on surface and groundwater resources in terms of exploitation and man's responsibility to protect these resources from contamination. The geologic aspects of land use practices, as well as mineral and energy resource exploitation are reviewed and related to legislation regarding environmental law.

GEY 140 Introduction to Global Positioning Systems **1 credit**

GEY 140 provides instruction on the use and application of hand-held global positioning systems (GPS). The course includes 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 The Geology and Evolution of Caves **2 credits**

GEY 143 introduces the science of caves. The course includes cave formation and evolution, cave decorations (speleothems) and the adaptations of living organisms to life below ground. It incorporates a one-day field trip to a nearby cave system.

GEY 205 The Geology of Colorado **3 credits**

Prerequisites: Permission of Instructor
GEY 205 covers the geologic history of Colorado, with emphasis on formation of mountain ranges, igneous, sedimentary and metamorphic rock types, ore deposits and landforms. It incorporates field experience and/or classroom lectures.

GEY 208 Geology Field Trip **1-5 credits**

Prerequisites: Permission of Instructor
GEY 208 involves in-depth field studies into the geology of specific regions both within and outside Colorado. Trips lasting from one to several days to study the area constitute the major activity of the course. The specific area of investigation is indicated in the schedule of classes each time the course is offered.

GEY 121 Historical Geology **4 credits**

GEY 121 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. The course includes laboratory experience.

GEY 125 Continental Drift **1 credit**

GEY 125 presents the theory of plate tectonics and its relationship to continental movement, earthquakes, volcanoes, and the history of life.

HHP- Holistic Health Professional

HHP 100 Complementary Healing Methods **1 credit**

HHP 100 explores some of the more widely used alternative/complimentary healing methods. Expands the student's health horizons and enables the student to converse in a knowledgeable manner with patients and practitioners.

HHP 103 Circle of Healing **1 credit**

HHP 103 enables the student to synthesize different energy methods in order to work as part of a healing group using intuition and group consensus of imagery as the vehicle to create the healing environment.

HHP 104 The Healing Mind**0.5 credit**

HHP 104 explores the scientific research surrounding mind-healing as well as enhancing mind-body communication skills.

HHP 110 Neurolinguistic Programming I**0.5 credit**

HHP 110 explores practical skills that enhance and expand a person's ability to build verbal and non-verbal rapport with others.

HHP 111 Herbology I**1 credit.**

HHP 111 explores the pharmacokinetics and composition of herbs and their effect on the body systems. Focuses on the habitat, harvesting, storage and usage of a select group of herbs

HHP 125 Feldenkrais Awareness Through Movement**0.5 credit**

HHP 125 incorporates a series of lessons in how the body functions and how to use it more intelligently. Through gentle and exploratory movements, a student learns to retrain the central nervous system and free oneself from habitual patterns of moving, thinking, and feeling that contribute to stress and dis-ease. Through increased bodily awareness, you examine ways to move more easily during activities from vigorous sports to breathing, standing and walking.

HHP 130 Reiki Level I**1 credit**

HHP 130 explores the traditional Usui use of Reiki. It covers the history and development of Reiki work, beginning in Japan, to Hawaii, to the U.S., and later Europe. Focuses on the fundamental beliefs and the dynamics of the Reiki process. Enables each student to receive Reiki attunements to prepare for the Reiki energy work. Each class member gives and receives a Reiki hands-on treatment session.

HHP 135 Assessing Inner Resources I**1 credit**

HHP 135 focuses on imagery, journaling, relaxation, and meditation to find inner strength and peace.

HHP 140 Assessing Inner Resources II**1 credit**

Prerequisite HHP 135

HHP 140 building on knowledge obtained in HHP 135. The student 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**

HHP 145 provides the student with information on nutritional and herbal self-care treatments.

HHP 160 Learn to Meditate**0.5 credit**

HHP 160 focuses on techniques to meditate and explores the life-enhancing benefits of meditation.

HHP 166 Introduction to Reflexology**1 credit**

HHP 166 provides the student will obtain knowledge and skill in foot anatomy, basic hand stroke and foot reflex points.

HHP 167 Soft Hands**1 credit**

HHP 167 focuses on improving communication through hands while assisting the healing process through touch. It explores enhancing awareness and interpretation of feelings.

HHP 168 Turaya Meditation**1 credit**

HHP 168 introduces the student to the fundamentals of turaya meditation which uses higher consciousness energy symbols to accelerate the students movement.

HHP 190 Crystal and Mineral Usage in Health Care**0.5 credit**

HHP 190 introduces the student to crystal and mineral types, their properties and how to clear, clean, and use for personal use or with clients. Incorporates hands on experience to feel the different energies of crystals and minerals.

HHP 202 Aromatherapy**0.5 credit**

HHP 202 provides the student on the use of essential oils in health maintenance and the healing of disease has been lost, some tantalizing data from the ancient Egyptians exists and has been verified by modern scientific research. It explores the pharmacokinetics and neurophysiology of essential oils, looking into their origins, extraction, storage, and usage. Enables you to observe a large number of essential oil remedies and their applications.

HHP 211 Herbology II**2 credits**

Prerequisite: HHP 111

HHP 211 builds upon the information and skills obtained in HHP 111 and further explores the pharmacokinetics and composition of herbs and their effect on the body systems.

HHP 212 Neurolinguistic Programming II**0.5 credit**

Prerequisite HHP 110.

HHP 212 enhances and expands your ability to build verbal and non-verbal rapport rapidly with others. It includes the process called anchoring, a gentle and respectful method of change.

HHP 213 Spiritual Care**0.5 credit**

HHP 213 explores individual development through the life span. It presents the healing aspects of various religions with correlation to the energy system with Florence Nightingale's thoughts. Spiritual assessment and interventions for client care are covered.

HHP 214 Exploring Your Dreams**1 credit**

HHP 214 is a participatory course of dream interpretation leads to an awareness of the benefits of dreams as a valuable tool for facilitating health and personal growth. Participants learn simple tools for dream recall; recording dreams and uncovering the many levels of meaning that are found in every dream. Students 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

HHP 215 provides an overview of the role of visual art in healing. It includes both didactic information and experiential learning. Enables you to learn how the role of art in healing has evolved over the years and to 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 221 High Level Wellness

1 credit

HHP 221 explores the positive dimensions of healthy lifestyles and covers the techniques to meet the basic needs of illness, prevention, and burnout.

HHP 223 Jin Shin Level I

2 credits

HHP 223 provides basic understanding of the human energy system from an Asian perspective. Jin Shin is noninvasive, performed with light touch on various acupuncture points on the body. Enables the student to learn to identify, access, open and balance the energy of self and others within the Jin Shin system. Four Jin Shin sessions are given and received.

HHP 224 Introduction to Massage Therapy

1 credit

HHP 224 provides 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 are performed and experienced by each student.

HHP 227 Communication Skills

0.5 credit

HHP 227 assists the student in acquiring essential skills in communication, conflict resolution, negotiation, and team building.

HHP 228 Solution Focused Counseling

0.5 credit

HHP 228 explores the practice of effective, quick, Emotional Freedom Technique (EFT) to allow themselves and others to become more focused.

HHP 229 Wellness Counseling

1 credit

Required for HHP certificate.

HHP 229 provides the tools to facilitate oneself and others in the movement towards wellness. Enables the student to learn assessment skills, basic counseling skills, establishing contacts and goals for change.

HHP 231 Spiritual Renewal

0.5 credit

HHP 231 enables you to develop practical approaches of caregivers for spiritual alienation and spiritual re-connection.

HHP 235 Mind, Body Healing and Health

3 credits

HHP 235 focuses on the survey of the rapidly developing awareness of the inner-connectedness of mind and body and spirit. It explores the dialog between eastern and western health care and the many choices which could enhance our health and well-being.

HHP 236 Dance Therapy and Healing

0.5 credit

HHP 236 introduces 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 239 Issues in Holistic Nutrition

0.5 credit

HHP 239 examines the nutritional alternatives to traditional medical therapies. The discussions will focus on a more optimum level of health using various nutritional techniques.

HHP 241 Healing with Imagery

0.5 credit

HHP 241 explores the ancient mysteries of shaman healers and the clinical research now validating this power. Learn effective techniques which accelerate healing and develop insight.

HHP 242 Healing Touch Level I

1 credit

HHP 242 is an energy based therapeutic approach to healing. It enables you to develop and use touch as a means of assessing a clients/patients state of wellness through the intentional use of touch. Participants are given specific instructions in developing touch sensitivity and 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 243 Healing Touch Level II

1 credit

Prerequisite: HHP 242

HHP 243 builds upon the knowledge and skills obtained in HHP 242, the student will gain the specific skills necessary to become an advanced practitioner. Emphasizes experiential learning and focus on developing healing sequences for specific client needs. Back techniques are introduced, and the therapeutic interactions for specific emotional and physiological problems are discussed and practiced.

HHP 244 Holistic Health Level I

1 credit

Prerequisite: HHP 229

Required for HHP certificate. HHP 244 introduces holistic philosophy, theory, and practice and how it integrates with nursing in the art and science of caring and healing. It focuses on conscious application of self-responsibility, caring, human development, stress reduction, communication, problem solving, teaching, learning, leadership, and change.

HHP 246 Reiki Level II**1 credit****Prerequisite:** HHP 130

HHP 246 builds upon the knowledge and skills obtained in HHP 130, the student will learn the meaning of the three traditional Usui symbols. Incorporates in-depth discussion about application of the three symbols. Students learn about the necessary preparation of a Reiki therapist in offering treatments. One attunement is given to each student. Each member gives and receives a Reiki treatment using the three Reiki symbols. Long Distance and Mental Reiki processes are learned. Reiki Therapist Certification available at completion.

HHP 249 Journaling the Healing Journey**1 credit**

HHP 249 incorporates using a journal as an effective tool for looking at our personal growth process, as well as for helping clients in their healing process. Teaches journaling skills and how to focus specifically on healing through various techniques.

HHP 254 Holistic Health Level II**2 credits**

Prerequisites: HHP 229 Wellness Required for HHP certificate.

Counseling and HHP 244 Holistic Health Level I

HHP 254 provides a more comprehensive study of modalities to strengthen the whole person in the process of facilitating and maintaining optimal health, using the basic theory of Holistic Nursing Level I.

HHP 256 Holistic Health Level III**2 credits**

Required for HHP Certificate.

Prerequisites: HHP 229, HHP 244 and HHP 254

HHP 256 builds on the basic theory introduced in Holistic Nursing Level II and provides a more comprehensive study of modalities to strengthen the whole person in the process of facilitating and maintaining optimal health.

HHP 258 Journaling the Spiritual Journey**1 credit**

HHP 258 incorporates the spiritual journal as 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. It 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 260 Advanced Reflexology**1 credit**

Prerequisite: HHP 166

HHP 260 incorporates a hands-on approach with an emphasis on developing techniques. Continues the basic reflexology class and allows you to work on hand positions and address specific techniques for specific issues.

HHP 262 Psychoneuroimmunology**0.5 credit**

HHP 262 studies the inter-relationship of the body-mind connection. It explores the physiological and psychological interaction between the brain, the immune system, and the endocrine system.

HHP 263 Creating a Holistic Practice**0.5 credit**

HHP 263 focuses on the necessary skills for a nurse to start an independent practice. It includes self-assessment of professional skills, the business plan for marketing, finances, and the actual design of the practice.

HHP 265 Gift of Self-Esteem**1 credit**

HHP 265 explores self-talk, self-appreciation, self-responsibility, belief, expectations, and provide tools for increasing personal power.

HHP 267 Living Without Limits**0.5 credit**

HHP 267 focuses on the steps that can be taken to clarify goals, get support for challenges, and act effectively to accomplish one's life dreams.

HHP 269 Healing Presence**1 credit**

HHP 269 provides the opportunity to explore the meaning of presence through the process of increased self-awareness and self-discovery, as well as development of essential skills for connecting on a higher level with oneself and others.

**HIS-
History**

www.rccc.edu/humanities/history

HIS 101 Western Civilization I**3 credits**

HIS 101 explores a number of events, peoples, groups, ideas, institutions, and trends that have shaped Western Civilization from the prehistoric era to 1650. Reflects the multiple perspectives of gender, class, religion, and ethnic groups. It focuses on developing, practicing, and strengthening the skills historians use while constructing knowledge in this discipline.

HIS 102 Western Civilization II**3 credits**

HIS 102 explores a number of events, peoples, groups, ideas, institutions, and trends that have shaped Western Civilization from 1650 to the present. Reflects the multiple perspectives of gender, class, religion, and ethnic groups. It focuses on developing, practicing, and strengthening the skills historians use while constructing knowledge in this discipline.

HIS 201 United States History I**3 credits**

HIS 201 explores events, trends, peoples, groups, cultures, ideas, and institutions in North America and United States history, including the multiple perspectives of gender, class, and ethnicity, between the period when Native American Indians were the sole inhabitants of North America, and the American Civil War. It focuses on developing, practicing, and strengthening the skills historians use while constructing knowledge in the discipline.

HIS 202 United States History II **3 credits**

HIS 202 explores events, trends, peoples, groups, cultures, ideas, and institutions in United States history, including perspectives of gender, class, and ethnicity, between the period of the American Civil War and the present. It focuses on developing, practicing, and strengthening the skills historians use while constructing knowledge in the discipline.

HIS 208 The Native American Experience **3 credits**

HIS 208 analyzes historical and socio-cultural change for Native Americans (Indians) from pre-colonial America to the present, emphasizing those processes and relations with non-Native Americans which have contributed to the current conditions

HIS 215 Women in U.S. History **3 credits**

HIS 215 examines women's changing roles in American history from the pre-colonial native population to the present. Emphasizes the nature of women's work and the participation of women in the family, political, religious, and cultural activities and in social reform movements.

HIS 225 Colorado History **3 credits**

HIS 225 presents the story of the people, society, and cultures of Colorado from its earliest Native Americans, through the Spanish influx, the explorers, the fur traders and mountain men, the gold rush, railroad builders, the cattlemen and farmers, the silver boom, the tourists, and the modern state.

HIS 236 Contemporary United States History **3 credits**

HIS 236 focuses on the major political, economic, social, and cultural developments that have shaped modern America.

HIS 247 Contemporary World History **3 credits**

HIS 137 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. Emphasizes the interactions of global regions and nation-states.

HIS 275 Special Topics

HIS 275 focuses on the exploration of current topics, issues and activities related to one or more aspects of history.

HPR- Health Professional

www.rccc.edu/health

HPR 102 CPR for Professionals **0.5 credit**

HPR 102 meets the requirement for American Red Cross Professional Rescuer CPR or American Heart Association Basic Life Support for those who work in emergency services, healthcare and other professional areas. Material presented in the course is basic patient assessment, basic airway management, rescue breathing, and CPR for infant, children and adult patients.

HPR 103 CPR for Professionals Renewal **0.5 credit**

Prerequisite: Current healthcare provider CPR card
HPR 103 provides opportunity for currently certified CPR providers to renew certificates.

HPR 106 Law and Ethics for Health Professions **2 credits**

HPR 106 advances student knowledge in the study and application of Medico-legal concepts in medical careers, establishes a foundation for ethical behavior and decision making.

HPR 112 Phlebotomy **4 credits**

HPR 112 teaches the duties associated with the practice of venipuncture, capillary puncture, and special collection procedures. Students will have experience with quality control, infection control and safety procedures as well as laboratory computer systems. Students successfully completing this course may apply for a National Phlebotomy Registry Examination.

HPR 120 Advanced Cardiac Life Support (ACLS) **1 Credit**

Prerequisite: Current basic life support health care provider C certification
HPR 120 presents the required material for ACLS completion. It will cover arrhythmias, medications, therapeutic modalities for life threatening arrhythmias, airway management, and other treatment modalities used in cardiac and respiratory arrest.

HPR 121 Advanced Cardiac Life Support Recertification **0.5 credit**

Prerequisite: ACLS completion with current card
HPR 121 presents the required material for ACLS recertification. The course will cover rhythm recognition, cardiac drugs, cardiac monitors, and case based scenarios.

HPR 125 Outdoor Emergency Care**4 credits**

HPR 125 prepares the student without previous first aid training to handle the emergency care problems seen at alpine and nordic ski areas. The knowledge and skills are oriented toward the wilderness setting with special emphasis on ski and snowboard injuries, altitude and cold weather illnesses, 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.

HPR 126 Outdoor Emergency Care Refresher**.5 credit**

HPR 126 provides for maintenance of a uniform skill level and act as a means of national recertification for Outdoor Emergency Care.

HPR 130 Pediatric Advanced Life Support (PALS)**1 credit**

HPR 130 provides students the needed information and skills as required by health care agencies for pediatric emergencies.

HPR 131 Pediatric Advanced Life Support Renewal**0.5 credit**

Prerequisite: Current PALS card
HPR 131 provides students with updates and skill practice to complete renewal requirements for PALS completion card

HPR 137 Human Diseases**4 credits**

HPR 137 covers basic knowledge of the deviations that occur in the human body with disease and injury. An integrated study of signs/symptoms, diagnostic tests and treatment.

HPR 150 Computing in Comfort**0.5 credit**

HPR 150 focuses on a series of awareness through movement lessons to help you learn about the functioning of the body to achieve relaxed, efficient, strain-free, safe, and comfortable ways of using the computer.

HPR 165 Approaches to Menopause**0.5 credit**

HPR 165 offers an in-depth discussion on hormone therapy along with alternative self-care interventions that will support well-being and enhance quality of life for women as they age.

HPR 166 Introspective Ethics**1 credit**

HPR 166 provides a philosophical approach to the practice of ethics in the health care setting.

HPR 178 Medical Terminology**3 credits**

HPR 178 introduces the student to the structure of medical terms with emphasis on combining and using the most common prefixes, roots and suffixes. It includes terms related to clinical laboratory, diagnostic imaging, nuclear medicine and oncology, as well as major body systems. Classroom structure provides accepted pronunciation of terms and relative use in the healthcare setting.

HPR 180 Phlebotomy Internship**3 credits**

Prerequisite: HPR 112
HPR 180 provides students with the opportunity to supplement course work with practical work experience related to their educational program. Documentation of immunizations and permission of instructor required.

HPR 190 Basic EKG Interpretation**2 credits**

HPR 190 provides instruction for interpretation of EKG strips, anatomy and physiology of the heart, using three-lead monitoring as a guide. Twelve-lead EKG may be discussed.

HPR 200 12 Lead EKG Interpretations**2 credits**

Prerequisite: HPR 190
HPR 200 focuses on each wave and interval of the complex, the axis, and the 12-lead presentation of some rhythm disturbances.

HPR 210 Physical Assessment**2 credits**

Prerequisite: Student must have an active Colorado RN license. Register for RN refresher program NUR 290. HPR 210 explores 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 included.

HPR 218 Supervision and Delegation**0.5 credit**

HPR 218 covers the rules for delegation of nursing tasks, including documentation and supervision issues.

HPR 230 Trauma Assessment and Intervention**1 credit**

HPR 230 presents the steps for a systematic head to toe assessment and intervention in traumatic emergencies.

HPR 242 Nursing Career Alternatives**0.5 credit**

HPR 242 explores numerous areas in which nurses work and how to pursue jobs in those areas.

HPR 260 Bereavement Counseling**0.5 credit**

HPR 260 presents current principles for bereavement counseling. The stages of the grieving process, coping mechanisms, and feelings regarding death will be explored.

HPR 263 Child Self-Esteem**1 credit**

HPR 263 focuses on skill building in communication, self-expression, and conflict resolution for those dealing with children.

HPR 269 Stress Management**0.5 credit**

HPR 269 provides you with the specific skills that provide control over stressful situations or people. The class is designed for all who are interested in a higher quality of life and want to reach their full potential.

HUM - Humanities

www.rccc.edu/health

HUM 118 Religion in American Culture

3 credits

HUM 118 investigates the various ways in which religion and American culture interact. The course begins with the religion of Native Americans, which existed in a pre-modern society where religion went unchallenged as the preeminent organizing principle, to our post-modern era, where religion competes with a multiplicity of other belief systems in a complex societal matrix. This course pays close attention to the sundry ways in which religion and American culture interface.

HUM 121 Survey of Humanities I

3 credits

HUM 121 introduces students to the history of ideas that have defined cultures through a study of the visual arts, literature, drama, music, and philosophy. It emphasizes connections among the arts, values, and diverse cultures, including European and non-European, from the Ancient world to 1000 C.E.

HUM 122 Survey of Humanities II

3 credits

HUM 122 examines written texts, visual arts and musical compositions to analyze and reflect the evolution and confluence of cultures in Europe, Asia and the Americas from 800 C.E. to 1750. Any two of the three Survey of Humanities courses equal a sequence.

HUM 123 Survey of Humanities III

3 credits

HUM 123 examines the cultures of the 17th through the 20th centuries by focusing on the interrelationships of the arts, ideas, and history. Considers the influences of industrialism, scientific development, and non-European peoples.

HVA– Heating, Ventilation and Air Conditioning

www.rccc.edu/construction

HVA 100 Safety Training for the Trades

0.5 credit

HVA 100 introduces you to the basic concepts of workplace hazards and the need for continuing education with regard to safety. The reasons behind confined space training and proper safety equipment will be covered.

HVA 102 Basic Refrigeration

4 credits

HVA 102 introduces the basic theory of refrigeration systems, components, charging, recycling, and evacuation of refrigeration units.

HVA 105 Electricity for HVAC/R

4 credits

Prerequisite: HVA 100
HVA 105 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

HVA 110 Fundamentals of Gas Heating

4 credits

Co-requisite: HVA 105 or permission of the instructor
HVA 110 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.

HVA 111 Piping Skills

4 credits

HVA 111 studies the installation of common piping materials in plumbing and HVAC/R systems. Pipe math, terminology, common piping materials and application, figuring offsets and common pipe joints are also covered. Shop projects including pipe support and hanging, center to center measurements and a variety of pipe joining methods are explored.

HVA 112 R-410a

1 credit

HVA 112 enlightens the student on conditions required for proper operation with R-410a

HVA 113 Refrigerant Recovery Training

1 credit

Prerequisite: HVA 102 or permission of the instructor
HVA 113 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.

HVA 114 Centrifugal Pumps

1.5 credit

HVA 114 presents information on why and how pumps are designed. It will cover 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

HVA 122 Commercial Refrigeration

4 credits

Prerequisite: HVA 121 or applicable work experience
HVA 122 covers commercial ice makers, walk-in coolers, walk-in freezers, and self-contained \ refrigeration units.

HVA 131 Refrigeration and Air Conditioning Basics

1.5 credit

HVA 131 covers the basics of refrigeration and air conditioning and provides a blend of theory with 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 techniques. FREE EPA certification testing, plus HVAC Excellence Technician's Certificate testing are offered.

HVA 132 Air Conditioning and Refrigeration Controls

4 credits

Prerequisite: HVA 102 and 105, or permission of instructor

HVA 132 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.

HVA 134 Air Conditioning Systems

4 credits

HVA 134 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

HVA 140 Basic Sheet Metal

4 credits

HVA 140 teaches the basic skills required to install duct systems for those entering the HVAC trade. Information covered includes: tools, safety, common materials, installation standards and practices. The course will cover fabrication of transitions and common fittings.

HVA 150 Code and Piping Calculations

2 credits

HVA 150 reviews and applies code and piping calculation. Topics include calculations for the following: pipe and cylindrical area and volume, pipe circumference, rectangular area and volume, offsets, water volume and weight grade, fall, and run. The knowledge gained by students completing this course can be applied to all plumbing systems, fuel gas appliance piping and critical calculations for other mechanical and piping systems.

HVA 162 Heating Controls

4 credits

Prerequisite: HVA 110 and 105 or permission of the instructor.

HVA 162 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.

HVA 192 Refrigerant Retrofit Training

1.5 credit

HVA 192 allows 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. You have an opportunity to become EPA certified

HVA 193 Hydraulics Training

1.5 credits

HVA 193 increases knowledge of basic hydraulics to become a better troubleshooter and lower maintenance costs. Training stations are utilized in each training session. Cutaways of all major components are used in the sessions to visually demonstrate the component's construction and operation. Developing an understanding of how it works leads to an understanding of how and why it fails.

HVA 194 Fundamentals of Pneumatic Controls

1.5 credits

HVA 194 introduces the subject of pneumatic control systems. It is device oriented and provides a thorough treatment of those devices commonly utilized in comfort control systems 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.

HVA 200 International Residential Code, Mechanical & Fuel Gas

2 Credits

HVA 200 covers the mechanical and fuel gas requirements of the IRC. Students will be given the opportunity to learn and apply the general requirements of this code. The course will review and apply the sizing requirements of part V & VI of this code.

HVA 204 Direct Digital Controls

4 credits

Prerequisite: AHR 105, AHR 132, or HVA 105, 132 or permission from the instructor.

HVA 204 introduces you to the field of direct digital controls.

HVA 205 International Residential Code – Mechanical & Fuel Gas

2 credits

HVA 205 covers the mechanical and fuel gas requirements of the IRC. Students will be given the opportunity to learn and apply the general requirements of this code. The course will review and apply the sizing requirements of parts V & VI of this code.

HVA 206 International Mechanical Code

4 credits

HVA 206 reviews in detail the International Mechanical Code. The course is intended to give those entering the HVAC/R trade as well as experienced trades people taking certification examinations a solid knowledge of this code.

HVA 208 International Fuel Gas Code**4 credits**

HVA 208 reviews the general requirements of applicable chapters of the IFGC. Students are given the opportunity to learn system sizing which includes: fuel gas piping, gas appliance venting, and combustion air.

HVA 226 Boiler Operator**4 credits**

Prerequisite: Documentable boiler experience or permission of the instructor
HVA 226 gives the student opportunity to learn all facets of boiler operation, maintenance and repair. The course will review mathematical formulas used in boiler plant operation.

HVA 231 Pneumatic Controls**4 credits**

Prerequisite: HVA 102,105,132 or permission of the instructor
HVA 231 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.

HVA 232 Advanced Air Conditioning and Refrigeration Controls**4 credits**

Prerequisite: HVA 102, HVA 105, HVA 113, HVA 132
HVA 232 covers the advanced study of air conditioning and refrigeration controls

HVA 233 Advanced Refrigeration**4 credits**

Prerequisite: HVA 100, 102, 105, 113, 132
HVA 233 builds on the skills acquired in refrigeration fundamentals. The student will have an opportunity to study and to work on rooftop units, ice machines, and commercial reach-in and walk-in coolers

HVA 235 Specialty Refrigeration Units**4 credits**

Prerequisite: HVA 100, 102, 105, 113, 132, 233
HVA 235 covers the advanced study of refrigeration equipment such as cascade refrigeration units, and two stage refrigeration units.

HVA 236 Stationary Engineer**4 credits**

Prerequisite: Documented heat plant experience or permission of the instructor.
HVA 236 allows the student to learn all aspects of boiler operation and auxiliary equipment. It will further prepare students for the stationary engineer examination.

HVA 240 Servicing Forced Air Systems**4 credits**

Prerequisite: HVA 100,110,105, 140, 162 or permission of the instructor.
HVA 240 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.

HVA 247 Hot Water Heating Systems**4 credits**

Prerequisite: HVA 105, HVA 110, HVA 111, HVA 162 or permission of the instructor.
HVA 247 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 convactor sizing are also discussed.

HVA 250 Designing Forced Air Systems**4 credits**

Prerequisite: HVA 110, 206 and CON 100, 105 or permission of the instructor
HVA 250 covers the installation, design and layout of residential forced air systems and accessories. Topics include: installation of equipment and application of national standards and local codes.

HVA 251 Building Automation I, Installer**4 credits**

Prerequisite: Basic understanding of PCs and Windows operating system, wiring skills and HVAC experience.
HVA 251 provides the student with an over view of Building automation systems. This course helps the student understand the installation of building automation devices with regard to HVAC equipment.

HVA 252 Building Automation II, Service**4 credits**

HVA 252 covers operating and modifying an installed building automation system. This is a highly interactive course where you will learn and exercise common applications of a building management system.

HVA 253 Building Automation III, Advanced Operations**4 credits**

Prerequisite: HVA 252
HVA 253 covers complete set up and programming of a building automation system. The class includes extensive hands-on workshops.

HVA 257 Low-Pressure Steam Heating**4 credits**

Prerequisite: HVA 110, 105, 111, 206, 162, 247 or permission of the instructor. HVA 257 examines low pressure steam systems including boilers, piping, heat convectors. Repair and maintenance of these systems is covered as well as theory behind their operation. Boiler feed water and condensate systems are also discussed.

HVA 260 Estimating HVAC/R Systems**4 credits**

HVA 260 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.

HVA 261 A/C Systems Service and Repair**4 credits**

Prerequisite: HVA 100, 102, 105, or permission from instructor
HVA 261 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.

HVA 263 Chillers**4 credits**

Prerequisite: HVA 100, 102, 105, 113, 132
HVA 263 introduces you to chillers and their operating parameters.

HVA 264 Evaporative Cooling Systems Water Treatment**4 credits**

Prerequisite: HVA 100, 102, 103, 105, 113, 132, or permission from the instructor
HVA 264 covers aspects of commercial and residential evaporative cooling systems. Areas examined include maintenance to these systems, water treatment, sizing, pumps and piping.

HVA 265 Commercial Heating Systems**4 credits**

Prerequisite: HVA 100, 101, 105, 112, 200, 240, 247 or permission of the instructor.
HVA 265 covers the maintenance and repair of the typical heating systems used in commercial structures and multi-family dwellings. This course includes study in warm air and hydronic systems. Flame safeguard systems are also studied. Those interested in this course must have previous experience with residential heating systems.

HVA 267 Radiant Heating Systems**4 credits**

Prerequisite: HVA 110, 105, 111, 162, 247 or permission of the instructor
HVA 267 covers the theory of operation, installation and maintenance of warm water radiant heating systems in a combination of lecture and lab. 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 trouble-shoot all conventional residential warm water, radiant panel heating systems.

HVA 268 Advanced Hydronic Controls**4 credits**

Prerequisite: HVA 111, 110, 105, 162, 231, 247, 267, 265 or permission of the instructor
HVA 268 course takes the operation of hydronic heating systems and allows the student to apply the knowledge of advanced hydronic controls to them. The student must have a solid field background or education in hydronic heating, electricity and heating controls prior to enrollment.

HVA 269 Indoor Air Quality and Ventilation**4 credits**

HVA 269 informs experienced HVAC contractors and service technicians of problems associated with indoor air quality and methods for improvement of the indoor environment. The Mechanical Code and other national standards are covered as well.

HVA 275 Special Topics**0.5-6 credits**

HVA 275 provides students with a vehicle to pursue in depth exploration of special topics of interest.

HVA 280 Internship**0.5-6 credits**

Prerequisite: Permission of the instructor
HVA 280 gives you an opportunity to apply their course studies in a specific area.

HVA 285 Independent Study**0.5-6 credits**

Prerequisite: Permission of the instructor
HVA 285 students will work with the instructor on a specific area with specific objectives and a predetermined project completion date

HWE— Health and Wellness

www.rccc.edu/health

HWE 100 Human Nutrition**3 credits**

HWE 100 introduces basic principles of nutrition with emphasis on personal nutrition. Satisfies nutrition requirement of students entering health care professions

HWE 101 Cardio-Pulmonary Resuscitation (CPR)**1 credit**

HWE 101 teaches emergency procedures for respiratory, obstructed airway and cardiac arrest victims of all ages. It meets certification requirements of the American Red Cross and the American Heart Association.

HWE 120 Wilderness First Aid**1 credit**

HWE 120 provides limited medical information to cope with basic wilderness emergencies.

HWE 129 Wilderness First Responder

4 credits

HWE 129 provides the student with those skills and emergency medical care techniques used by guides, trip leaders and others providing primary care in backcountry setting. The student will be able to respond correctly to those medical and trauma situations commonly encountered when entry into the EMS system is delayed or unlikely.

ITA-Italian

www.rrcc.edu/languages

ITA 101 Conversational Italian I

3 credits

ITA 101 provides the first course in a sequence for beginning students who wish to understand and speak Italian. The material includes basic vocabulary, grammar, and expressions that are used in daily situations and in travel.

ITA 102 Conversational Italian II

3 credits

Prerequisite: ITA 101 or permission for instructor.

ITA 102 provides the second course in a sequence for students who wish to understand and speak Italian. The material continues to cover basic conversational patterns, expressions, and grammar.

JPN - Japanese

JPN 101 Conversational Japanese I

3 credits

JPN 101 introduces beginning students to conversational Japanese and focuses on understanding and speaking Japanese. It covers basic vocabulary, grammar, and expressions that are used in daily situations and in travel.

JPN 102 Conversational Japanese II

3 credits

Prerequisites: JPN 101 or instructor permission.

JPN 102 continues the sequence for beginning students who wish to understand and speak Japanese. It covers basic conversational patterns, expressions, and grammar.

LIT- Literature

www.rrcc.edu/english

LIT 115 Introduction to Literature I

3 credits

LIT 115 introduces students to fiction, poetry, and drama. The course emphasizes active and responsive reading.

LIT 127 Study of the Novel

3 credits

LIT 127 focuses on careful reading and interpretation of selected novels representing types and periods of literature. Students will examine formal as well as thematic elements of longer fiction. Critical thinking, discussion, and writing about novels will enhance perceptive reading skills and heighten awareness of the human condition.

LIT 145 Women in Literature and Society

3 credits

LIT 145 reviews a significant world literature from the standpoint of depiction of women in literature as a reflection of women's roles in society.

LIT 201 Masterpieces of Literature I

3 credits

LIT 201 examines significant writings in world literature from the ancients through the Renaissance. The course emphasizes careful readings and understanding of the works and their cultural backgrounds.

LIT 202 Masterpieces of Literature II

3 credits

LIT 202 examines significant writings in world literature from the seventeenth century to the present. The course emphasizes careful reading and understanding of the works and their cultural backgrounds.

LIT 211 Survey of American Literature I

3 credits

LIT 211 provides an overview of American literature from the Native American through the nineteenth century Romantics and explores ideas, historical and social contexts, themes and literary characteristics of works in various genres by major writers.

LIT 212 Survey of American Literature II

3 credits

LIT 212 provides an overview of American literature from the mid-nineteenth century to the present and 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

LIT 221 provides 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

LIT 222 provides an overview of British literature from the 18th century to 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**

LIT 225 explores a selection of works by William Shakespeare. The course focuses on careful reading and interpretation of the plays and poems, includes pertinent information about Elizabethan England, and examines formal as well as thematic elements of the selected works.

LIT 232 Gothic Literature**3 credits**

LIT 232 provides an overview of Gothic Literature from the 1750's to the present. The coursework emphasizes careful reading, analysis, interpretation, and understanding of the work and their cultural and historical backgrounds. Critical thinking, discussion, and writing about significant works of Gothic literature will be used as tools to develop discriminating reading skills for lifetime enjoyment.

LIT 235 Science Fiction**3 credits**

LIT 235 examines the techniques and issues of science fiction through a close reading of a variety of writers in the genre.

LIT 255 Children's Literature**3 credits**

LIT 255 evaluates the criteria for selecting appropriate literature for children through exploration of genres, age levels, and values taught through literature, and the literary and artistic quality of various texts.

LIT 257 Literature and Film**3 credits**

LIT 257 examines the relationship between literature and motion pictures, emphasizing the technique and interpretive function of filmmakers.

LIT 285 Independent Study**3 credits**

LIT 285 explores particular authors, topics, or themes in depth, such as Ibsen, Faulkner, Twain, or great fiction of the nineteenth century.

**MAN-
Management**

www.rccc.edu/business

MAN 116 Principles of Supervision**3 credits**

MAN 116 introduces the principles and techniques of supervising and motivating personnel. The course is designed for students who are interested in supervising others or for those currently in supervision. Course content focuses on the human interaction in supervision.

MAN 117 Time Management**1 credit**

MAN 117 provides students with the conceptual knowledge and tools to make better use of their time in the management function. (Fall semester only)

MAN 200 Human Resource Management I**3 credits**

MAN 200 provides a broad overview of the contemporary issues, theories and principles used to effectively manage human resources. Topics include recruiting, hiring, compensation and benefits, training and development, employee relations and legal issues.

MAN 212 Negotiation and Conflict Resolution**3 credits**

MAN 212 presents proper techniques in negotiation and conflict resolution. Key practices that determine successful negotiation are explored. The course covers principles of conflict resolution, including business policies; accepted business practices, contracts, purchases, labor union contracts, pay raises and starting salaries.

MAN 215 Organizational Behavior**3 credits**

MAN 215 examines the behaviors of groups and individual members of organizations and how behavior can be influenced. The course emphasis is on the tools managers use to achieve organizational effectiveness.

MAN 224 Leadership**3 credits**

MAN 224 focuses on the leadership skills necessary to bring about change in an organization. Students learn to develop and communicate a shared vision, to empower employees, to manage conflict, to negotiate, and to develop organizations so that all are working toward common goals.

MAN 225 Managerial Finance**3 credits**

MAN 225 examines the concepts and techniques used to analyze financial accounting information for managerial planning, decision-making and control. The focus of the course is on decision making relating to the areas of budgets, forecasts, cost volume production, ROI and financial statements.

MAN 226 Principles of Management**3 credits**

MAN 226 is a survey of the principles of management. Emphasis is on the primary functions of planning, organizing, leading and controlling with a balance between the behavioral and operational approaches.

MAN 275 Special Topics**1-3 credits**

MAN 275 provides students with a vehicle to pursue special topics of interest in business. The content of this course is designed on an as needed basis to provide current, up-to-date information.

MAN 285 Independent Study**1-3 credits**

Prerequisite: Permission of the Instructor

MAN 285 meets the individual needs of students. Students engage in intensive study or research under the direction of a qualified instructor.

MAN 287 Cooperative Education/Internship

1-3 credits

Prerequisite: Permission of the Instructor

MAN 287 provides students with the opportunity to supplement course work with practical work experience related to their educational program and occupational objectives. Students are placed at approved workstations, which are related to their program of study. They work under the immediate supervision of experienced personnel at the business location and with the direct guidance of the instructor/coordinator.

MAR- Marketing

www.rccc.edu/business

MAR 111 Principles of Sales

3 credits

Prerequisite: BUS 115

MAR 111 enables you to understand and develop ethical sales techniques and covers the role of selling in the marketing process. Areas of emphasis include behavioral considerations in the buying and selling process and sales techniques.

MAR 216 Principles of Marketing

3 credits

MAR 216 presents the analysis of theoretical marketing processes and the strategies of product development, pricing, promotion and distribution, and their applications to businesses and the individual consumer.

MAR 217 e-Commerce Marketing

3 credits

MAR 217 explores new marketing strategies that have emerged as areas of information technology and the Internet have evolved. Students examine traditional marketing concepts of buying behavior, promotion, production and others, then redefines them as they apply to marketing on the World Wide Web. Web fundamentals, e-marketing trends, strategies, models and research will be examined.

MAR 275 Special Topics

1-3 credits

MAR 275 provides students with a vehicle to pursue special topics of interest in business. The content of this course is designed on an as needed basis to provide current information.

MAR 285 Independent Study

1-3 credits

Prerequisite: Permission of instructor
MAR 285 meets the individual needs of students. Students engage in intensive study or research under the direction of a qualified instructor.

MAR 287 Cooperative Education/Internship

1-3 credits

Prerequisite: Permission of instructor
MAR 287 provides students with the opportunity to supplement course work with practical work experience related to their educational program and occupational objectives. Students are placed at approved work stations, which are related to their program of study. They work under the immediate supervision of experienced personnel at the business location and with the direct guidance of the instructor/coordinator.

MAT- Mathematics

www.rccc.edu/math

MAT 030 Fundamentals of Mathematics

2 credits

Prerequisites: Math assessment
MAT 030 includes the vocabulary, operations and applications of whole numbers, decimals and basic fractions and mixed numbers.

MAT 060 Pre-Algebra

3 credits

Prerequisites: MAT 030 (Grade C or better) or math assessment
MAT 060 furthers the study of fractions and mixed numbers. Also included are vocabulary, operations and applications of ratio, proportion, percent, area, perimeter, US and metric measures, integers, and an introduction to algebraic expressions and the solution of basic first-degree equations.

MAT 090 Introductory Algebra

4 credits

Prerequisites: Math 060 (Grade C or better) or math assessment.

MAT 090 includes first-degree equations, inequalities, formulas, polynomials, algebraic fractions, factoring polynomials, solving quadratic equations by factoring, and applications. Coordinate geometry, graphing linear equations and inequalities, and systems of linear equations may be included.

MAT 106 Survey of Algebra

4 credits

Prerequisite: Math 090 (Grade C or better) or math assessment.

MAT 106 emphasizes problem solving with further study of equations, slope, inequalities, systems of equations, polynomials, quadratic equations, rational expressions, rational exponents, radical expressions, graphing and applications. A graphing calculator or equivalent software may be used.

MAT 107 Career Math

3 credits

Prerequisites: MAT 060 (Grade C or better) or math assessment

MAT 107 covers material designed for career technical students or general studies 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 students enrolled in the course.

MAT 111 Technology Lab for Algebra

1 credit

MAT 111 explores and applies algebraic topics in a laboratory course using graphing calculators.

MAT 120 Mathematics for the Liberal Arts**4 credits**

Prerequisites: MAT 106 (Grade C or better) or math assessment.

MAT 120 develops mathematical and problem-solving skills. Appropriate technological skills are included. Content is selected to highlight connections between mathematics and the society in which we live. Topics include set theory and logic, mathematical modeling, probability and statistical methods, and consumer mathematics. Additional content will include one topic in geometry, numeration systems, decision theory, or management science.

MAT 121 College Algebra**4 credits**

Prerequisite: MAT 106 (Grade C or better) or equivalent competency

MAT 121 includes a brief review of intermediate algebra, equations, and inequalities, functions and their graphs, exponential and logarithmic functions, linear and non-linear systems, selection of topics from among graphing of the conic sections, introduction to sequences and series permutations and combinations, the binomial theorem and theory of equations.

MAT 122 College Trigonometry**3 credits**

Prerequisite: MAT 121 (Grade C or better).

MAT 122 covers topics including trigonometric functions (with graphs and inverse functions), identities and equations, solutions of triangles, complex numbers, and other topics as time permits. This is a traditional prerequisite course to the calculus sequence.

MAT 123 Finite Mathematics**4 credits**

Prerequisites: MAT 106 (Grade C or better).

MAT 123 covers topics including functions, matrix algebra, linear programming, and an introduction to probability and counting techniques. Emphasis is on applications. This course may include other topics such as statistics when time permits. This course is primarily intended for business, life science, or social science majors.

MAT 125 Survey of Calculus**4 credits**

Prerequisite: MAT 121 or MAT 123 (Grade C or better).

MAT 125 includes derivatives, integrals, and their applications, with attention restricted to algebraic, exponential, and logarithmic functions for business, life science and/or social science majors.

MAT 135 Introduction to Statistics**3 credits**

Prerequisite: MAT 106 (Grade C or better).

MAT 135 includes data presentation and summarization, introduction to probability concepts and distributions, statistical inference, estimation, hypothesis testing, and comparison of populations, correlation and regression.

MAT 155 Integrated Math I**3 credits**

Prerequisite: MAT 106 (Grade C or better).

MAT 155 covers topics including natural numbers, integers, rational numbers, relations, functions, and equations. This course is the first of a two course sequence particularly pertinent to prospective arithmetic teachers, presenting arithmetic and algebra from a modern approach.

MAT 156 Integrated Math II**3 credits**

Prerequisite: Math 155 (Grade C or better).

MAT 156 continues MAT 155. The course includes the study of the fundamentals of probability, statistics, and informal Euclidean geometry suitable for K-8 curriculum, employing laboratory techniques where applicable.

MAT 166 Pre-Calculus**5 credits**

Prerequisites: Permission of Math Department Chair.

MAT 166 is a fast paced review of college algebra and college trigonometry intended for those planning to take calculus. Topics include algebraic manipulations, properties of algebraic and trigonometric functions and their graphs, trig identities and equations, conic sections, polar coordinates and parametric equations.

MAT 175 Special Topics**1-3 credits**

Prerequisite: Permission of instructor
MAT 175 provides students with a vehicle to pursue in depth exploration of special topics of interest.

MAT 185 Independent Study**1-3 credits**

Prerequisite: Permission of instructor
MAT 185 provides an opportunity for the highly motivated student to engage in intensive study and research on a specified topic under direction of a faculty member.

MAT 201 Calculus I**5 credits**

Prerequisite: College Algebra and Trigonometry (Grade C or better).

MAT 201 introduces single variable calculus and analytic geometry. Topics for this course include limits, continuity, derivatives, and applications of derivatives as well as indefinite and definite integrals and some applications.

MAT 202 Calculus II**5 credits**

Prerequisite: Calculus I (Grade C or better) or permission of instructor.

MAT 202 is a continuation of single variable calculus, which will include techniques of integration, polar coordinates, analytic geometry, improper integrals, and infinite series.

MAT 204 Calculus III with Engineering Applications**5 credits**

Prerequisite: Calculus II (Grade C or better) or equivalent

MAT 204 includes all the topics of a traditional Calculus III course with an additional emphasis on word problems and problem solving. This is the third course in the three-course calculus sequence. This course will additionally contain a thorough examination of multiple integration. This will include double and triple integrals, line integrals, Stokes' and Green's Theorems, and their applications. A graphing calculator is required for this course.

MAT 255 Linear Algebra

3 credits

Prerequisite: successful completion of Calculus III (Grade C or better)

MAT 255 includes vector spaces, matrices, linear transformations, matrix representation, eigenvalues, and eigenvectors.

MAT 261 Differential Equations with Engineering Applications

4 credits

Prerequisite: Calculus III (Grade C or better) or equivalent

MAT 261 introduces ordinary differential equations. The content of this course includes all the topics of a traditional Introduction of ODE's course with an additional emphasis on applications and problem solving. A graphing calculator is required for this course.

MAT 285 Independent Study

1-3 credits

Prerequisite: Permission of Instructor
MAT 285 provides an opportunity for the highly-motivated student to engage in intensive study and research on a specified topic under direction of a faculty member

MGD - Multimedia Graphic Design

www.rccc.edu/multimedia

MGD 101 Introduction to Computers for Graphics

3 Credits

MGD 101 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.

MGD 102 Introduction to Multimedia

3 Credits

Recommended: MGD 101

MGD 102 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.

MGD 103 Production Design

3 Credits

Recommended: MGD 101

MGD 103 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.

MGD 104 Videography

3 Credits

Recommended: MGD 101

MGD 104 offers an introduction to the principles and techniques of videotape production, including camera operation, basic script writing, lighting, sound and basic digital editing. Examination of the pre-production, production, and post-production processes, as well as aesthetics, will be included.

MGD 111 Adobe Photoshop I

3 Credits

Recommended: MGD 101

MGD 111 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.

MGD 112 Adobe Illustrator I

3 Credits

Recommended: MGD 101

MGD 112 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.

MGD 113 QuarkXPress

3 Credits

Recommended: MGD 101

MGD 113 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.

MGD 114 Adobe InDesign

3 Credits

Prerequisite: MGD 103

MGD 114 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.

MGD 118 Digital Color Theory

3 Credits

Prerequisites: MGD 111 or MGD 112

MGD 118 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.

MGD 121 Painter for Digital Media

3 Credits

Prerequisite: MGD 111 or MGD 112

MGD 121 teaches students how to work with an illustration and paint software application 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.

MGD 122 Sculpting for Digital Media**3 Credits**

Prerequisite: MGD 153 or Permission of Instructor

MGD 111 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.

MGD 123 Bryce**3 Credits**

Prerequisite: MGD 111

MGD 123 will exploit the unique abilities of 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.

MGD 141 Web Design I: Dreamweaver**3 Credits**

Prerequisite: MGD 111 or MGD 112

MGD 141 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.

MGD 143 Web Motion Graphic Design I: Flash**3 Credits**

Prerequisite: MGD 112 and MGD 141

MGD 143 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.

MGD 152 Digital Animatics**3 Credits**

Prerequisite: MGD 101

MGD 152 introduces the steps followed by professional animators and game designers for producing media in a digital environment. Students learn the foundational skills of planning, organizing, storyboarding and pre-visualization techniques necessary to create animatic stories. Students will also study the history of animation and game design.

MGD 153 3D Animation I: Cinema 4D**3 Credits**

Prerequisite: MGD 111

MGD 153 encompasses all major aspects of creating 3D characters using animation software. Using developed characters, the student will learn how to animate for personality.

MGD 161 Director I**3 Credits**

Prerequisite: MGD 111

MGD 161 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.

MGD 163 Sound Design I**3 Credits**

Prerequisites: MGD 101 or MGD 161

MGD 163 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.

MGD 164 Digital Video Editing I: Final Cut Pro**3 Credits**

Prerequisite: MGD 101 and MGD 111

MGD 164 is an introduction to digital non-linear 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.

MGD 165 After Effects I**3 Credits**

Prerequisite: MGD 111

MGD 165 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.

MGD 167 Game Design I**3 Credits**

Prerequisite: MGD 153 and MGD 161

MGD 167 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.

MGD 175 Special Topic: Maya I**3 Credits**

Prerequisites: MGD 152 & MGD 153

MGD 175 introduces students to Maya, a high-end character animation tool. Emphasis is on building models of various types. Students learn setting up and animating scenes for render in movie format.

MGD 211 Adobe Photoshop II**3 Credits**

Prerequisite: MGD 111 or equivalent experience

MGD 211 develops and reinforces image composition techniques learned in MGD 111. Fundamentals are continuously reinforced as new design techniques are introduced.

MGD 212 Adobe Illustrator II**3 Credits**

Prerequisite: MGD 112

MGD 212 enables the student to continue development of digital drawing skills through practice and use of state-of-the-art design illustration software learned in MGD 112.

MGD 213 Electronic Prepress**3 Credits**

Prerequisite: MGD 113 or MGD 114

MGD 213 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.

MGD 241 Web Design II:**Dreamweaver****3 Credits**

Prerequisite: MGD 141

MGD 241 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.

MGD 243 Web Motion Graphic Design II:Flash**3 Credits**

Prerequisite: MGD 143

MGD 243 will stress the complex creation of 2D animated motion graphics concentrating on the prior skills learned and the use of scripting and behaviors. Students will create motion graphics using these skills and apply them to web sites. Web site justification of motion graphics will be stressed, appraised and weighed.

MGD 253 3D Animation II:**Cinema 4D****3 Credits**

Prerequisite: MGD 153

MGD 253 addresses more advanced aspects of creating 3D characters on the computer. Students also examine facial animation, lip synchronization, scene design and lighting set-ups.

MGD 257 Animation Production**3 Credits**

MGD 257 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.

MGD 258 Web Design Production**3 Credits**

MGD 258 stresses web site development and usability issues, as well as, pre-production, production and post-production concepts. Students will prepare project evaluations, objectives & analysis reports, project budgets, timelines, content outlines, storyboards, and flow charts. Students will also examine interactive interface design for several Web applications. Projects will vary from semester to semester.

MGD 259 Management and Production**3 Credits**

MGD 259 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.

MGD 261 Director II**3 Credits**

Prerequisite: MGD 161

MGD 261 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.

MGD 263 Sound Design II**3 Credits**

Prerequisite: MGD 163

MGD 263 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.

MGD 264 Digital Video Editing II: Final Cut Pro**3 Credits**

Prerequisite: MGD 164

MGD 264 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.

MGD 265 After Effects II**3 Credits**

Prerequisite: MGD 165

MGD 265 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.

MGD 266 DVD Authoring**3 Credits**

Prerequisite: MGD 161 and MGD 164

MGD 266 introduces students to all aspects of DVD authoring; covering source acquisition, DVD production, interface design, organization, management and appropriate DVD output solutions.

MGD 267 Game Design II**3 Credits**

Prerequisite: MGD 167

MGD 267 explores more advanced features of game design. Students examine such things as integration of main-line code, subroutines and interrupts into game structure. I/O structure, play-testing and distribution are emphasized.

**MGD 275 Special Topic: Maya II
3 Credits**

Prerequisite: MGD 175

MGD 275 explores in-depth Maya's animation techniques. Also, the student will be exposed to rigging characters for animation.

MGD 280 Internships

Prerequisite: Permission of Advisor

MGD 280 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.

MGD 285 Independent Study

Prerequisite: Permission of Instructor

MGD 285 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.

**MOT-
Medical Office
Technology****MOT 110 Medical Office
Administration****4 credits**

Co-requisite: MOT 120

MOT 11 introduces the administrative duties specifically used in medical offices.

**MOT 120 Medical Office Financial
Management****3 credits**

Co-requisite: MOT 110

MOT 120 covers the practical uses of accounts and records with emphasis on accounting principles and analysis for use in a medical office.

**MOT 130 Insurance Billing and
Coding****3 credits**

MOT 130 introduces outpatient coding with an ultimate goal to present a clear picture of medical procedures and services performed (CPT codes), correlating the diagnosis, symptom, complaint or condition (ICD-9 codes), thus establishing the medical necessity required for third party reimbursement.

**MOT 136 Introduction to Clinical
Skills****2 credits**

Prerequisite: HPR 178, BIO 106

MOT 136 provides hands on experience with the basic clinical skills required for assisting with patient care. Delivers the theory behind each skill presented as well as proper technique for performing each skill. It includes knowledge and/or performance of blood borne pathogens/OSHA regulations, medical asepsis, procedural gloving, patient gowning, positioning and measurement of vital signs.

**MOT 138 Medical Assisting
Laboratory Skills****4 credits**

Prerequisite: BIO 106, HPR 178

Co-requisite: MOT 136

MOT 138 introduces students to basic routine laboratory skills and techniques for collection, handling, and examination of laboratory specimens often encountered in the ambulatory care setting. Emphasizes hands-on experience.

**MOT 140 Medical Assisting
Clinical Skills****4 credits**

Prerequisite: BIO 106, HPR 178, MAT 060 or higher or NUR 101, MOT 136

Co-requisite: MOT 138

MOT 140 provides hands on experience with the clinical skills required for assisting with patient care. Delivers the theory behind each skill presented as well as proper technique for performing each skill.

**MOT 150 Pharmacology for
Medical Assistants****3 credits**

Prerequisite: BIO 106, HPR 178

MOT 150 provides an overview of pharmacology language, abbreviations, systems of measurement and conversions. The Controlled Substances Act, prescriptions, forms of medications, patient care applications, drug classifications/interactions, and safety in drug therapy and patient care are presented. Information regarding the measurement of medications, dosage calculations, routes of administration, and commonly prescribed drugs in the medical office is provided.

**MOT 181 Administrative
Internship****2 credits**

Prerequisite: Successful completion of M.O. program requirements with a "C" or better in all core classes.

MOT 181 provides supervised placement in contracted facility for guided experience in application of knowledge and skill acquired in the classroom. Positions are non-paid due to CAAHEP requirement. Student must have permission by program coordinator to begin internship.

MOT 182 Clinical Internship**3 credits**

Prerequisite: Successful completion of M.A. program requirements with a grade of "C" or better in all core classes. Documentation of required immunizations and CPR certification.

MOT 182 provides supervised placement in contracted facility for guided experience in applications of knowledge and skills acquired in the classroom. Positions are non-paid due to CAAHEP requirement. Student must have permission by program coordinator to begin internship.

**MOT 183 Medical Assistant
Internship****5 credits**

Prerequisite: successful completion of M.A. program requirements with a grade of "C" or better in all core classes. Documentation of required immunizations and CPR certification.

Same as MOT 181 and MOT 182

MOT 183 provides supervised placement in 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. Positions are non paid due to CAAHEP requirement. Student must have permission by program coordinator to begin internship.

**MOT 189 Review for Medical
Assistant National Examination****1 credit**

MOT 189 prepares the candidate sitting for the National Registration/Certification Examination for Medical Assistant through review and practice. These examinations are given with the intent of evaluating the competency of entry level practitioners in Medical Assisting, therefore supporting quality care in the office or clinic.

MUS- Music

www.rccc.edu/arts/music

MUS 100 Fundamentals of Music Theory

3 credits

MUS 100 is designed to help the beginning music student, or those students with a limited background in music theory, to study the basic elements of music, including notation, rhythm, scales, key signatures, intervals, and chords.

MUS 101 Introduction to Music Theory

3 credits

Prerequisite: MUS 100, or permission of the instructor

MUS 101 presents music fundamentals, diatonic four-part harmony, analysis, and keyboard harmony for non-music majors.

MUS 105 Introduction to Electronic/Computer Music

3 credits

MUS 105 explores the elements of electronic music and demonstrates some of the most popular music software for the Macintosh and IBM computers, including music notation and music sequencing programs. Achieving a fundamental working knowledge of setup and recording procedures on a personal computer is stressed. Equipment is provided and beginner's knowledge on either the Macintosh or IBM computer is helpful, but not essential.

MUS 120 Music Appreciation

3 credits

MUS 120 covers the basic materials of music, musical forms, media, genres, and musical periods. This course emphasizes the development of tools for intelligent listening and appreciation.

MUS 121 Music History I

3 credits

MUS 121 studies the various periods of music history with regard to the composers, aesthetics, forms, and genres of each period. This course considers music from the Middle Ages through the Classical period.

MUS 122 Music History II

3 credits

No prerequisite.

MUS 122 continues Music History I with a study of music from the early Romantic period to the present.

MUS 125 History of Jazz Music

3 credits

MUS 125 provides an overview of the history of jazz in America, and provides basic listening skills for the understanding and appreciation of jazz music.

MUS 126 History of American Popular Music

3 credits

MUS 126 provides a survey of the history and literature of American popular music from 1600 to the present. Through the study of the many ethnic influences that contribute to the diverse musical landscape of American popular music, the student acquires an appreciation of this rich musical heritage. These musical styles have evolved out of the diversity of America and are performed and enjoyed throughout the world.

MUS 141 Private Instruction

2 credits

Prerequisite: Permission of the instructor. An additional fee is required.

MUS 141 offers private instruction consisting of a thirty-minute lesson and a performance seminar per week. Participation in a performance is required at least once each term. First year, first term.

MUS 142 Private Instruction II

2 credits

Prerequisite: MUS 141 in same instrument. An additional fee is required.

MUS 142 offers private instruction consisting of a thirty-minute lesson and a performance seminar per week. Participation in a student performance is required at least once each term. First year, second term.

MUS 143 Private Instruction III

2 credits

Prerequisite: MUS 142 in same instrument. An additional fee is required.

MUS 143 offers private instruction consisting of a thirty-minute lesson and a performance seminar per week.

Participation in a student performance is required at least once each term.

First year, third term.

MUS 151 Ensemble I

1 credit

Prerequisite: Permission of instructor.

MUS 151 rehearses and performs various types of musical literature. First year, first term.

MUS 152 Ensemble II

1 credit

Prerequisite: Permission of instructor

MUS 152 rehearses and performs various types of musical literature. First year, second term.

MUS 175 Special Topics

1-6 credits

Prerequisite: Permission of instructor
MUS 175 covers specific topics in music. This course is offered as needed for credit appropriate to the topic. Each offering includes a description of the topic(s).

MUS 184 Internship

1-3 credits

Prerequisite: Permission of instructor

MUS 184 provides students with the opportunity to supplement coursework with practical work experience related to their educational program. Students work under the immediate supervision of experienced personnel at the business location and with the direct guidance of the instructor.

MUS 241 Private Instruction

2 credits

Prerequisite: MUS 142 or MUS 143 in same instrument. An additional fee is required.

MUS 241 offers private instruction consisting of a thirty-minute lesson and a performance seminar per week.

Participation in a student performance is required at least once each term.

Second year, first term.

MUS 242 Private Instruction II **2 credits**

Prerequisite: MUS 241 in same instrument.

An additional fee is required.

MUS 242 offers private instruction consisting of a thirty-minute lesson and a performance seminar per week.

Participation in a student performance is required at least once each term.

Second year, second term.

MUS 243 Private Instruction III **2 credits**

Prerequisite: MUS 242 in same instrument. An additional fee is required.

MUS 243 offers private instruction consisting of a thirty-minute lesson and performance seminar per week.

Participation in a student performance is required at least once each term.

Second year, third term.

MUS 251 Ensemble I **1 credit**

Prerequisite: Permission of instructor
MUS 251 rehearses and performs various types of musical literature. Second year, first term.

MUS 252 Ensemble II **1 credit**

Prerequisite: Permission of instructor.
MUS 252 rehearses and performs various types of musical literature. Second year, second term.

MUS 275 Special Topics **1-3 credits**

Prerequisite: Permission of instructor
MUS 275 covers specific topics in music. This course is offered as needed for credit appropriate to the topic and each offering includes a description of the topic(s).

MUS 284 Internship **1-3 credits**

Prerequisite: Permission of instructor
MUS 284 provides students with the opportunity to supplement coursework with practical work experience related to their educational program. Students work under the immediate supervision of experienced personnel at the business location and with the direct guidance of the instructor.

NUA- Nursing Assistant

www.rccc.edu/health

NUA 101 Certified Nurse Aide Health Care Skills

4 credits

Prerequisite: HPR 102 or current health care provider BLS.

Co-requisite: NUA 170 Nurse Aide Clinical 1 credit

NUA 101 prepares the student to perform the fundamental skills of the nursing assistant. Basic nursing skills, restorative services, personal care skills, safety and emergency care issues are covered in theory and lab. The student will learn skills that address mental health needs as well as patient/resident/client rights.

NUA 170 Nurse Assistant Clinical Experience

1 credit

Prerequisite: HPR 102 or current health care provider BLS.

Co-requisite: NUA 101 Certified Nurse Aide Health Care Skills

NUA 170 applies the knowledge gained from NUA 101 in a clinical setting.

NUR- Nursing Refresher Programs

www.rccc.edu/health

NUR 190 Licensed Practical Nurse Refresher

10 credits

Prerequisite: HPR 102 or current health care provider BLS.

Co-requisite: NUR 191

NUR 190 is designed for all Licensed Practical Nurses (LPNs), regardless of time absent from nursing practice, to refresh basic nursing skills.

NUR 191 Licensed Practical Nurse Clinical Experience

2 credits

Prerequisite: HPR 102 or current health care provider BLS. Co-requisite: NUR 190
NUR 191 applies the knowledge gained from NUR 190 in a clinical setting.

R.N. Refresher Course

NUR 290 Registered Nurse Refresher

10 credits

Prerequisite: HPR 102 or current health care provider BLS.

Co-requisite: NUR 291

NUR 290 is designed for all Registered Nurses (RNs), regardless of time absent from nursing practice, to refresh basic nursing skills.

NUR 291 Registered Nurse Clinical Experience

2 credits

Prerequisite: HPR 102 or current health care provider BLS.

Co-requisite: NUR 290

NUR 291 applies the knowledge gained from NUR 290 in a clinical setting.

PAP- Physician Assistant Program

www.rccc.edu/pa

Students must be accepted into the PA Program to take any PAP course.

PAP 200 Biochemistry and Cell Biology

3 credits

PAP 200 introduces some of the major topics in modern biochemistry, cell biology, and human genetics through the study of the chemistry of proteins, carbohydrates, lipids, and nucleic acids, and covers how these components function and are involved in basic metabolic processes, such as cellular respiration, lipid metabolism, protein synthesis, and DNA replication. The basic conceptual background is provided to allow the PA student to understand disease mechanisms, clinical lab tests, and drug effects.

PAP 203 Role of the PA and Health Care Issues

1 credit

PAP 203 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 and environments. The relationships between the physician assistant, the physician, and other health care providers are explored. The legal, ethical, social, and quality assurance issues involved in PA practice are discussed through case studies.

PAP 205 Human Anatomy and Development

3 credits

PAP 205 presents functional and applied anatomy as it relates to common clinical findings. Provides the PA student with a solid understanding of the structure of the human body, with emphasis on normal versus abnormal findings involving the musculoskeletal, nervous, cardiovascular, urinary, respiratory, digestive, and reproductive systems.

PAP 207 Health Promotion

1 credit

PAP 207 provides clinical preventive services as part of primary care focusing on counseling interventions, screening tests, immunizations, and chemoprophylaxis emphasizing counseling patients about risk factors. The curriculum examines risk and lifestyle factors for various age groups that influence health, such as nutrition, exercise, stress, and substance abuse and addresses conventional and alternative prevention strategies. The discussion of patient counseling focuses on factors influencing behavioral and social determinates of health.

PAP 210 Human Physiology

3 credits

PAP 210 provides 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, temperature regulation, endocrinology, and human reproduction.

PAP 212 Introduction to Emergency Medicine

1 credit

PAP 221 introduces the etiology, evaluation, and initial treatment of common emergencies focusing on an understanding of PA utilization in an emergency department and defining the roles of other treatment team members. Emphasizes recognition of life and limb-threatening conditions and differentiation from non-emergent conditions that includes toxic exposures, poisonings, and the evaluation of the multi-system trauma patient with penetrating and blunt force injuries.

PAP 217 Introduction to Laboratory Medicine

1 credit

PAP 217 teaches students basic diagnostic testing common to practice as a physician assistant emphasizing indications, normal values, and the sensitivity and specificity of diagnostic testing. Microscopic techniques and identification are covered using normal and abnormal specimens.

PAP 218 Evaluation of the Medical Literature

1 credit

PAP 218 provides students with an approach to reading, critically analyzing, and understanding the medical literature while addressing the fundamental principles of epidemiology to enable PA students to 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 History and Physical Examination I

2 credits

PAP 219 teaches the oral techniques required to obtain a complete medical history. Enables the PA student to develop and/or enhance their communication skills and learn to use those skills to interact effectively in professional relationships. This course also explores the links between culture and communication and addresses the communication techniques appropriate to a multicultural society. Techniques required to perform the complete physical examination of patients of all ages are taught utilizing numerous practice sessions and mock patients to develop the practical skills necessary to perform the history taking and physical examination tasks in everyday clinical practice.

PAP 220 History and Physical Examination II

2 credits

PAP 220 is a continuation of PAP 219, and teaches the oral techniques required to obtain a complete medical history. Enables the PA student to develop and/or enhance their communication skills and learn to use those skills to interact effectively in professional relationships. This course also explores the links between culture and communication and addresses communication techniques appropriate to a multicultural society. Techniques required to perform the complete physical examination of patients of all ages are taught utilizing numerous practice sessions and mock patients are used to develop the practical skills necessary to perform the history taking and physical examination tasks in everyday clinical practice.

PAP 221 Clinical Medicine I

3 credits

PAP 221 provides a beginning understanding of how clinicians approach the diagnosis and treatment of specific disease states. In conjunction with the Human Pathology curriculum, students 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. Disease entities studies includes cardiopulmonary, pulmonary, genitourinary, endocrine, hematology, oncology, immunologic, and infectious disease.

PAP 222 Clinical Medicine II**3 credits**

PAP 222 continues PAP 221 with additional presentations and small group experiences that examine common patient conditions in neurology, ophthalmology, otolaryngology, dermatology, orthopedics, and geriatrics focusing on developing patient and assessment treatment plans. Students 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**

PAP 223 emphasizes primary care of the child from birth through adolescence. The PA student is exposed to techniques of history taking and physical examination specific to the pediatric population initially taught in PAP 220. Preventive care topics covered include parental education on anticipatory care and guidance, appropriate milestone recognition, injury and accident prevention, preventive care, home and automobile safety, nutritional fundamentals, and counseling through the age spectrum. Pediatric congenital anomalies and diseases are addressed in a body systems fashion. Also, knowledge of problems unique to the adolescent will enable the PA student to develop skills in evaluation and education of the adolescent on drug abuse, identity issues, human sexuality, peer pressure, and resources for referral.

PAP 224 Introduction to Surgery**1 credit**

PAP 224 provides the PA student with an introduction to the etiology, evaluation, and initial treatment of common surgical conditions and emergencies and an understanding of PA utilization and the roles of other health care team members in surgical practice. Pre-operative, post-operative, surgical complications and care of the surgical patient will be discussed with special emphasis on the pre-operative evaluation and preparation of patients for surgery, and their assistance during the intraoperative period and post-operative care.

PAP 225 Women's Health Care**1 credit**

PAP 225 provides an exposure to problems and issues associated with women's health care primarily in the ambulatory setting. Emphasis is placed on birth control, recognition and treatment of sexually transmitted disease, cancer detection, prenatal care, and the evaluation and management of common gynecologic problems.

PAP 226 Clinical Procedures**1 credit**

PAP 226 is a course designed to teach PA 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 emphasizing wound management, anesthesia, suturing techniques, injections and IV access, nasogastric intubation, and immobilization via casting and splinting.

PAP 228 Problem Based Learning**2 credits**

PAP 228 helps PA students 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 through the use of evidenced-based health care as it relates to clinical outcomes. Emphasis is placed on the problem-based learning format through the presentation of case studies in small groups facilitated by PA course faculty.

PAP 230 Pharmacology I**1 credit**

PAP 230 begins the study of therapeutic pharmacology with emphasis on pharmacokinetics and pharmacodynamics and the review of the physiology that underlies drug contraindications, interactions, and adverse effects.

PAP 231 Pharmacology II**3 credits**

PAP 231 is a continuation of PAP 230, Pharmacology I, 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**

PAP 235 allows 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 on how the disease process begins and proceeds. Where appropriate, presentations in Clinical Medicine I (PAP 221) will accompany the presentations in this course allowing PA students to correlate the pathophysiology of specific diseases with the medical and surgical management of those conditions.

PAP 240 Behavioral Science for the PA**3 credits**

PAP 240 allows PA students explore the relationship between physical illness and psychosocial issues in the medical setting. Interviewing and communication styles unique to behavioral medicine, and how they relate in the presentation and recognition of major psychiatric disorders, mood and anxiety disorders, and substance abuse is discussed. The appropriate role of psychotherapeutic agents, including anxiolytics, antidepressants, mood stabilizers and neuroleptics, is also discussed.

PAP 261 Clinical Rotation I**4 credits**

PAP 261 is a year-long series of highly structured off-campus clinical experiences pairs the 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. Students will provide supervised care to patients of all ages, including those seen by specialists in primary care, internal medicine, pediatrics, emergency medicine, surgery, orthopedics, geriatrics, behavioral medicine, and women's health.

PAP 262 Clinical Rotation II**4 credits**

PAP 262 is a year-long series of highly structured off-campus clinical experiences pairs the 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. Students will provide supervised care to patients of all ages, including those seen by specialists in primary care, internal medicine, pediatrics, emergency medicine, surgery, orthopedics, geriatrics, behavioral medicine, and women's health.

PAP 263 Clinical Rotation III**4 credits**

PAP 263 is a year-long series of highly structured off-campus clinical experiences pairs the 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. Students will provide supervised care to patients of all ages, including those seen by specialists in primary care, internal medicine, pediatrics, emergency medicine, surgery, orthopedics, geriatrics, behavioral medicine, and women's health.

PAP 264 Clinical Rotation IV**4 credits**

PAP 264 is a year-long series of highly structured off-campus clinical experiences pairs the 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. Students will provide supervised care to patients of all ages, including those seen by specialists in primary care, internal medicine, pediatrics, emergency medicine, surgery, orthopedics, geriatrics, behavioral medicine, and women's health.

PAP 265 Clinical Rotation V**4 credits**

PAP 265 is a year-long series of highly structured off-campus clinical experiences pairs the 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. Students will provide supervised care to patients of all ages, including those seen by specialists in primary care, internal medicine, pediatrics, emergency medicine, surgery, orthopedics, geriatrics, behavioral medicine, and women's health.

PAP 266 Clinical Rotation VI**4 credits**

PAP 266 is a year-long series of highly structured off-campus clinical experiences pairs the 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. Students will provide supervised care to patients of all ages, including those seen by specialists in primary care, internal medicine, pediatrics, emergency medicine, surgery, orthopedics, geriatrics, behavioral medicine, and women's health.

PAP 267 Clinical Rotation VII**4 credits**

PAP 267 is a year-long series of highly structured off-campus clinical experiences pairs the 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. Students will provide supervised care to patients of all ages, including those seen by specialists in primary care, internal medicine, pediatrics, emergency medicine, surgery, orthopedics, geriatrics, behavioral medicine, and women's health.

PAP 268 Clinical Rotation VIII**4 credits**

PAP 268 is a year-long series of highly structured off-campus clinical experiences pairs the 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. Students will provide supervised care to patients of all ages, including those seen by specialists in primary care, internal medicine, pediatrics, emergency medicine, surgery, orthopedics, geriatrics, behavioral medicine, and women's health.

PAP 269 Clinical Rotation IX**4 credits**

PAP 269 is a year-long series of highly structured off-campus clinical experiences pairs the 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. Students will provide supervised care to patients of all ages, including those seen by specialists in primary care, internal medicine, pediatrics, emergency medicine, surgery, orthopedics, geriatrics, behavioral medicine, and women's health.

PED- Physical Education

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PED 102 Volleyball**1 credit**

PED 102 is designed to introduce and improve student skill level in volleyball. The primary emphasis is on teaching you the elements of volleyball: rules, offensive and defensive play, passing, serving, setting, attacking, team play and game strategies.

PED 104 Racquetball**1 credit**

PED 104 is designed to introduce and improve the skill level in racquetball. The primary emphasis is on teaching you the elements of racquetball, including rules, stroke technique, scoring, serving, the various shots, and offensive and defensive strategies.

PED 106 Tennis**1 credit**

PED 106 is designed to introduce and improve the skill level in tennis. The primary emphasis is teaching students the elements of tennis: rules of the game, ground strokes, serving, the various shots, and singles and doubles play and strategies.

PED 110 Fitness Center Activity I**1 credit**

PED 110 is designed for individuals interested in improving total fitness via an aerobic circuit training program. The course will include an individual fitness evaluation, computerized analysis of results, and a prescribed exercise program. All of the basic components of fitness including: flexibility, muscular strength, muscular endurance, cardiovascular fitness, and body composition will be addressed. Weight machines, stationary bicycles, and computerized cardiovascular equipment will be used to elicit improvements in fitness.

PED 111 Fitness Center Activity II**1 credit**

Prerequisite: PED 110

PED 111 is an advanced course designed for individuals interested in reaching a higher level of total fitness via an aerobic circuit training program. The course will include an individual fitness evaluation, computerized analysis of results, and a prescribed exercise program. All of the basic components of fitness including: flexibility, muscular strength, muscular endurance, cardiovascular fitness, and body composition will be addressed. Weight machines, stationary bicycles, and computerized cardiovascular equipment will be used to elicit improvements in fitness.

PED 116 Weight Training**1 credit**

PED 116 offers basic instruction and practice in weight training. Students use weight training equipment in accordance to their abilities and goals. Emphasis is placed upon weight training equipment orientation, correct lifting techniques, and basic program design for men and women.

PED 117 Cross Training**1 credit**

PED 117 introduces basic cross-training techniques designed to improve physical work capacity of an individual. Enables you to gain an understanding of the basic principles of cross training, the effects cross training has upon the body's energy systems and muscles, program design and terminology.

PED 123 Bicycle Touring**1 credit**

PED 123 introduces bicycle touring over a variety of terrains and distances. Selection and maintenance of equipment, pre tour conditioning, safety and dietary factors will be covered.

PED 124 Mountain Biking**1 credit**

PED 124 is designed to introduce basic mountain biking skills and techniques. The primary emphasis is to gain an understanding of the basic principles of mountain biking. Students develop skills and techniques for all riding situations, review bicycle anatomy, and basic maintenance and repairs.

PED 125 Bowling**1 credit**

PED 125 is designed to introduce and improve students skill level in bowling. The primary emphasis is on teaching you the elements of bowling rules and regulations, footwork, courtesies, delivery, selection of ball, scoring, and team and individual competition.

PED 127 Introduction to Flyfishing**1 credit**

In PED 127 you will gain the knowledge and skill of the fine art of flyfishing, including the selection and use of appropriate equipment, fly-casting techniques, flyfishing entomology, and guiding techniques. This course includes several field trips to local flyfishing areas.

PED 128 Basic Sailing**1 credit**

PED 128 is designed for the beginning sailor taught by American Sailing Association certified instructors and meets the safety requirements of the U.S. Coast Guard. The class is divided into two parts: Theory Classes and Sailing Sessions. Classes will cover terminology, safety regulations, knots, sailing theory, and navigation. Sailing sessions will cover rigging, getting underway, safety rules, tacking, gibing, bearing away, boat handling in different weather conditions, overboard rescue, returning to the dock, and anchoring. Course costs include all boating equipment, textbooks, handouts, class materials, and the use of a 21' day sailor.

PED 129 Scuba Diving**1 credit**

PED 129 provides basic instruction in scuba diving. This course provides the knowledge and skills related to swimming and snorkeling, diving equipment, communications, the environment, safety, dive tables, and other pertinent information a student needs for safe scuba diving. This course prepares you for open-water (PADI) certification.

PED 131 Nordic Skiing**1 credit**

PED 131 provides students with the fundamental skills of Nordic skiing. The emphasis is on skiing technique, conditioning, safety, and equipment. The course has classroom and activity sessions. Conditioning in the fitness center and trips to local ski areas are part of this course.

PED 132 Snowshoeing**1 credit**

PED 132 emphasizes the basic skills, equipment, clothing and techniques of snowshoeing. The course includes the objective dangers involved with winter recreation.

PED 136 Advanced Weight Training

1 credit

PED 136 offers guided instruction and independent practice in weight training for men and women. Students practice various weight training techniques in accordance with their abilities. Emphasis is placed upon physiological considerations, equipment orientation, correct lifting techniques, program design, and nutrition.

PED 138 Introduction to Winter Sports

1 credit

PED 138 provides an overview of at least two of the following winter sports: alpine skiing, snowboarding, ice skating, telemark skiing, Nordic skiing, snowshoeing, or skate skiing. The primary emphasis is on gaining the knowledge and techniques necessary for winter sports on beginner to intermediate groomed or backcountry terrain. Multiple field trips to ski areas or other outdoor venues are required.

PED 143 Tai Chi I

1 credit

PED 143 is designed to introduce Tai Chi as an expression of understanding of self-control, exercise and self defense. The primary emphasis is to gain an understanding of the history (origins and changes) of Tai Chi, the movements and their names, application of movements and terminology.

PED 144 Tai Chi II

1 credit

PED 144 will emphasize the instruction of Tai-Chi from a practical and scientific approach with illustrations of applications for each of the movements in daily life. Cardiovascular training, strength and flexibility training, balance and coordination will be integral parts of the Tai-Chi training. In addition, psychosocial skills such as meditation, relaxation and self-efficacy will be addressed.

PED 145 Pilates Matwork I

1 credit

PED 145 focuses on Pilates matwork to increase core strength, overall muscles tone and flexibility with focused and precise floor work techniques. A physical education class built upon the philosophies and exercises of Josef Pilates.

PED 146 Martial Arts

1 credit

PED 146 is designed to introduce basic martial arts techniques and forms designed to improve the physical and mental capacity of an individual. The primary emphasis is to gain an understanding of the basic philosophies and concepts around the martial arts; the approach to ethics and provides a clear-cut guide for developing a powerful sense of character and will.

PED 147 Yoga I

1 credit

PED 147 offers a guided instruction in yoga. Students practice yoga according to their individual fitness levels and abilities. Emphasis is placed on enhancing general health and wellbeing through the performance of yoga strength, flexibility, balance and relaxation techniques and exercises.

PED 148 Yoga II

1 credit

Prerequisite: Yoga I or permission of instructor.
PED 148 increases awareness of yoga and its physical and mental benefits. The concepts of basic yoga are carried into additional areas.

PED 150 Rock Climbing I

2 credits

PED 150 is designed to introduce basic rock climbing, improve dexterity, problem solving skills and the physical work capacity of an individual. The primary emphasis will be to gain an understanding of the general principles of climbing; how equipment works and how it is used; basic climbing skills and techniques; safety and climbing etiquette and terminology.

PED 151 Rock Climbing II

2 credits

Prerequisite: PED 150 or permission of Instructor.
PED 151 is designed to introduce lead climbing skills and techniques, problem solving skills and physical fitness. Emphasis is placed on the general principles of lead climbing; proper usage of climbing equipment; development of lead climbing skills and techniques, climbing ethics and safety; and terminology.

PED 153 Hiking

1 credit

PED 153 provides skills related to hiking and wilderness travel. This course emphasizes hiking skills, proper conditioning, route finding, equipment, and hiking hazards and ethics. The course involves conditioning in the fitness center and weekend hikes.

PED 154 Backpacking

2 credits

PED 154 provides skills related to wilderness travel and outdoor adventure. This course will emphasize knowledge of backpacking skills, survival techniques, proper physical conditioning, route finding, equipment selection, and develop an understanding and respect for the environment. The course will involve lecture and discussion sessions followed by a weekend trip in the mountains.

PED 155 Outdoor Expedition

3 credits

PED 155 is a group expedition covering seven to ten days combining hiking, backpacking, climbing, or paddling in remote North American regions. The course includes the rationale for organizing and conducting wilderness trips.

PED 157 Basic Mountaineering

3 credits

PED 157 provides students with a combination of skills and practical experience in the fundamentals of mountaineering. Emphasis is placed on basic climbing skills and techniques, equipment usage, safety systems, mountain travel and awareness, problem solving and decision-making, high altitude climate and weather, wilderness ethics, and physical fitness.

PED 159 Colorado Fourteeners

2 credits

PED 159 presents an historical look into the naming and climbing of Colorado's 14,000 foot peaks. The course includes information on the current routes to ascend the peaks.

PED 162 Map and Compass for the Outdoors Person**3 credits**

PED 162 covers the reading of high-way, forest service, and topographical maps which include symbols, legends, border information, and contour lines. The course includes the use of magnetic compasses in an outdoor environment and functions that plot a course on maps. Supplemental navigation skills are included.

PED 163 Orienteering and Route Finding**2 credits**

PED 163 combines the topics of using different topographical maps and compasses in order to safely plan a route in the wilderness, with Orienteering (organized competitive cross-country land navigation). Orienteering rules, symbols, clues, and clubs will also be addressed. Field trips may include student participation in a scheduled Orienteering meet.

PED 165 Wilderness Survival Skills**3 credits**

PED 165 emphasizes the physiological, psychological and practical principles of survival. Survival equipment, wilderness improvising techniques, and wilderness dangers are included.

PED 166 Winter Wilderness Survival Skills**2 credits**

PED 166 will emphasize winter survival techniques in the nival environment at or near timberline. Winter ecology, basic snow science, and avalanche safety and rescue will also be presented in a backcountry setting. This course includes field days and an overnight in a snow cave.

PED 167 Basic Search and Rescue**3 credits**

PED 167 covers the fundamentals required for search and rescue in a wilderness environment. The course includes tracking techniques and field trips.

PED 202 Fencing**1 credit**

PED 202 is a beginning course in the art and skill of fencing. Topical discussions and practical uses of appropriate equipment, rules, safety, footwork and defensive/ attack strategies will be covered.

PED 203 Fencing II**1 credit**

PED 203 continues the course in the art and skill of fencing. Topical discussions and practical uses of appropriate equipment, rules, safety, footwork, and defensive/attack strategies will be covered. The focus of this course will be on the tactical wheel and bouting

PED 207 Intermediate Canoeing**1 credit**

PED 207 emphasizes intermediate paddling technique and river reading skills for both tandem and solo boating. Students will learn safety procedures, equipment hazard evaluation, and how to minimize environmental impact on river and lake environments.

PED 210 Fitness Center Activity III**1 credit**

Prerequisite: PED 110 and PED 111
 PED 210 is an advanced exercise course designed for individuals interested in attaining a high level of total fitness. The course will include an individual fitness evaluation, computerized analysis of results, and a prescribed exercise program. All of the basic components of fitness including: flexibility, muscular strength, muscular endurance, cardiovascular fitness, and body composition will be addressed. The primary mode of training will be Aerobic Circuit Training, which will be supplemented with additional work on the specialized weight machines, dumbbells, treadmills, rowers, stair climbers, cross trainers, Nordic track, versa climbers, and running track available in the Fitness Center

PED 211 Fitness Center Activity IV**1 credit**

Prerequisite: PED 110, PED 111, and PED 210

PED 211 is an advanced course for individuals interested in attaining a high level of total fitness. The course includes an individual fitness evaluation, computerized analysis of results and a prescribed exercise program. All of the basic components of fitness including: flexibility, muscular strength, muscular endurance, cardiovascular fitness, and body composition will be addressed. Aerobic Circuit Training, which will be supplemented with additional work on the specialized weight machines, dumbbells, treadmills, rowers, stair climbers, cross trainers, Nordic track, versa climbers, and running track found in the Fitness Center.

PED 237 Paddle Sports**2 credits**

PED 237 course focuses on the methods and skills of conducting and leading safe lake and river trips in various types 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. The course includes a multi-day river expedition.

PED 280 Internship**1-6 credits**

PED 280 course gives the student a realistic work experience in the field. Work will be supervised by professionals currently employed in the outdoor education industry. These preceptors will ensure that the students participate in relevant field work and that they perform to the standards expected of employees of the organizations in which the internship occurs.

PED 285 Independent Study**1 credit**

PED 285 meets the individual needs of students. Students engage in intensive study or research under the direction of a qualified instructor.

PER- Physical Education and Recreation

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PER 113 Introduction to Physical Education and Sport

2 credits

PER 113 enables the student to study the field of physical education and sports. Trends, precedents and their effects in the health and total wellness of those involved.

PER 128 Introduction to Recreation

2 credits

PER 128 studies the history, principles, philosophy, contemporary problems and trends of recreation and their influence upon today's American society.

PER 150 Water Safety Instructor

3 credits

PER 150 prepares students to become certified by the American Red Cross as a Water Safety Instructor (WSI). Enables students to develop skills for teaching infant and preschool aquatics, Levels 1- 7 in the Learn to Swim Program, Community Water Safety and Water Safety Instructor Aide. It focuses on teaching people with special needs and planning and conducting safe and effective swim lessons.

PER 151 Lifeguard Training

2 credits

PER 151 provides the necessary minimum knowledge and skills training to qualify as a non-surf lifeguard. Prepares lifeguard candidates to recognize emergencies, respond quickly and effectively to emergencies and prevent drowning and other incidents. The course also teaches other skills needed to be a professional lifeguard.

PER 152 Avalanche Safety

1 credit

PER 152 emphasizes the latest information available about the study of avalanches, snow science, rescue equipment, and rescue techniques. The course provides students with the knowledge and skills necessary to help instill good judgment and sound decision making in day-to-day travel in the winter environment. This course fulfills the National Ski Patrol's Basic (Level 1) Avalanche course requirements.

PER 153 Whitewater Rafting Guide

2 credits

PER 153 meets the requirements of Colorado Statute 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

PER 160 Wilderness Ethics

3 credits

PER 160 emphasizes the motivation, aesthetics, and ethics of wilderness. Viewpoints to be examined include: Native American, Western, historic, and those of modern environmental writers.

PER 161 Backcountry Cooking

1 credit

PER 161 covers menu planning, nutritional requirements for wilderness camping, and meal preparations. This course includes cooking a backcountry meal.

PER 168 Outdoor Equipment and Facilities

1 credit

PER 168 acquaints students with wilderness equipment, programs and facilities. The course includes field trips to local outdoor industry facilities.

PER 175 Special Topics

1-6 credits

PER 175 provides students with a vehicle to pursue in depth exploration of special topics of interest.

PER 253 Outdoor Leadership

2 credits

PER 253 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 minimal impact camping, wilderness ecology, judgment and decision-making, group dynamics and trip logistics. These skills will enhance your effectiveness as an outdoor leader.

PER 256 Mountaineering Teaching Concepts

3 credits

PER 256 covers planning and methods required to teach mountaineering skills. Students give lectures and conduct field trips.

PER 265 Officiating High School Football

1 credit

PER 265 provides students an opportunity to develop the skills and awareness of and duties of field officials during high school football contests including official playing rules, game management, general philosophy of conducting a high school football contest, and safety management of the players, coaches, and spectators during the contest. The course includes required on-field participation during selected high school football games.

PHI- Philosophy

PHI 111 Introduction to Philosophy

3 Credits

PHI 111 introduces significant human questions and emphasizes understanding the meaning and methods of philosophy. It includes human condition, knowledge, freedom, history, ethics, the future, and religion.

PHI 112 Ethics

PHI 112 examines human life, experience, and thought in order to discover and develop the principles and values for pursuing a more fulfilled existence. Theories designed to justify ethical judgments are applied to a selection of

PHI 113 Logic

3 Credits

PHI 113 studies effective thinking using language-oriented logic. Provides tools and develops skills for creative and critical thinking. Emphasizes the

PHI 114 Comparative Religions

3 Credits

PHI 114 introduces students to the similarities and differences among concepts predominant in the major world religions, comparing sociological, philosophical, and phenomenological similarities between major world faiths. It is designed to transfer to any four-year college philosophy, religious studies or humanities department.

PHI 115 World Religions—West

3 credits

PHI 115 introduces the student to the common and different concepts predominant in the major world religions. It includes sociological, political, psychological, and philosophical aspects of a variety of belief systems. It focuses on the concept of religion as a cultural system, and a way that people make sense of a complex world. Particular emphasis is placed on how myths, legends, and folk tales reveal religious concerns.

PHI 116 World Religions—East

3 credits

PHI 116 emphasizes the diversity and richness of Eastern Religions within a cross-cultural context. Concepts such as fate, reincarnation, enlightenment and morality are analyzed.

PHI 117 Psychology of Religion

3 Credits

PHI 117 emphasizes the application of psychological principles and theories to religious phenomena, including religious practices, beliefs, and rituals. As an introduction to the field, this course begins with an 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 120 Applied Ethics

3 Credits

PHI 120 is an umbrella course which covers different applications of ethics in contemporary society and disciplines, including Business Ethics, Biomedical

PHI 123 Native American Religion

3 Credits

PHI 123 is designed to introduce the student to the primary beliefs and practices found in the Native North American tribes, and to trace the development of these religious systems from their oral beginnings through to modern religious revivals.

PHI 124 Introduction to Islam

3 Credits

PHI 124 introduces the Islamic religious tradition and considers its significance in the modern world. The course investigates the history of Islam, Islamic beliefs and practices, Islamic sects, Sufism, and contemporary issues of Islamic extremism, women in Islam, and Islam in the West.

PHI 140 Religion in American Culture

3 Credits

PHI 140 will investigate 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 pre-eminent organizing principles our post-modern era, where religion competes with a multiplicity of other belief systems in a complex societal matrix. This course will focus on the

PHI 141 Old Testament

3 Credits

PHI 141 surveys the literature produced by ancient Israel from its inception in the 10th century BCE 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

PHI 142 New Testament

3 Credits

PHI 142 surveys the literature of the early Christian era, from its inception to approximately 150 C.E. The New Testament as well as selected non-canonical writings from the 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

PHI 201 Social and Political Philosophy

3 Credits

PHI 201 addresses a single topic among those relevant to social and political philosophy such as political rights, political freedom, social obligations, or democracy.

PHI 202 Religion and Film

3 Credits

PHI 202 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 post modernity poses to traditional religion.

PHI 214 Philosophy of Religion

3 Credits

PHI 214 focuses on the critical examination of the fundamental concepts, ideas, and implications of religion. Specific topics will include: the nature of God, the varieties of religious experience, argument concerning God's existence, the Problem of Evil, faith and reason, religion and human destiny, and the connection between religion and ethics

PHI 275 Special Topics in Philosophy

3 Credits

PHI 275 provides students with a vehicle to pursue in depth exploration of special topics of interest.

PHO - Photography

PHO 101 Photography I

3 credits

PHO 101 is an introduction to black and white photography as a fine art medium and develops the skills necessary for basic camera and darkroom operations. Students will learn how to create sharp, properly exposed photographs using black and white film. They will also gain a working knowledge of their camera's controls, use of basic filters and how to process and print black and white photographs.

PHO 102 Photography II

3 credits

Prerequisite: PHO 100 and 105 or PHO 101 or ART 151

PHO 102 further explores camera and lab operations and emphasizes individual creativity. The course includes the development of a comprehensive portfolio.

PHO103 Color Photography I

3 credits

PHO 103 covers the fundamentals of color photography such as color theory, light, the history of color photography, composition and film. Students will use 35mm color slide film, however, digital cameras are welcome. Prerequisite PHO101

PHO 107 History of Photography

3 credits

PHO 107 surveys the history of photography from its beginnings to the present. The emphasis will be on the study of individual photographers who have made significant contributions in the field. Students will attain an overview of technical, artistic, commercial and social development of photography as a form of visual communication.

PHO109 Photo Lab

1 credit

PHO 109 introduces students to basic darkroom operations, lab safety, proper equipment usage and darkroom techniques. Students will learn to process black & white film for optimum quality negatives, make contact prints as well as produce high quality custom black & white enlargements.

PHO 135 Photojournalism

(Formerly PHO185)

3 credits

PHO 135 instructs the student in photography for newspapers and magazines. Traditional news photography, documentary photography, picture essay and picture story formats will be covered. Responsibility of the press, working conditions and editorial photography will be explored.

PHO 175 Point & Shoot Camera Techniques

1 Credit

PHO 175 is a stimulating two-day workshop designed to allow you to test the limits of your Point & Shoot camera. Even the simplest cameras can produce professional results when properly used. Digital or film point & shoot cameras welcome.

PHO 175 Vacation Pictures

(Formerly PHO108)

1 Credit

PHO 175 is a two-day workshop is designed for the traveler. The students will learn some technical and creative controls that will make their pictures sparkle no matter where they shoot. This is a practical course for any skill level wanting to enhance their travel photography. Digital or film cameras are welcome.

PHO 176 Basic Camera Techniques (Formerly PHO100)

1 Credit

PHO 176 is designed to develop the skills necessary for basic camera operations and introduces students to photography as a fine art medium. Students will learn how to create sharp, properly exposed photographs using a variety of films. They will also gain a working knowledge of their camera's controls and the use of basic filters and flash equipment to create the desired effects.

PHO 177 Intro to Digital Imaging

1 credit

PHO 177 is designed for the photographer or hobbyist alike to get up and running in the analog to digital world of imaging. Topics will include how to use your digital camera, flatbed scanning, working with photo CD's and scanning film. Students will gain a basic working knowledge of pixels, resolution, printing and emailing digital photos and simple image manipulation using Photoshop or similar image editing software. This class is a must if you own or plan on owning a digital camera and/or scanner.

PHO 178 Business and Ethics in Photography

1 Credit

PHO 178 will provide fundamental business skills and ethical guidelines for those students perusing a career in professional photography. We'll explore the principals and practices of successful freelance, editorial, stock, commercial, wedding, portrait and fine art photographers. Topics will include developing a business plan, advertising, cost analysis, model releases, property releases, copyrights, researching market and publications, the Web and the basis of making money in photography.

PHO 135 Photojournalism

3 credits

PHO 135 instructs you in photography for newspapers and magazines. Traditional news photography, documentary photography, picture essay and picture story formats will be covered. Responsibility of the press, working conditions and editorial photography will be explored.

PHO 179 Outdoor Portrait Workshop

1 credit

PHO 179 is designed to provide the serious photography student with hands-on tools and techniques to explore the art of outdoor portraits. Students will learn about controlling natural lighting, backdrops to enhance the subject and the use of format and lens selection to best fit the desired outcome.

PHO 203 Color Photography II

3 credits

Prerequisite: PHO 145

PHO 203 is designed for students who are developing a personal style and aesthetic in the medium of color photography and is an extension of Color Photography I. Personal expression will be stressed through individual critiques and projects.

PHO 204 Studio Lighting

3 credits

Prerequisites: PHO 100 and 105 or PHO 101 or ART 151

PHO 204 will explore the creative uses of studio lighting from the perspective of fine art and commercial photography with an emphasis on three dimensional object photography including, lighting techniques, backgrounds, working with shadows and highlights and photographing flat art.

PHO 205 Digital Photography I

3 Credits

PHO 205 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.

PHO 205 Digital Photography II

3 Credits

PHO 205 is a continuation of the beginning digital photography class. This class will look at digital photography in terms of design and communication factors including color, visual design, lighting, graphics, and aesthetics. Pre-requisite: Digital Photography I

PHO 226 Digital Darkroom

3 credits

PHO 226 is essentially, "Photoshop for Photographers." Students will learn computer aided photography and darkroom techniques. The emphasis of this course is image-editing software, which can be used to color correct, retouch and composite photographic images. Other topics include image acquisition, storage, file management, special effects, hard copy and Web-based image output.

PHO 232 Portrait Photography

3 credits

PHO 232 will teach the technical and aesthetic aspects of studio and location portrait photography. This course explores the personal style of portraiture, history of the field and portraiture as a visual language and creative expression. This topic also includes lighting, composition, posing and equipment selection.

PHO 235

Commercial/Architectural Photos

3 credits

Prerequisites: PHO 101 or PHO 100 and 105, plus PHO 102 or higher
PHO 235 covers the more advanced aspects of commercial and architectural photography. Students will explore photographing subjects ranging from products to buildings with an emphasis on meeting the design demands of commercial clients, stock agencies and publishers. Various film types, formats and print reproduction aspects will be explored in depth.

PHO 242 Professional Digital Workflow

3 credits

PHO 242 is an advanced level course that is intended for the student pursuing a photographic career in which digital photography will play a major role. This class addresses the facets of determining what the workflow should be for a variety of applications, how to choose the right equipment and the best method of working with that equipment. Students will learn to select the most valuable enhancement tools, how to archive, edit and how to present and finish a product. Emphasis is on the practical, and how to produce a finished, salable product with maximum speed and accuracy.

PHO 260 Event/Wedding Photography

3 credits

Prerequisites: PHO 100 and 105 or PHO 101 or ART 151 or higher

PHO 260 is designed for the intermediate/ advanced photo student interested in learning the professional techniques associated with venue photography. Topics covered will include weddings, Barmitzvah/Basmitzvah, music concerts, sporting events, graduations and similar occasions. Students will gain hands-on knowledge and learn practical shooting skills. The course includes the business and planning aspects of ceremonial and event photography.

PHO 275 Close-up and Macro Photography

1 credit

PHO 275 will explore the techniques, aesthetics and equipment necessary to produce close-up and macro photographs. Students will photograph both inanimate and natural objects, indoors and outdoors using different approaches to these subjects.

PHO 276 Infrared Photography

1 credit

PHO 276 is a two-day intensive workshop is designed for the mid-level to advanced photography student. This course explores the uses of black and white infrared film for dramatic special effects photography. Students will need to use a 35mm camera.

PHO 276 Landscape and Scenic Photography

3 credits

PHO 276 is designed for the advanced photography student interested in perfecting their skills in shooting landscape or scenic photographs. Emphasis will be placed on careful attention to detail and lighting conditions, use of medium and large format equipment in both color and black and white images.

PHO 277 The business of Photography

3 credits

PHO 277 examines the business of photography from the standpoint of the photographer who wishes to earn a part-time or full-time living making and selling photographic images. For a photographer to survive in today's business environment, he/she must apply sound business principles and be proactive in planning for the future. This course will aid students in developing a sound business plan and a useful strategy along with marketing, copyrights, cost analysis, releases and the web. Students will learn how to remain profitable in the business of photography.

PHO 277 Mastering Black and White Outdoor Photography

3 credits

PHO 277 will explore advanced techniques used by Master Photographers in exposing and printing professional B&W outdoor photos. Types of film, cameras, exposure methods, film processing and printing techniques will be covered. Exposure methods include the Zone System, use of filters, and advanced techniques to achieve the best possible negative to maximize print quality. All film formats welcome.

PHO 278 Finish and Display/Framing

1 credit

PHO 278 will teach students the proper execution and presentation of their fine art images through the use of dry mounting, matting and framing. Topics include measuring, matting, mounting, costing, supplies, professional techniques, simple framing and basic archival processes.

PHO 282 Special Effects: Darkroom

3 credits

Prerequisites: PHO 100 and 105 or PHO 101 or ART 151 or higher
PHO 282 is designed for intermediate to advanced level students. Students will explore such specialized photo techniques as infrared photography, solarization, multiple exposures, time exposures, direct positive black and white, multiple and montage printing techniques, abstracts and high contrast as well as film reticulation. Topics will include special filters, motion techniques and breaking all the rules. The primary emphasis will be on personal creativity and the aesthetic value in using special effects in visual communication.

PHY- Physics

www.rccc.edu/science/physics

PHY 105 Conceptual Physics

4 credits

PHY 105 explores the physics of how things work, utilizing many activities and demonstrations. This course studies mechanics, heat, properties of matter, electricity and magnetism, light and modern physics. This course includes laboratory experience.

PHY 111 Physics: Algebra-Based I with Lab

5 credits

Prerequisites: MAT 121

PHY 111 topics include: kinematics, force, circular motion, energy, momentum, torque, rotational dynamics, simple harmonic motion, temperature, heat and thermodynamics. The concepts and theories presented in class are explored through the demonstrations and the `hands-on` experiments. This is a general physics course that is recommended for all of the health sciences and all other interested students. Students entering engineering or one of the advanced sciences should register for PHY 211.

PHY 112 Physics: Algebra-Based II with Lab

5 credits

Prerequisites: PHY 111

PHY 112 is the continuation of the PHY 111 course. Topics covered in this class include: sound waves, electric fields, electric circuits, magnetic fields, optics, and modern physics. The concepts and theories presented in class are explored through the demonstrations and hands-on experiments.

PHY 211 Physics: Calculus-Based I with Lab

5 credits

Prerequisites: MAT 201

PHY 211 topics include: kinematics, force, gravity, energy, momentum, torque, rotational dynamics, fluids and waves. The concepts and theories presented in class are explored through the demonstrations and the hands-on experiments. This first semester calculus-based physics course is recommended for students entering engineering or one of the advance sciences.

PHY 212 Physics: Calculus-Based II with Lab

5 credits

Prerequisites: PHY 211

PHY 212 is the continuation of the PHY 211 course. Some of the topics covered in this class include: thermodynamics, electric fields, electric circuits, magnetic fields, light and optics, and modern physics. The concepts and theories presented in class are explored through demonstrations and hands-on experiments

PLU- Plumbing

PLU 100 Introduction to Plumbing

4 credits

PLU 100 introduces the student to the plumbing trade, providing them with the opportunity to learn basic skills needed to work in the plumbing industry. The course includes work in the classroom and shop. Students will work 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 104 Plumbing Service

4 credits

PLU 104 allows you to learn how to diagnose and repair common problems associated with plumbing components and systems. Topics will include 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.

PLU 105 Basic Electricity

4 credits

PLU 105 is a 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, basic electrical components and learn their application to the trade.

PLU 108 Soldering and Brazing Skills

0.5 credit

PLU 108 allows you 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.

PLU 111 Piping Skills

4 credits

PLU 111 teaches the installation of common piping materials in plumbing and HVAC/R systems. Pipe math, terminology, common piping materials and application, figuring offsets and common pipe joints are also covered. Shop projects including pipe support and hanging, center to center measurements and a variety of pipe joining methods are explored.

PLU 120 Residential Plumbing

4 credits

PLU 120 has the following prerequisites: PLU 100, 101 or permission of the instructor. PLU 120 students will learn how to design and install residential plumbing systems. (Course does not cover DWV systems: see PLU 130.) 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.

PLU 130 Basic Waste and Vent

4 credits

PLU 130 has the following prerequisites: PLU 100, 101, 120 or permission of the instructor. PLU 130 gives the students the opportunity to learn how to design drain, waste and vent systems. Chapters 7 and 9 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.

PLU 150 Code and Piping Calculations

2 credits

PLU 150 reviews and applies code and piping calculation. Topics include calculations for the following: pipe and cylindrical area and volume, pipe circumference, rectangular area and volume, offsets, water volume and weight grade, fall, and run. The knowledge gained by students completing this course can be applied to all plumbing systems, fuel gas appliance piping and critical calculations for other mechanical and piping systems.

PLU 202 International Residential Code – Plumbing

2 credits

PLU 202 covers the plumbing requirements of the IRC. Students will be given the opportunity to learn and apply the general requirements of this code. The course will review and apply the sizing requirements of part VII of this code

PLU 205 Backflow Prevention Certification Training

3 credits

PLU 205 prepares students with information and procedures for the development, implementation, maintenance and enforcement of back-flow prevention practices pursuant to federal and state regulation pertaining to cross connection control. The information in this course also prepares students to take the back-flow, ASSE cross-connection test.

PLU 206 Uniform Plumbing Code

4 credits

PLU 206 will 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. NOTE: The State of Colorado will change to the IPC on July 1, 2005.

PLU 207 International Plumbing Code

4 credits

PLU 207 helps plumbers working in jurisdictions where the International Plumbing Code has been adopted. This course will review the IPC and help the plumber apply the requirements of this code to the installation of plumbing systems. This Code has been adopted by the State Of Colorado effective July 1, 2005.

PLU 208 International Fuel Gas Code

4 credits

PLU 208 reviews the general requirements of applicable chapters of the IFGC. Students are given the opportunity to learn system sizing which includes: fuel gas piping, gas appliance venting, and combustion air.

PLU 215 Backflow Prevention Re-Certification

1 credit

Prerequisite: Students must have a current Colorado Cross Connection Control Technician Certification.

PLU 215 is designed for those 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 technician re-certification and prepare for the current ASSE certification.

PLU 216 Colorado Plumbing Code Up-Date

2 credits

Prerequisites: PLU 207 or valid Colorado plumbing license. PLU 216 is for those students that need to be updated on the Colorado Plumbing Code. The instructor will meet with you and schedule the necessary attendance.

PLU 226 Colorado Plumbing Code 16 Hour

1 credit

PLU 226 is for those students that need to complete a 16 hour plumbing code course per the Colorado Examining Board of Plumbers requirements.

PLU 227 Medical Gas Certification

2 credits

Prerequisites: PLU 101, 206, or Colorado Journeyman Plumber License or permission of the instructor.

PLU 227 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.

PLU 240 Commercial Plumbing Systems

4 credits

Prerequisites: PLU 100, 101,120, 130. PLU 240 reviews code requirements of plumbing systems typically found in commercial structures. Students will design and install systems meet these requirements.

PLU 244 Commercial Plumbing Service

4 credits

Prerequisites: PLU 100,105,104,120. PLU 244 covers the aspects of maintenance and repair of typical plumbing equipment, fixtures and associated systems found in commercial structures.

PLU 247 Hot Water Heating Systems

4 credits

Prerequisites: PLU 101, or HVA 111, HVA 105, HVA 110, HVA 162 or permission of the instructor.

PLU 247covers 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.

PLU 250 Plumbing Estimating and Costing

4 credits

Prerequisites: PLU 206, CON 105 and 251 Journeyman Plumber's License or permission of the instructor. PLU 250 will review and apply the information required to estimate and cost the installation of plumbing and fixtures. Topics include labor, material take-off, overhead costs and running a profitable plumbing business.

PLU 267 Radiant Heating Systems

4 credits

Prerequisites: PLU 101 or HVA 111, HVA 105, 110, 162, 247 or permission of the instructor.

PLU 267 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. Students are able to design, install, document, maintain and trouble-shoot all conventional residential warm water, radiant panel heating systems.

PLU 275 Special Topics

1-6 credits

PLU 275 provides students with a vehicle to pursue in depth exploration of special topics of interest.

PLU 280 Technical Project 4-12 credits

Prerequisites: Permission of instructor. PLU 280 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 282 Internship

0.5-12 credits

Prerequisite: Permission of instructor. PLU 282 will give students with prior course work in a specific area who are eligible an internship. The internship will give you an opportunity to apply their course studies.

PLU 285 Independent Study

0.5-12 credits

Prerequisite: Permission of instructor. PLU 285 students will work with the instructor on a specific area with specific objectives and a predetermined project completion date.

POS- Political Science

POS 105 Introduction to Political Science

3 credits

POS 105 surveys the discipline of political science, including political philosophy and ideology, democratic and non-democratic processes, and international relations.

POS 111 American Government

3 credits

POS 111 includes the background of the U.S. Constitution; the philosophy of American government; general principles of the U.S. 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

POS 125 is a study of the structure and functions of state, county, and municipal governments including their relations with each other and with national government. Colorado government and politics are emphasized.

POS 205 International Relations

3 credits

POS 205 examines the relationships among modern nation states. Topics include diplomacy, nationalism, ideologies, power and influence, conflict and cooperation, the role of non-state actors, the international economy, and theoretical attempts to understand international behavior.

POS 215 Current Political Issues

1-3 credits

POS 215 is an in-depth analysis of critical issues in political science. Topics will be determined each term.

POS 287

Cooperative Education/Internship

1-6 credits

To be arranged with instructor.

PRA-Park Ranger

www.rccc.edu/park

PRA 102 Introduction to Park Ranger Technology

3 credits

PRA 102 an introductory course covering the development of public lands in the U.S., the various agencies controlling these lands, multi-use doctrine, wilderness, public services provided in parks, and the various roles of the park ranger in different settings. Career planning and park ranger responsibilities will be discussed, such as law enforcement, natural resource management, protection, and interpretation, such as geologic, biologic and historic or cultural resources. Visitor services, emergency response, management, and training are also covered.

PRA 175 Special Topics

1-6 credits

PRA 175 provides students with a vehicle to pursue in depth exploration of special topics of interest.

PRA 178 Park Ranger Skills Seminar

2 credits

PRA 178 is a skills seminar that presents necessary information regarding specialized training related to the park ranger field, Handling of livestock, fence design, building and repair, vehicle driving, park maintenance, budgeting and planning, and trail design, construction, and maintenance, are some of the topics that can be covered, This is a hands-on course for development and application of skills.

PRA 203 Natural Resource Management

3 credits

Prerequisite: PRA 102

PRA 203 is an introductory course covering the 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.

PRA 205 Natural Resource Interpretation

3 credits

PRA 205 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 resolution of public education and resource interpretation are emphasized.

PRA 218 Outdoor Leadership

3 credits

PRA 218 is an introduction to the development, acquisition, and application of outdoor leadership skills and knowledge. Students will be exposed to the latest information, philosophy, and techniques necessary to safely conduct outdoor programs and expeditions as an outdoor leader. Skills will be applied under actual field conditions. Emphasis will be on minimum impact camping, wilderness ecology, judgment, decision-making, group dynamics, and trip logistics. These skills will enhance your effectiveness as a professional outdoor leader.

PRA 230 Park Ranger Law Enforcement Training

3 credits

Prerequisite: PRA 102 or recent seasonal park employment/permission of the instructor.

PRA 230 is an intensive academy for non-armed park rangers who work in local government parks and open space districts. The focus is on ranger safety, regulation enforcement, incident command, limitations of authority, visitor contact, communications, and situational control techniques. Topics will vary depending upon the class' needs.

PRA 255 Advanced Resource Interpretation

3 credits

Prerequisite: PRA 205

PRA 255 is an advanced course in natural and cultural/historic resource interpretation. The course provides you with the skills to plan, prepare, and present exciting and relevant interpretation programs for special visitors and situations using a variety of personal and nonpersonal techniques. Examples of the types of skills offered are: writing and design of site produced publications and exhibit labels, producing basic audio-visual programs; prepare and present special activities such as demonstrations, living history, storytelling, costumed interpretation and dramatic/creative arts. Techniques for resource interpretation for the physically or mentally challenged, sensory impaired, elderly and international visitors will be discussed. The sensitive handling of controversial/sensitive educational issues will also be discussed.

PRA 280 Park Ranger Internship

1-6 credits

Prerequisite: PRA 102

This course gives you a realistic work experience in the field. All work will be supervised by park rangers currently employed by land management agencies at various levels of government. These preceptors will ensure that you participate in relevant field work and perform to the standards expected of employees of the agencies in which the internship occurs.

PSY- Psychology

PSY 101 General Psychology I

3 credits

PSY 101 is the scientific study of behavior including motivation, emotion, physiological psychology, stress and coping, research methods, consciousness, sensation, perception, learning and memory.

PSY 102 General Psychology II

3 credits

PSY 102 is the scientific study of behavior including cognition, language, intelligence, psychological assessment, personality, abnormal psychology, therapy, life span development, and social psychology.

PSY 110 Career Development

3 credits

PSY 110 assists students in recognizing their career potential, and provides tools for making realistic decisions concerning educational and occupational objectives.

PSY 116 Stress Management

1-3 credits

PSY 116 identifies the physiological, emotional and behavioral aspects of stress. Techniques of stress reduction and management are explored and applied, including nutrition, exercise, assertiveness, time management, and financial management. This course is not designed to transfer.

PSY 215 Psychology of Adjustment

3 credits

PSY 215 emphasizes personal growth and the development of interpersonal skills. Focus is on the practical application of psychological principles and theories in achieving self-understanding and personal growth.

PSY 226 Social Psychology

3 credits

PSY 226 covers behavior of humans in social settings including attitudes, aggression, conformity, cooperation and competition, prejudice, and interpersonal attraction.

PSY 227 Psychology of Death and Dying

3 credits

PSY 227 examines the philosophies of life and death, emphasizing dying, death, mourning, and the consideration of one's own death.

PSY 235 Human Growth and Development

3 credits

PSY 235 is a survey of human development from conception through death emphasizing physical, cognitive, emotional and psychosocial factors.

PSY 238 Child Growth and Development

3 credits

PSY 238 covers growth and development of the individual from conception through childhood, emphasizing physical, cognitive, emotional, and psychosocial factors.

PSY 249 Abnormal Psychology

3 credits

PSY 249 examines abnormal behavior and its classification, causes, treatment, and prevention.

REA - Reading

REA 030 Basic Reading Skills

2 credits

Prerequisite: Appropriate ACCUPLACER score.

REA 030 focuses on strategies for word attack, vocabulary development, stages of reading and basic reading comprehension.

REA 060 Foundations of Reading

3 credits

Prerequisite: REA 030 or appropriate ACCUPLACER score.
REA 060 focuses on strategies for vocabulary development, improved reading comprehension and enrichment.

REA 090 College Preparatory Reading

3 credits

Prerequisite: REA 060 or appropriate ACCUPLACER score.

REA 090 enables you to apply strategies for improving comprehension, developing vocabulary, and increasing rate for reading college textbooks.

REE - Real Estate

REE 103 Real Estate Brokers I 6 credits

Co-requisite: REE 104

This course may change course number and credits after the printing of this catalog.

REE 103, along with REE 104, enables you to meet the educational requirements of the Colorado Real Estate Commission for a Colorado Real Estate Brokers license, and includes real estate law and practice, practical application and current legal issues.

REE 104 Real Estate Brokers II 5 credits

Co-requisite: REE 103

This course may change course number and credits after the printing of this catalog.

REE 104, along with REE 103, enables you to meet the educational requirements of the Colorado Real Estate Commission for a Colorado Real Estate Brokers license. This course includes Colorado contracts and regulations, real estate closings, and trust accounts and record keeping.

REE 275 Special Topics 1-3 credits

REE 275 provides students with a vehicle to explore special topics of interest in depth.

REE 285 Independent Study 1-3 credits

Prerequisite: Permission of instructor
REE 285 meets your individual needs through intensive study or research under the direction of a qualified instructor.

REE 287 Cooperative Education/Internship 1-3 credits

Prerequisite: Permission of instructor
REE 287 provides students with the opportunity to supplement course work with practical work experience related to their educational program and occupational objectives. Students are placed at approved workstations related to their program of study. They work under the immediate supervision of experienced personnel at the business location and with the direct guidance of the instructor/coordinator.

RTE- Radiologic Technology

Students must be accepted into the Radiology Program to take any RTE course.

RTE 101 Introduction to Radiography 2 credits

Prerequisite: HPR 178

RTE 101 provides an introduction to radiology including equipment, exposure, positioning and the knowledge necessary for the radiography student to provide safe patient care including communication skills, body mechanics, patient transfer, and radiography as a profession.

RTE 111 Radiographic Patient Care 2 credits

RTE 111 expands the information presented in RTE 101, and includes diversity, universal precautions, legal considerations and ethics. This course consists of lecture and laboratory experience in the patient care areas of asepsis, vital signs, venipuncture, medical emergencies, assistance with drug administration, patients with special needs, and death and dying.

RTE 121 Radiologic Procedures I 3 credits

RTE 121 introduces fundamentals of radiographic positioning including use of radiographic equipment and safety, positioning, terminology, anatomy, pathology, and skills necessary to perform radiographic procedures of the chest, abdomen, upper extremity, gastrointestinal and urinary systems.

RTE 122 Radiologic Procedures II 3 credits

RTE 122 introduces additional material covered in RTE 121 including the knowledge of anatomy, pathology, and skills necessary to perform radiographic procedures of the lower extremity, pelvis, spine, and bony thorax.

RTE 131 Radiographic Pathology & Image Evaluation I 1.5 credits

RTE 131 provides a detailed discussion of pathological conditions of the skeletal, respiratory, digestive, urinary, and reproductive systems. Related medical terminology will be discussed, along with assessment of exposure adjustment for pathologic conditions and evaluation of radiographs for appropriate anatomy, positioning exposure and pathology.

RTE 132 Radiographic Pathology & Image Evaluation II 1.5 credits

RTE 132 expands on the information in RTE 131 with a focus on pathology of the skull, vascular system, central nervous system, endocrine system. Related medical terminology will be discussed along with the continued assessment of image quality.

RTE 141 Radiographic Equipment/ Imaging I 3 credits

RTE 141 introduces the fundamental aspects of radiographic equipment including a basic review of Physics fundamentals pertaining to x-ray production, the x-ray machine, image receptors, and control of scatter radiation.

RTE 142 Radiographic Equipment/Imaging II

3 credits

RTE 142 expands information covered in RTE 141 and provides in-depth knowledge of radiographic exposure and the factors that effect radiographic film quality and assurance.

RTE 181 Radiographic Internship I

5 credits

RTE 181 introduces the clinical education experience at the clinical education center. The student applies knowledge learned in the classroom to the actual practice of radiography.

RTE 182 Radiographic Internship II

5 credits

RTE 182 introduces additional concepts and more complex radiographic procedures than those learned in Radiographic Internship I.

RTE 183 Radiographic Internship III

7 credits

RTE 183 reinforces the basic concepts of Radiographic Internship I and II.

RTE 221 Advanced Medical Imaging

3 credits

RTE 221 introduces advanced imaging techniques including radiography of the cranium, facial bones and special radiographic procedures. These concepts are combined with the basic oral communication techniques necessary for the professional radiographer.

RTE 231 Radiation Biology/Protection

2 credits

RTE 231 provides the basic knowledge and understanding of the biologic effects of ionizing radiation and radiation protection and safety.

RTE 281 Radiographic Internship IV

8 credits

RTE 281 introduces you to the radiographic specialty areas of Pediatrics, Geriatrics, the out-patient clinic, as well as increasing proficiency in general radiography.

RTE 282 Radiographic Internship V

8 credits

RTE 282 introduces you to the radiographic specialty areas of portable and trauma radiography as well as increasing proficiency in general radiography.

RTE 289 Registry Review (capstone course)

3 credits

RTE 289 prepares the radiology technology student to effectively search for a job in radiography.

SBM- Small Business Management

www.rccc.edu/business

SBM 101 Starting a Small Business

1 credit

SBM 101 provides a brief overview of various topics related to starting a small business. Some topics are types of businesses, location, image, insurance, permits, and licenses.

SBM 103 Legal Aspects of a Small Business

1 credit

SBM 103 provides a brief overview of the legal issues involved in starting and managing a small business. The course focuses on business organization, contracts and agreements, and protecting the business.

SBM 106 Recordkeeping for a Small Business

1 credit

SBM 106 provides an overview of recordkeeping for a small business. Students learn basic bookkeeping skills and recordkeeping requirements.

SBM 108 Marketing for a Small Business

1 credit

SBM 108 provides a brief overview of the marketing functions applied to a small business. Topics include planning a marketing strategy, promoting a business, competitive analysis, and customers and prospects.

SBM 110 Managing a Small Business

1 credit

SBM 110 provides a brief overview of the management process as it applies to the small business. Concepts covered in the course include setting goals, conducting evaluations, and analyzing financial records.

SBM 112 Financing a Small Business

1 credit

SBM 112 provides a brief overview of the basics of financing a small business. Topics include sources of capital, types of business loans, and maintenance of cash flow.

SBM 113 Writing a Business Plan

1 credit

Prerequisites: SBM 101, 103, 106, 108, 110 and 112 or instructor permission
SBM 113 is the final course in the small business certificate program. Students will write a business plan from the material they have developed in the other courses.

SBM 175 Special Topics

1-3 credits

SBM 175 provides students with a vehicle to pursue in depth exploration of special topics of interest.

SBM 185 Independent Study

1 credit

Prerequisite: Permission of instructor
SBM 185 meets the individual needs of students. Students engage in intensive study or research under the direction of a qualified instructor.

SCI - Science

SCI 155 Integrated Science I

4 credits

SCI 155 examines the nature of energy and matter, their interactions and changes, and the application of fundamental concepts to the study of our natural world.

SCI 156 Integrated Science II**4 credits**

SCI 156 examines earth and biological systems, living and non-living environments, through the application and refinement of fundamental energy and matter concepts.

SOC- Sociology

SOC 101 Introduction to Sociology I**3 credits**

SOC 101 examines the basic concepts, theories and principles of sociology, as well as human culture, social groups, the role of society in the development of self, deviance, and the social issues of age, gender, class and race in contemporary society.

SOC 102 Introduction to Sociology II**3 credits**

SOC 102 examines social institutions and their representative organizations from a macro-micro perspective. Critically explores issues of social change, demography, social movements, and conflicts and trends within political, economic, educational, religious, and familial structures.

SOC 205 Sociology of Family Dynamics**3 credits**

SOC 205 develops an understanding of marriage, family and kinship. The course examines the family as an institution and how social, cultural and personal factors influence family relations. The stability and diversity of the family will be explored, along with current trends and some alternative lifestyles.

SOC 215 Contemporary Social Problems**3 credits**

SOC 215 critically explores current social issues that result in societal problems. This course adopts a social constructionist perspective to focus on such issues as civil liberties, gender discrimination, substance abuse, crime, poverty and social change.

SOC 218 Sociology of Diversity**3 credits**

SOC 218 explores the variety of inter-group relations regarding race, nationality, ethnicity, gender, sexual orientation, and other diversity issues. Patterns of prejudice, discrimination and possible solutions to these issues will be addressed.

SOC 237 Death and Dying**3 credits**

SOC 237 provides an opportunity to familiarize students and professionals with the needs and issues surrounding dying and death. This course will provide sociological, psychological, religious, historical and anthropological perspectives for interpreting contemporary American customs dealing with dying, death and bereavement. We will examine the professions associated with death and dying, such as hospice, funeral and crematory institutions, and medical care.

SOC 265 Violence and Culture**3 credits**

SOC 265 examines the concepts, relationships, organizations, and research as they relate to violence in multiple cultural settings. This course assists in developing an understanding of societal and institutional causes of violence; explores resources for intervention and treatment; and provides service learning applications in violence assessment, treatment, and victim assistance.

SPA- Spanish

www.rccc.edu/languages

SPA 101 Conversational Spanish I**3 credits**

SPA 101 provides beginning students the skills necessary to understand and speak Spanish. The material includes basic vocabulary, grammar, and expressions that are used in daily situations and in travel.

SPA 102 Conversational Spanish II**3 credits**

Prerequisite: SPA 101 or permission of instructor.

SPA 102 provides students the skills necessary to understand and speak Spanish. The material continues to cover basic conversation patterns, expressions, and grammar.

SPA 109 Spanish for Travellers**2 credits**

SPA 109 introduces the basic vocabulary and expressions useful to travelers in the Spanish speaking countries. The course will concentrate on the customs, traditions and cultural attitudes to be discovered by visitors to the destination country. Cultural diversity and global awareness are integral to this course of study. This course does not fulfill Humanities area requirements. Not intended for transfer.

SPA 111 Spanish Language I**5 credits**

SPA 111 deals with the development of functional proficiency in listening, speaking, reading and writing the Spanish language. Note: The order of the topics and methodology will vary according to individual texts and instructors.

SPA 112 Spanish Language II**5 credits**

Prerequisite: SPA 111 or instructor permission.

SPA 112 continues Spanish Language I in the development of functional proficiency in listening, speaking, reading and writing the Spanish language. Note: The order of the topics and the methodology will vary according to individual texts and instructors.

SPA 115 Spanish for the Professional I**3 credits**

SPA 115 is designed as an introduction to working knowledge of the target language, cultural behaviors and values useful in various professional fields such as health care, law enforcement, bilingual education, business, and others.

SPA 211 Spanish Language III

3 credits

Prerequisite: SPA 112 or instructor permission.

SPA 211 continues Spanish Language I and II in the development of increased functional proficiency in listening, speaking, reading and writing the Spanish language. Note: The order of the topics and the methodology will vary according to individual texts and instructors.

SPA 212 Spanish Language IV

3 credits

Prerequisite: SPA 211 or instructor permission.

SPA 212 continues Spanish Language I, II and III in the development of increased functional proficiency in listening, speaking, reading and writing the Spanish language. Note: The order of the topics and the methodology will vary according to individual texts and instructors.

SPA 215 Spanish for the Professional II

3 credits

SPA 215 continues Spanish 115 in the development of a working knowledge of the target language, cultural behaviors and values useful in various professional fields such as

health care, law enforcement, bilingual education, business, and others.

SPA 275 Special Topics

1-6 credits

SPA 275 provides students with a vehicle to pursue in depth exploration of special topics of interest.

SPA 285 Independent Study

1-6 credits

Prerequisite: Permission of the Instructor.

SPA meets the individual needs of students. Students engage in intensive study or research under the direction of a qualified instructor.

SPE- Speech

www.rccc.edu/speech

SPE 115 Public Speaking

3 credits

SPE 115 combines the basic theory of speech communication with public speech performance skills. Emphasis is on speech delivery, preparation, organization, support, and audience analysis.

SPE 125 Interpersonal Communication

3 credits

SPE 125 examines the communication involved in interpersonal relationships occurring in family, social and career situations. Relevant concepts include self-concept, perception, listening, nonverbal communication, self-disclosure and conflict.

SPE 205 Voice and Diction

3 credits

SPE 205 studies the physiological production of the speaking voice and methods for improving the quality of the spoken word in general American speech.

SPE 216 Principles of Speech Communication II

3 credits

Prerequisite: SPE 115

SPE 216 emphasizes the intensification of ideas and styles with a focus on persuasive speaking. The course includes additional studies in rhetorical analysis and oral delivery methods.

SPE 217 Group Communication

3 credits

SPE 217 enables students to improve their abilities to analyze, evaluate and impact group discussions, group processes, leadership responsibilities, group dynamics, group decision making and other elements of group communication.

SPE 220 Intercultural Communication

3 credits

Prerequisite: SPE 115 or permission of instructor

SPE 220 explores the link between culture and communication and will develop and/or enhance communication skills and the abilities appropriate to a multicultural society. Emphasis will be on understanding diversity within and across cultures. Relevant concepts include perception, worldview, ethics, language, and nonverbal communication.

SPE 230 Argumentation and Debate

3 credits

Prerequisite: SPE 115 or permission of the instructor

SPE 230 acquaints you with the theory of argumentation, including reasoning, evidence, refutation, critical thinking, and extemporaneous speaking. The course includes practice in preparation and oral analysis of selected arguments and styles of debating.

SPE 275 Special Topics

1-6 credits

SPE 275 provides students with a vehicle to pursue in depth exploration of special topics of interest.

SPE 285 Independent Study

1-6 credits

SPE 285 meets the individual needs of students. Students engage in intensive study or research under the direction of a qualified instructor.

THE- Theatre Arts

www.rccc.edu/theatre

THE 100 Technical Theatre Lab

1-3 credits

THE 100 provides students with safety training for working with equipment used for technical theatre, as well as hands-on experience in one or all of the following areas: stage lighting, set construction, stage properties, costuming and makeup.

THE 104 Basic Costume and Apparel Construction

3 credits

THE 104 provides students with training in cutting and sewing techniques, as well as knowledge of fabric types, qualities, uses, and cleaning.

THE 105 Introduction to Theatre Arts

3 credits

THE 105 includes discussions, workshops, and lectures designed to discover, analyze and evaluate all aspects of the theatre experience: scripts, acting, directing, staging, history, criticism and theory.

THE 109 Basics of Pattern Drafting

3 credits

Prerequisite: THE 104 or permission of instructor

THE 109 provides students with basic techniques in pattern drafting. Techniques will include exploring computer design as well as traditional drafting methods.

THE 111 Acting I

3 credits

THE 111 covers basic acting techniques and approaches including scene study, improvisation, and script analysis. The course includes practical application through classroom performance.

THE 112 Acting II

3 credits

Prerequisite: THE 111 or permission of instructor.

THE 112 continues to explore basic acting techniques and approaches including scene study, improvisation, and intermediate script analysis. The course includes practical application through classroom performance.

THE 116 Technical Theatre

3 credits

THE 116 introduces hands-on methods of constructing and painting scenery and properties and operating stage lighting. Students also learn the proper procedures of using shop equipment and serving on stage crews.

THE 120 Drafting for the Performing Arts

3 credits

Prerequisites: THE 116 or permission of instructor

THE 120 teaches students to apply basic drafting techniques to various performing arts applications and venues such as ground and lighting plots for stage, film, dance

and music. Other projects will include design layouts, working, detailed and isometric drawings. Attention will be given to drawing symbols, notations, dimensions and blueprint reading.

THE 125 Individual Singing Lessons for Musical Theater

0.5 credit

THE 125 focuses on basic vocal technique including breath support, belt technique, diction, body alignment, expressive communication, stage presence and microphone techniques. Various repertoire and styles are explored. The course includes a final performance before an invited audience.

THE 126 Auditioning for Musical Theater

3 credits

THE 126 builds a confident, talented and exciting audition. The course includes a mock video taped audition, and covers resumes, head shots, repertoire choices, stage fright, 16-bar audition and dressing for success. This course is presented in conjunction with producers from regional theaters providing valuable feedback for the participants.

THE 131 Theatre Production I

3 credits

Prerequisite: THE 111, THE 112, or permission of instructor

THE 131 allows students to put into practice theories of theatre production. Participation in set construction, scenic artistry, costuming, lighting, sound, acting, stage managing, and administration is available.

THE 132 Theatre Production II

3 credits

Prerequisites: ENG 060, REA 090, THE 111, THE 112, or permission of instructor

THE 132 allows students to put into practice theories of theatre production. Participation in set construction, scenic artistry, costuming, lighting, sound, acting, stage managing, and administration is available.

THE 135 Stage Makeup I

2 credits

THE 135 covers makeup design and application techniques. Techniques include basic corrective, character, old age, and fantasy application.

THE 136 Stage Makeup II

2 credits

Prerequisite: THE 135

THE 136 continues to explore theatrical makeup design and application techniques. In addition, prosthetics, hair design and other more advanced applications will be explored.

THE 140 Stage Dialects

1 credit

THE 140 teaches students to develop skills in nine dialects and accents.

THE 141 Improvisation I

1 credit

THE 141 helps students learn improvisation skills for performance and character development. Emphasis is placed on "Second City" style of improvisation.

THE 142 Improvisation II

1 credit

Prerequisite: THE 141, THE 111 or permission of instructor.

THE 142 helps students continue developing improvisation skills learned in THE 141. Exercises are more advanced and difficult. Level of instruction is appropriate for experienced and/or advanced actors.

THE 143 Basic Acting Technique

1 credit

THE 143 offers scene work and acting exercises for people with little or no training or experience in the theatre. The Stanislavski System of character analysis and development is stressed.

THE 144 Scene Study**1 credit**

Prerequisite: THE 143, THE 111 or permission of instructor

THE 144 emphasizes the Stanislavski approach. Students will explore acting skills through advanced material, including avant garde and classical.

THE 145 Audition Techniques**1 credit**

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

THE 145 focuses on the selection and preparation of audition materials, including prepared monologues, cold readings and improvisation techniques. The basics of resume preparation are also discussed.

THE 151 Stagecraft I**3 credits**

Prerequisite: THE 116 or permission of the instructor.

THE 151 focuses upon fundamental theories and construction of flats, platforms, stair units, soft scenery and other aspects of stagecraft.

THE 152 Production Stage Management I**3 credits**

Prerequisite: THE 116 or permission of the instructor.

THE 152 focuses on the basics of stage management, including making a stage manager's book, organizational methods and protocols of production, calling cues in production and personnel relationships and responsibilities.

THE 165 The Costume and Fashion Industry**3 credits**

THE 165 provides students with an overview of the Theatre Costume and Fashion industries. Students will be introduced to many facets of both industries providing information that will assist in making career choices.

THE 200 Paint, Draw, Render, Model Techniques**3 credits**

Prerequisite: THE 105 or permission of instructor

THE 200 introduces art techniques that are needed specifically in theatrical design. Techniques will include painting, rendering of scenic, lighting, costume designs, and model construction techniques.

THE 210 Singing for Actors**3 credits**

THE 210 allows students to explore and perform Musical Theatre songs. Students use a pedagogical approach to evaluate their vocal structure and formulate a systematized series of vocal and whole body exercises to develop and enhance their self-confidence and vocal instrument through in-class performance and variety show presentation.

THE 211 Development of Theatre I**3 credits**

THE 211 surveys the history and evolution of drama from Ancient Greece to the Renaissance, emphasizing all aspects of the art from period values to analysis of dramatic literature and performance.

THE 212 Development of Theatre II**3 credits**

THE 212 surveys the history and evolution of drama from the Renaissance to the present, emphasizing all aspects of the art from period values to the analysis of dramatic literature and performance.

THE 213 Intermediate Acting I**3 credits**

THE 213 continues THE 112. Emphasis is on artistic concentration of voice and movement. A detailed character biography is required.

THE 214 Intermediate Acting II**3 credits**

THE 214 emphasizes artistic concentration of voice and movement. Detailed character biography is required. This course is a continuation of THE 213.

THE 215 Playwriting**3 credits**

THE 215 gives students the opportunity to learn and practice playwriting techniques, thereby improving creative writing skills. Elements of dramatic structure dialogue, styles, and theatrical practices are emphasized.

THE 216 Theatre Lighting and Design**3 credits**

Prerequisite: THE 116 or permission of the instructor.

THE 216 focuses on the theory and practice of stage lighting. Topics include basic electrical theory, color theories, rigging and design of lighting for the performing arts.

THE 220 Directing I**3 credits**

Prerequisite: Acting I or consent of instructor

THE 220 covers basic techniques for stage directing in contemporary theatre. Topics to be covered include stage composition, script analysis, work with actors, and the collaborative role of the director.

THE 221 Set Design**3 credits**

Prerequisite: THE 116 or permission of instructor

THE 221 emphasizes two-and three-dimensional drawings and designs and color theory. Basic methods of artistic analysis and coordinating with other creative personnel are included. Students construct 3-D models and a theatrical stage set.

THE 225 Sound Operation and Design (Pending approval in CCCNS)**2 credits**

THE 225 will work to understand and apply fundamental processes required to create a conceptual sound design for a stage play.

THE 230 Directing II**3 credits**

Prerequisite: Directing I or permission of the instructor

THE 230 continues to explore basic technique for stage directing in contemporary theatre. Subjects to be covered are stage composition, script analysis, work with actors, and the collaborative role of the director. Student will direct a one-act theatre piece for final project.

THE 231 Theatre Production III**3 credits**

THE 231 allows students to continue to put into practice the theories of theatre production. Participation in set construction, scenic artistry, costuming, lighting, sound, acting, stage-managing and administration are available.

THE 232 Theatre Production IV**3 credits**

Prerequisites: THE 111, THE 112 or faculty consent.

THE 232 allows students to put into practice theories of theatre production. Participation in set construction, scenic artistry, costuming, lighting, sound, acting, stage managing, and administration is available.

THE 235 Costume Shop Organization**2 credits**

THE 235 explores the various aspects of a costume shop, including organizing stock, materials and budget management.

THE 237 History of Costumes and Fashion**3 credits**

THE 237 provides an examination of the clothing and accessories used by humans around the world from Prehistoric to Modern times.

THE 240 Theater Voice and Diction**3 credits**

THE 240 provides students with individual tutorials, which define, design and apply specific vocal techniques to abate singing and speech difficulties. Master class performances provide the opportunity to conjure the energy, charisma and stage command necessary for presentations.

THE 241 Stage Properties**3 credits**

Prerequisite: THE 116 or permission of the instructor.

THE 241 offers the fundamentals of set dressing/stage properties theory and practice, including plot design, period style, set props, hand props, production paperwork and scene changes.

THE 245 Basic Costume Design and Construction**3 credits**

Prerequisites: THE 106 and THE 108

THE 245 explores the basics of costume design and color theory. Construction techniques using regular and industrial sewing machines will be applied in constructing costumes and accessories. Students will be introduced to pattern drafting.

THE 260 Resume and Portfolio Development**1 credit**

THE 270 will allow students to assemble a portfolio and resume for classroom presentation and job applications.

THE 275 Special Topics: Theatre**1-6 credits**

THE 275 explores current topics, issues and activities related to one or more aspects of the named discipline.

THE 280 Internship (Field Education)**1-3 credits**

THE 280 provides students with the opportunity to supplement coursework with practical work experience related to their educational program. Students work under the immediate supervision of experienced personnel at the business location and with the direct guidance of the instructor.

THE 284 Internship**1-6 credits**

THE 284 provides students with the opportunity to supplement coursework with practical work experience related to their educational program. Students work under the immediate supervision of experienced personnel at the business location and with the direct guidance of the instructor.

THE 285 Independent Study**1 credit**

THE 285 emphasizes structured and guided, individualized study that is organized and tailored around the interests and needs of the individual student.

WQM- WATER QUALITY MANAGEMENT TECHNOLOGY

(All courses are approved for CEUs and training units.)

www.rccc.edu/wqm

WQM 100 Introduction to Water Quality Management**3 credits**

WQM 100 introduces the water and wastewater treatment field and acquaints the prospective technicians with the applied science concepts that are used to operate, maintain and monitor water quality. Topics include hydrological cycle, water sources, hydraulics, ecosystems, pollution, water chemistry, water calculations, microbiological aspects of water and water quality control.

WQM 105 Specific Calculations for Water Quality Management**4 credits**

WQM 105 provides students with an in-depth study of the calculations associated with water and wastewater treatment. Topics include dimensional analysis, detention time, surface loading, filtration and backwash rates, settleable solids, volatile solids, mean cell residence times, settleability, disinfection, and chemical dosage as relating to trickling filters, ponds, RBC and activated sludge.

WQM 106 Mechanical- Physical Treatment**3 credits**

WQM 106 serves as a basic introduction into wastewater treatment. Topics include the technician and their responsibility, effects of waste discharges, natural cycles, solids in wastewater, NPDES permits, collection systems, pretreatment, primary treatment, secondary treatment, advanced treatment, flowmeasuring, solids handling and disposal.

WQM 107 Biological Treatment**3 credits**

WQM 107 covers the major types of wastewater treatment processes, including trickling filters, rotating biological contactors, lagoons and activated sludge. Topics of each system include: design, operating guidelines, process control, testing procedures, maintenance and safety.

WQM 108 Sludge Treatment**3 credits**

WQM 108 includes aerobic and anaerobic digestion; solids thickening using gravity, dissolved air, centrifuge, vacuum filters and drying beds; sludge stabilization by chemical means; sludge conditioning by chemical, thermal, wet oxidation or elutriation; volume reduction by composting or mechanical drying; sludge destruction by incineration; sludge storage; and land disposal with environmental controls.

WQM 109 Water Distribution**3 credits**

WQM 109 covers the purpose, selection and location of water storage facilities and the operation and maintenance of related equipment. Topics include storage facilities and capabilities, booster pumps, water mains and appurtenances, joints, pipe protection and installation, valves, fittings, and hydrants. Water quality standards, contaminants and degradation inspection and monitoring, system troubleshooting, are also covered.

WQM 115 Water Sources and Supply**3 credits**

WQM 115 provides an introduction into the water supply systems and sources of water. Topics include sources and selection of water, water quality problems, reservoir management, intake structures, well and introductory plant operations.

WQM 116 Water Pre-Treatment**3 credits**

WQM 116 covers coagulation, flocculation, sedimentation, filtering, corrosion, and taste and odors. Topics for each process include descriptions, operating procedures, associated calculations, startup and shutdown procedures, laboratory tests, trouble-shooting, maintenance, safety and records.

WQM 117 Domestic Water Treatment Processes**3 credits**

WQM 117 covers iron and manganese control, fluoridation and softening, trihalomethanes, demineralization and handling of process waste. Topics for each process include process descriptions, operating procedures, startup and shutdown procedures, laboratory test, trouble-shooting, maintenance, safety and records.

WQM 118 Wastewater Collection Systems**3 credits**

WQM 118 covers the purpose, components and design of collection systems. Topics include safety procedures, inspection and testing, pipeline cleaning and maintenance, underground repair, lift stations and sewer rehabilitation.

WQM 119 Basic Water Quality Analysis**4 credits**

WQM 119 relates the results of laboratory control tests to the chemistry of water and wastewater treatment. Students gain the skills and techniques to operate within a laboratory. Topics include laboratory equipment and instrumentation-identification, written reports and laboratory tests. Laboratory testing includes hardness, alkalinity, dissolved oxygen, biochemical oxygen demand, inorganic chemicals, pH and disinfectant residuals.

WQM 120 Water Quality Equipment Maintenance**4 credits**

WQM 120 provides an in-depth understanding of mechanical and electrical equipment maintenance. Topics include correct use of power and hand tools, preventive and repair maintenance of pumps, motors, chlorinators, motor control units, and other treatment plant equipment and safety procedures.

WQM 121 Environmental Sampling and Volume Measurement**3 credits**

WQM 121 is designed to provide students with the knowledge and skills to collect contaminant samples for laboratory analysis, to select and prepare appropriate sample containers; to keep accurate sampling records; access sampling sites and do composite sampling. This course also provides sampling safety skills and sampling quality control and assurance methods.

WQM 122 Instrumentation and Electrical Control**3 credits**

WQM 122 provides an understanding of electrical theory, various types of electrical instrumentation equipment found in treatment facilities, operation, troubleshooting electrical problems and safety procedures.

WQM 124 Water Certification Review for Class C and D

3 credits

WQM 124 helps prepare students for the operators certification test in water at the C or D level. Topics include water principles, mathematics, hydraulics, water filtration, chemical treatment, source control, basic operations, Colorado Primary Drinking Water Regulations, housekeeping and laboratory analysis.

WQM 125 Water-Wastewater Certification Review for Class C and D

3 credits

WQM 125 helps students prepare for the operators certification test in wastewater at the C or D level. Topics include wastewater principles, mathematics, hydraulics, conventional treatment of wastewater, wastewater sedimentation, Colorado Water Quality Control Act, biological treatment of wastewater, effluent standards for wastewater, sludge handling and disposal, disinfection, pumps, safety, housekeeping, and laboratory analysis.

WQM 126 Safety in the Water Quality Industry

3 credits

WQM 126 covers the safety aspects in the water and wastewater industry. Topics include development of safety policies and programs, job safety orientation, driving practices, CPR/first aid, confined spaces, hazardous communication, safety with energy electrical, mechanical, thermal and pressure, trenching, street work, laboratory, treatment equipment, construction vehicles/equipment and chlorine and other chemicals, security and safety standards.

WQM 150 Troubleshooting

3 credits

WQM 150 provides students with troubleshooting practices and procedures for chemical adjustments, equipment failures; electrical, mechanical, pneumatic and hydraulic, source contamination, system control procedures and redundancies.

WQM 200 Hydraulics for Water Quality Management

4 credits

WQM 200 introduces the mathematical principles of density, specific gravity, pressures horsepower and energy costs, velocities, weirs, parshall flumes, venturimeters, California pipe method, flows from open-end pipes, settling velocities and classification of flow, distribution system friction losses.

WQM 206 Design Interpretations of Water Quality Systems

4 credits

WQM 206 provides an in-depth study and interpretation of blueprints, scale drawings, contour maps, profile drawings and symbols application to treatment facilities. The course also includes basics in HVAC, lighting, construction techniques, building materials and energy conservation.

WQM 207 Operations and Control of Activated Sludge Systems

4 credits

WQM 207 provides a basic engineering overview of the activated sludge process and develops all process control activities around the biology of the treatment system. Topics include: settle-o-meters, flows concentrations, and oxygen uptake, turbidity, microscopic examination of organisms, trend charting, process control strategies. Classroom activities are reinforced by field trips to various treatment facilities.

WQM 208 Advanced Wastewater Treatment

3 credits

WQM 208 prepares students for the advanced stages of solids removal, nitrogen removal, solids removal, effluent disposal and wastewater reclamation. Topics include: design, troubleshooting, maintenance, startup and shutdown, monitoring and interpretation of test results.

WQM 212 Drinking Water Regulations

4 credits

WQM 212 instructs the students on application, interpretation and implementation of the Colorado Primary Drinking Water Regulations as they apply to all types and sizes of public water systems and their source water.

WQM 216 Biological and Bacteriological Water Quality Analysis

4 credits

Prerequisites: WQM 119

WQM 216 studies microorganisms associated with all phases and concerns of water and wastewater treatment including bacteria, protozoa and algae. Topics include: microorganisms used in treatment, as indicators and the pathogens; regulations, health hazards and laboratory safety. Laboratory work involves media preparation, coliform testing, standard plate count, and bio-monitoring.

WQM 217 Disinfection Techniques in Water Quality Systems

4 credits

WQM 217 provides an understanding of disinfection alternatives used in treatment systems such as chlorine, ozone, ultraviolet light and bromine chloride. Topics include chemistry, equipment/maintenance, startup/shutdown procedures, hazards, safety and troubleshooting.

WQM 230 Industrial Monitoring and Treatment

3 credits

WQM 230 provides an understanding of industrial treatment. Various types of treatment systems are reviewed. Also included are safety, collection and preserving of samples, establishing an industrial monitoring program, operational strategies, interpretation of laboratory results, startup/shutdown of systems, maintenance, plans and specification, various types of industrial wastes, and troubleshooting.

WQM 280 Internship

1-6 credits

Contact the Water Quality Management Technology department for information about this course at 303.914.6325.

WQM 285 Independent Study

1-6 Credits

Contact the Water quality management Technology department for information about this course at 303.914.6325.



Directory

Red Rocks employs 265 fulltime faculty and staff members.

To reach a Red Rocks employee, call 303.914.6100, ext. 1 for a directory by name.

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Kathy Curtin, Accountant I, President's Office

Faculty

John Arnsperger
Faculty Emeritus, Accounting
M.B.Ed. University of Colorado, 1972; B.B.A., Ohio University, 1968

Dean Barchers
Faculty, Math
M.S., University of Colorado at Colorado Springs, 1998; B.S., Oklahoma Christian University, 1990

Stephanie Berg Orem
Associate Professor, Music
D.M.A., University of Colorado, 1990; M.M., Peabody Conservatory, 1982; M.A., University of Michigan, 1972; B.A., University of Michigan, 1970

Marjorie Berman
Faculty, History
Ph.D., University of Colorado, 1980; M.A., University of Colorado, 1974; B.A., Case Western Reserve University, 1972

Wendy Bird
Faculty, Business
J.D., Wayne State University, 1993; B.A., Saginaw Valley State University, 1989

Amy Braziller
Associate Professor, English
M.A., New York University, 1993; B.A., Empire State College, 1990

John Breece
Professor, Air Conditioning, Heating and Refrigeration
A.A.S., Red Rocks Community College, 1991; A.A.S., Mercer County Community College, 1977; Licensed Master Plumber, State of Colorado

Bob Brown
Faculty, Fire Science
B.A., Regis University, 2004

Dave Brown
Faculty, Sociology
Ph.D., University of Denver, 1991; M.A., University of Denver, 1988; B.S., Metropolitan State College of Denver, 1985

Steve Brown
Faculty, Emergency and Medical Services A.A.S., Red Rocks Community College, 2003

Peggy Burrus
Faculty, Business Technology
B.S., Oklahoma State University, 1975

Christie Burton
Faculty, Computer Information Systems/ Computer Science
Microsoft Certified Systems Engineer; Microsoft Certified Trainer

Marty Calderone
Faculty, Math
M.S., Northern Arizona University, 1996; B.A., University of Alaska, 1991; B.A., University of Alaska, 1979

Johanna Carter
Faculty, English
M.A., George Mason University, 1980; B.S., West Chester State College, 1970

Tom Connole
Professor, Library
M.A.L., University of Denver, 1974; M.A., University of Michigan, 1967; B.A., University of Colorado, 1966

Gayle Crane
Faculty, Chemistry
Ph.D., University of Wyoming, 1994; B.A., Chadron State College, 1989

Diana Denison
Assistant Professor, Economics
M.S., University of Wyoming, 1989; B.A., University of Wyoming, 1987

Heather Duncan
Faculty, Math
M.A.T., Northern Arizona University, 2001; B.A., Fort Lewis College, 1998

Kerry Edwards
Professor, Philosophy
Ph.D., Iliff School of Theology/University of Denver, 1989; M.A., Wycliffe College, Toronto School of Theology/ University of Toronto, 1981; B.A., Roberts Wesleyan College, 1977

Mildred Freeney-Hilton
Professor, Sociology
M.Ph., Roosevelt University, 1974; M.A., Roosevelt University, 1973; B.A., Blackburn College, 1971

Candace Garrod
Professor, Computer Information System/ Computer Science
M.Ed., Colorado State University, 1992; B.Ed., Colorado State University, 1986

Art Gomez
Faculty, Fire Science
A.A.S., Red Rocks Community College, 2004

Nicki Gonzales
Faculty, History
M.A., University of Colorado, 1997; B.A., University of Colorado, 1992

Eva Graziano
Faculty, Police Academy
Director
B.A., University of Denver, 1984

Paul Grant
Faculty, Fire Science
M.Ed., University of Phoenix, 2003; M.A., University of Phoenix, 2001; B.S., University of Phoenix, 1999

Bill Haas
Associate Professor, Physical Education
M.A., University of Northern Colorado, 1998; B.A., LaSalle University, 1970

Nora Hebert
Assistant Professor, Biology
Ph.D., University of California at Berkeley, 1990; A.B., University of California at Berkeley, 1983

Craig Hilton
Faculty Emeritus, Art
Licensed Master Plumber

Verne Ingram
Faculty, Accounting
M.A., University of Phoenix, 1994; C.P.A., 1980; B.S., University of Idaho, 1964

Pamela Jamruszka-Mencher
Professor, Speech
M.F.A., University of Wisconsin, 1981; B.A., Montana State University, 1978

Carla Joy
Faculty Emeritus, History
M.A., University of Denver, 1969; A.B., Loretto Heights College, 1967

Steven Kaye
Associate Professor, Biology
M.Ed., University of Hawaii, 1984; B.A., University of Hawaii, 1981

Liz Kleinfeld
Faculty, English
M.S., Illinois University, 1994; B.S., Bradley University, 1992

David Kriznar
Faculty, Computer Information System/ Computer Science
A.A.S., Red Rocks Community College, 1987

Sharon Lantz
Faculty, Teacher Education
M.S., University of Southwestern Louisiana, 1996; M.A., University of Northern Colorado, 1979; B.S., Northern Arizona University, 1973

Susan Lebron
Assistant Professor, Radiology
B.S., Midwestern State University, 2004; A.S., Horrey-Georgetown Technical College, 1995

Terri Lukavitch
Professor, Criminal Justice
M.A., University of Northern Colorado, 1986; B.A., University of Northern Colorado, 1978

Barbra Maher
Assistant Professor, Physics
M.S., University of Arizona, 1994; B.S., Austin Peay State University, 1992; A.S., San Jacinto College, 1989

Aimee Marcelo
Assistant Professor, Multimedia
M.A., University of Colorado at Denver, 2001; B.S., University of Florida, 1990

Sherry Messina Dewald
Ph.D.
Professor, Speech
Ph.D., University of Denver, 2002; M.A., University of South Dakota, 1977; B.A., University of Illinois, 1974

Linda Mundorff
Associate Professor, Health
Careers
M.S., University of Phoenix,
2001; M.S., California State
University-Northridge, 1984;
B.S., University of Colorado
Health Sciences Center,
1992; B.S., California State
University-Northridge, 1981

David Nelson
Faculty Emeritus, History
Ph.D., University of Denver,
1969; M.A., University of
Denver, 1964; B.A.,
University of Denver, 1963

Thomas Niehoff
Professor, Math
M.S., University of Colorado
at Denver, 1991; B.S.,
University of Illinois,
Champaign-Urbana, 1981;
A.A., Florida Junior College
at Jacksonville, 1977

Niki Nolles
Professor, English
M.A., University of Nevada-
Las Vegas, 1980; B.A.,
University of Nevada-Las
Vegas, 1976

Peggy Norwood
Assistant Professor,
Psychology Ph.D., University
of Virginia, 1991; M.Ed.,
University of
Virginia, 1987; B.A., Brown
University, 1986

Francisco Padilla
Professor, Spanish
M.A., Regis University, 1992;
B.A., University of Colorado,
1973

Rick Reeves
Faculty, Math
M.S., University of Colorado
at Denver, 1992; B.A.,
University of Colorado at
Denver, 1990

Terry Reeves
Faculty, Math
M.S., University of Colorado-
Denver, 1992; B.S.,
Oklahoma State University,
1989

Rand Richards
Faculty, Construction
Technology M.S., Montana
State University, 1990; B.S.,
Montana State University,
1988

Richard Roding
Assistant Professor,
Accounting
B.S., Eastern Illinois
University, 1970

Leticia Sara
Faculty, Political Science
M.A., University of Wyoming,
1998; B.A., University of
Wyoming, 1994

Berndt Savig
Assistant Professor, Art
M.F.A., University of Southern
Mississippi, 2002; B.A.,
University of Northern
Colorado, 1988

Julie Schneider
Assistant Professor,
Computer Information
System/Computer Science
B.A., University of Northern
Colorado, 1997

Walt Schreibman
Professor Emeritus,
Psychology
M.S., Purdue University,
1969; B.A., University of
Colorado, 1967

Chuck Smith
Associate Professor, Math
M.A., California State
Polytechnic College, San Luis
Obispo, 1969; B.S., California
State Polytechnic College,
San Luis Obispo, 1968

Marilyn Smith
Faculty, English
M.A., University of
Washington, 1977; B.A.,
University of Colorado, 1975;
A.A., El Paso Community
College, 1973

Larry Snyder
Faculty, Air Conditioning,
Heating and Refrigeration
Refrigerant Transition and
Recovery Certification, Ferris
State University; Class A
Mechanical License, City of
Boulder; National Center for
Construction Education and
Research Certification in
HVAC and Electrical

Cindy Somers
Faculty, Chemistry
Ph.D., University of
Washington, 1989; B.A.,
University of California, 1983

John Sperling
Professor Emeritus,
Carpentry B.S., University of
Colorado, 1970; Real Estate
Broker's License, Licensed
Contractor

Jack Stanesco
Professor, Geology
M.A., University of Northern
Colorado, 1974; B.A., Regis
College, 1968

Nancy Stein
Faculty, Psychology
M.A., University of Northern
Colorado, 1989; B.A.,
Metropolitan State College of
Denver, 1987

Rita Stoffel
Faculty, Medical Assisting
M.B.A., University of St.
Thomas, 1985; B.S.,
University of Minnesota, 1978

Rich Thatcher
Assistant Professor,
Electricity
Industrial/Commercial
Licensed Master Electrician;
A.A.S., Red Rocks
Community College, 1997

Bob Thomas
Faculty, Art
M.F.A., University of Denver,
1972; B.F.A., Indiana
University, Herron School of
Art, 1969

Bill Thompson
Teacher, Mathematics
M.S., New Mexico State
University, 1971; B.S., New
Mexico State University, 1969

Ricardo Trujillo
Assistant Professor, Business
M.B.A., Regis University,
1993; M.S., University of
Colorado, 1978

Laura A Zeeman
Assistant Professor,
Geology/Anthropology
M.A., University of Wisconsin,
1979; B.A., Southern
Connecticut State University,
1977

Kathryn Zeiler
Assistant Professor, Biology
Ph.D., University of Southern
Florida, 1989; B.A., University
of Southern Florida, 1979

Administrators

Nancy Carlson
Director Student
Employment
M.A., University of
Colorado at Denver, 1997;
B.A., San Diego State
University, 1972; A.A.,
Grossmont Junior College,
1969

Wayne Caruolo
Associate Vice President of
Technology
Instructional Services
M.A., Webster College,
1978; B.S., Norwich
University, 1970

Renie DelPonte
Dean of Instruction
Instructional Services
Dr. P.H., Loma Linda
University, 1995; M.S.,
Slippery Rock University,
1987; B.S., Colorado State
University, 1985

Paulann Doane
Executive Director
Foundation
M.A., American University,
1991; B.A. University of
Wyoming, 1987

Cher Haavind
Director Marketing and
Communications
B.A., Metropolitan State
College of Denver, 2001

Rich Hawkins
Executive Director Rocky
Mountain Education Center
B.S. Indiana State
University, 1979

Diane Hegeman
Associate Vice President,
Dean Arvada Campus
Ph.D., Colorado State
University, 2005
M.Ed., Colorado State
University, 1989; B.Ed.,
Colorado State University,
1980

Colleen Jorgensen
Dean of Instruction
Instructional Services
M.S., University of Colorado
at Denver, 1987;
B.A., University of
Northern Colorado, 1974

Robert Kraus
Chief of Police
Student Services
M.S., Regis University, 2000;
B.S., Metropolitan State
College of Denver, 1978;
A.A., Arapahoe Community
College, 1972

Carolyn Mattern
Director Student Life
Student Life
B.S., University of
Wisconsin, Milwaukee,
1977

Peggy Morgan
Interim Director
Business Services
B.S., Mesa State College,
1996

Vi Rapuano
Executive Director Human
Resources and Professional
Development
M.Ed., University of
Florida, 1984; B.S., Virginia
Polytechnic Institute and
State University, 1979

Dean Rathe
Registrar / Director of
Enrollment Services
Ph.D., University of
Northern Colorado, 1990;
M.A., University of Northern
Colorado, 1982;
B.A., St. Cloud, State
University, 1977

Cliff Richardson
Interim Chief Administrative
Officer
President's Office
M.P.A., University of
Colorado, 1987; B.S.,
Metropolitan State College,
1978

Sherrie Schneider
Vice President of Instruction
and Student Achievement
M.Ed., Colorado State
University, 1988; B.A.,
Colorado State University,
1983

Joan Smith
Director of Grants
Development and
Institutional Research
M.P.A., University of
Colorado at Denver, 2003;
B.S., Colorado Christian
University, 2000

Bruce Walthers
Vice President of Student
Services and Enrollment
Management
M.A., Bowling Green State
University, 1978; B.A.,
Colorado State University,
1977

Rebecca Woulfe
E-Learning Director
Instructional Services
M.A., University of
Colorado-Denver, 2000;
B.F.A., University of
Denver, 1985

Technical Professional

Renee Archuleta
High School Relations
Liaison
Student Recruitment

Akpor Avbenake
Coordinator
Grants, Research & Planning
Support
B.S., University of Benin,
1979

Stephanie Bacon
PA Clinical Coordinator
Physician Assistant Program
M.S., University of Kansas,
1981; B.S., University of
Nebraska, 1990; B.S.,
Colorado State University,
1979; B.A., Augustana
College, 1977

Susan Barnett
Interim Director
Children's Center

Richard Bibeau
Academic Advisor/Recruiter
Student Recruitment
Ph.D., International College,
1982; M.A., Azusa Pacific
University, 1979; M.A.,
California State University,
1972; B.A., Wayne State
University, 1967

Luretta Billeisen
Coordinator of Provider
Statistics
Family Resources

Pat Bolton
Director Family Resources
B.S.N. Memphis State
University, 1973

Judy Bowers
Director
Office of Student Recruitment
B.S., University of
Colorado, 1986

Karen Buck
Coordinator Foundation
Activities
Foundation
M.N.M., Regis University,
2002; B.A., University of
Colorado, Boulder; 1994

Diane Burke Pietro
Learning Center Manager
Rocky Mountain Education
Center
B.S.Ed., Bowling Green
State University

Cindy Carlson
Site Manager I
School-Age Child Care

Nikki Coto
Site Manager I
School-Age Child Care

Linda Crook
Director of Financial Aid
M.A., University of New
Mexico, 1998; B.A., Texas
Tech University, 1973

Karen Curtis
Learning Center
Coordinator
Rocky Mountain Education
Center
B.A., University of
Colorado at Denver, 1987;
B.A., University of
Colorado at Denver, 1983

Fadia Daphnis
Assistant Toddler/Preschool
Teacher
Children's Center

Danelle DePlanty
Site Manager I
School Age Child Care

Mayra Diaz
Toddler/Preschool Teacher
Children's Center

Daniel Duke Assistant Site Manager School-Age Child Care A.A.S., Art Institute of Colorado, 2000	Tanya Jenkins Assistant Site Manger School Age Child Care	Carrie Lehnerz Site Manager I School-Age Child Care	Marilyn Mercer Librarian Library M.A., Carnegie-Mellon University, 1975; M.L.S., University of Pittsburgh, 1972; B.A., Bryn Mawr College, 1970
Lauren Downs Site Manager I School-Age Child Care	Kelli Jordan Site Manager I School Age Child Care	Beth Little CARES Liaison Family Resources	Pat Moore Programs Coordinator Rocky Mountain Education Center B.S., Colorado State University, 1985
Jennifer Dunn Program Manager School-Age Child Care B.A.S., University of Missouri-Columbia, 1994	Gina Jimenez Coordinator and Community Liaison Arvada Campus B.A., Metropolitan State College of Denver, 1998	Amy Lloyd Site Manager I School Age Child Care B.A., Colorado Christian University, 2004	Greg Morey Academic Advisor Advising and Counseling M.A., University of Northern Colorado, 2003; B.S., Utah State University, 1985
Sarah Espinosa Site Manager II School Age Child Care	Shannan Kaurin Site Manager I School-Age Child Care	Barbara Luthye Site Manager II School-Age Child Care	Leslie Murray Assistant Controller Accounting Services B.S., University of Phoenix, 2000; A.A.S., Minnesota State University-Moorhead, 1991
Demerick Fradl M.D. Academic Coordinator Physician Assistant Program M.D., University of Colorado, 1977; B.S., Central Michigan University, 1967	Jim Keller Director Physician Assistant Program M.A., George Washington University, 1989; B.A., Park College, 1979; A.S., Baylor University, 1976	Dan Macy Educational Coordinator Arvada Campus M.A., University of San Francisco, 1993; B.A., San Jose State University, 1991; A.A., Foothill College, 1980	Deborah Nelson Outreach Specialist Family Resources B.S., Colorado Christian University, 1993
Jamie Hahn Toddler/Preschool Teacher Children's Center	Marilyn Kenfield Office Specialist Office of Special Services	Rachel McDonald Site Manager II School Age Child Care	Christine O'Brien Resource Referral Coordinator and Outreach Specialist Family Resources M.A., Johns Hopkins University, 1999; B.S., Towson University, 1990
Eric Howell Production/Design Coord. Marketing and Communications Dept. B.F.A., University of Wyoming, 1994; A.A., Central Wyoming College, 1992	Dana Kobold Coordinator Pathway Programs B.S.Ed., Northeast Missouri State University, 1987	Sandra McKinley Financial Aid Advisor Financial Aid B.A., University of California, 1978	John O'Neill Telecommunications Technician Audio Visual B.S., University of Wisconsin, 1982
Terry Hutchinson Publications Office/Project Center Assistant Student Life A.S., Parks Junior College, 1990	Jeannine Kreller Business and Industry Program Coordinator Rocky Mountain Education Center	Lynn McNally Office Specialist Family Resources	Elizabeth Ownsby Intern Department of Emergency Management A.S., Casper College, 2003;
Lizz Jackson Program Manager School-Age Child Care	Cindy Krut Toddler/Preschool Teacher Children's Center	Molly McNally-Dunn Director School-Age Child Care B.A., St. Joseph College, 1971	
Hilary Jenkins Site Manager I School Age Child Care B.S., Brigham Young University, 2002	Catherine Lachman Educational/Career Advisor Pathways	Randi Mendez Toddler/Preschool Teacher Children's Center	
	Jan Larson Lab and Shop Manager Construction Technology B.A., Syracuse University, 1966		

Lauren Peterson
Teacher
Children's Center
B.A., Baylor University, 2003

Pat Phillips
Academic Advisor
Advising
M.B.A., University of Colorado, 1972; B.M.E., Colorado School of Mines, 1961

Thyra Powers
Production Coordinator
Instructional Services
M.S., University of Leiden, 1982; B.S., University of Leiden, 1980; A.A., Nieuwland Opleidingen, 1993

Kris Robledo
Special Projects Coordinator
Family Resources
B.A., University of Northern Colorado, 1981

Cathy Rock
Technical Education
Pathways Coordinator
Construction Technology
Certificate of Construction Management, San Jose State University, 1990; B.A., Bucknell University, 1975

Stacy Roe
Interpreter Coordinator
Special Services
A.A.S., Front Range
Community College, 2001

Alice Rumph
Coors Learning Center
Manager
Rocky Mountain Education Center
B.S., Ohio State University, 1965

Deb Schroth
Radiology Program Director
Health Careers
M.B.A., Regis University, 2000; B.S., Regis University, 1998

Ron Schuetz
Technical Equipment
Coordinator
Rocky Mountain Education Center
A.A.S., Front Range
Community College, 1993

Donna Smith
Special Services
Coordinator
B.S., Metropolitan State College of Denver, 1996; A.A., Red Rocks
Community College, 1994

Anita Snyder
Teacher
Children's Center

Mark Squire
Coordinator Student Life
Activities Student Life
B.S., University of Northern Colorado, 1992; A.A.S., Red Rocks Community College, 1998

Robin Sullivan
Assistant Site Manager
School Age Child Care

Suzanne Sullivan
Internship & Job
Development Coordinator
Student Employment
M.A., University Northern Colorado, 1980; B.A., St. Joseph College, 1969

Mary Szydowski
Site Manager II
School-Age Child Care
B.S., University of Iowa, 2001

Cindy Vadeboncoeur
Financial Aid Advisor
Financial Aid
B.A., University of Minnesota-Duluth, 1978

Al Vendi
Testing and Assessment
Specialist
Assessment
B.S., University of Colorado, 1996

Al Wasser
Fitness Center Coordinator
Fitness Education Center
M.S., Colorado State University, 1989; B.A., University of Northern Colorado, 1975; A.A., Community College of Denver, 1973

Jannah Wendel
Teacher
Children's Center

Ruth Wengrovius
Coordinator Tutoring and Testing Center
Learning and Resource Center
M.A., University of Colorado at Denver, 1988; B.A., Colorado State University, 1976

Jeannette Werner
Customer Service/
Marketing Manager
Rocky Mountain Education Center
B.A., Colorado Christian University, 1991; A.A., Colorado Christian University, 1989

Michelle Wooley
Site Manager I
School Age Child Care

Linda Yazdani
ESL Program Coordinator
International Education
B.S.C., University of Victoria, 1985

Classified

John Anderson
Media Specialist IV
Media Resources

Kim Arellano
Administrative Assistant II
Enrollment Services

Claudia Aspinall
Administrative Assistant II
Facility Services

Janet Baker
Program Assistant I
Instructional Services

Jane Banzhaf
Administrative Assistant III
Emergency and Public Services

Lynn Beltran
Administrative Assistant III
Computer
Technology/Services

Suzette Benedetto
Administrative Assistant III
Enrollment Services

Greg Berry
Structural Trades II
Facility Services

Judith Brna
Accounting Technician II
School Age Child Care
Fredrick Brown
Custodian II
Facility Services

David Burns
Structural Trades II
Facility Services

Bishop Burroughs
Custodian II
Facility Services

Debbie Carson
Accounting Technician II
Cashier's Office

John Cassidy
Grounds & Nursery I
Facilities/Arvada Campus

Gabe Chavez
Grounds and Nursery III
Facility Services

Jeremy Cherrington
Custodian I
Facility Services

Joe Cisneros
Custodian I
Facility Services

Lisa Comba Administrative Assistant III School Age Child Care	Linda Frechette Program Assistant I Facility Services	Nancy Kookan Custodian I Facility Services	Rico Medina Structural Trades I Facility Services
Kathy Curtin Accountant I President's Office	Tony Garcia Structural Trades I Facility Services	Susan Kumpf General Professional II Records	Donna Merriman Administrative Assistant III Records
Deborah Dahlstrom-Morey Administrative Assistant III Marketing & Communications	Jody Glennon Labor, Trades and Crafts Operations I Facility Services	Sal Lafebre Custodian I Facility Services	Mel Moll Administrative Assistant III Records
Kenneth Dear Custodian I Facility Services	Shelley Glennon Accounting Technician II Accounting Services	Celedon Lefebre Custodian II Facility Services	Kirsten Moore General Professional II Human Resources
Marilyn Deitrick Accounting Technician II Cashier's Office	Gil Gonzales Accountant I Cashier's Office	Laura Licari Administrative Assistant III Grants, Research and Planning Support	Warren Munkres Custodian III Facility Services
Esther Diaz Custodian I Facility Services	Janet Gonzales Administrative Assistant III Instructional Services	Patricia Lopez Administrative Assistant II Rocky Mountain Education Center	Cathy O'Connell Program Assistant I Human Resources
Diane Drobnick Program Assistant I Health Careers	Allison Greene Administrative Assistant III Foundation	Bob Lyon Security I Campus Police	Wendi Oliveira Administrative Assistant III International Education
Pat Dunn Library Technician II Library	Tom Gurule Custodian II Facility Services	Stefanie Mackey Administrative Assistant II Campus Police	Shaun Ortega Grounds and Nursery I Facility Services
Arlene Duran Technician IV Physician Assistant Program	Scott Haugen General Labor I Administrative Services	Clara Macy Lab Coordinator I Instructional Services	Patricia Pacheco Library Technician III Library
Janis Eagan Administrative Assistant III Enrollment Services	Paul Henry Information Technology Technician II Computer Services	Darlene Marshall Administrative Assistant III Student Employment	Adrienne Petras Information Technology Professional II Computer Services
Jennifer Eaves Custodian I Facility Services	Janet Hill Dining Services III Children's Center	Eric Martin Custodian I Facility Services	Natasha Pino Custodian I Facility Services
Carolyn Fabrizio Accounting Technician II Cashier's Office	Alvarado Holguin Custodian I Facility Services	Kathleen Martinez Administrative Assistant III Construction Technology	Kathy Porch Information Technology Professional I Computer Services
Beth Foster General Professional II Student Life	Diane Hughes Administrative Assistant III Enrollment Services	Richard Martinez Information Technology Technician I Computer Services	Jerry Powers HVAC Mechanic Facility Services
Jennifer Fox Administrative Assistant III Rocky Mountain Education Center	Kathy Kiobasa Administrative Assistant II Records	Debbie Maya Accounting Technician III Payroll	Frank Procopio Custodian II Facility Services

Carmie Reinke
Accounting Technician III
Business Services

Rita Rigg
Administrative Assistant III
Business Services

Donna Roerig
Information Technology
Technician II
Computer Services

Joan Rome
Administrative Assistant III
Student Services

Karen Roosta
Administrative Assistant II
Admissions

Donna Salinas
Administrative Assistant III
College Relations

Isaiah Sanchez
Labor, Trades and Crafts
Trainee III
Facility Services

Matthew Sanchez
Grounds and Nursery I
Facility Services

Sheryl Scharnikow
Administrative Assistant III
Learning and Resource
Center

Kathy Schissler
Program Assistant II
President's Office

Sylvia Sieverding
General Professional II
Assessment

Jen Squire
General Professional III
Human Resources

Sonja Starkweather
Material Handler II
Facility Services

Peggy Stewart
Administrative Assistant III
Arvada Campus

Rick Sugar
Electrical Trades II
Facility Services

Debby Sylvester
Accounting Technician III
Payroll

Breona Taylor
Lab Coordinator I
Instructional Services

Danielle Trujillo
Administrative Assistant III
Rocky Mountain Education
Center

Mary Waller
Program Assistant I
Instructional Services

Shunna White
Administrative Assistant III
Financial Aid

Chi Wilson
Information Technology
Technician I
Computer Services



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Degree and Certificate Programs

Associate of Arts Transfer Degree, University Parallel

The Associate of Arts degree (60 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. To earn the Associate of Arts degree, you must complete the state designated general education requirements for a total of 35 credits. Other requirements are found on the degree requirement checklists and individual catalog emphasis areas. Emphases are available in the following areas:

Art
Business
Economics
English and Literature
Foreign Languages:
French
German
Spanish
Early Childhood Education
Elementary Education
History
Humanities
International Studies
Musical Theatre
Outdoor Physical Education
Philosophy
Political Science
Psychology
Sociology
Speech Communication
Theatre Arts

Associate of Science Transfer Degree, University Parallel

The Associate of Science degree (60 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. To earn the Associate of Science degree, you must first complete the state designated general education requirements for a total of 36 credits. Emphases are available in the following areas:

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

Associate of General Studies – Specialist Articulated Transfer Degree

The Associate of General Studies-Specialist degree (60 credits) is for the student who wants to complete the Associate of Arts state designated general education transfer course requirements and have an emphasis in a career-oriented program of study. Transfer agreements exist between RRCC and certain four-year colleges for the following career areas:
Criminal Justice
Early Childhood Professions
Emergency Medical Services
Graphics and Animation Technology
Multimedia 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. Courses are considered for transfer on an individual basis by the receiving four-year college or university.

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; however, courses are considered for transfer on an individual basis by the receiving four-year college or university.

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 (CCCOOnline)
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*
Microsoft Application Developer
MCAD
Microsoft Database Administrator
MCDBA
Microsoft Network System Administrator
MCSA
Computer Support Technician*
Network Systems Engineer MCSE*
Cisco Network Associate*
Programming Specialist*
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*
(CCCOOnline)
Electro Mechanical Industrial Maintenance Tech

IEBW/NECA Construction Technician

Maintenance Electrician*
Power Technology (CCCOOnline)

Data Communication Technician
Data Communication Designer

Fire Science
Fine Woodworking*

Plumbing
United Association of Plumbing and Pipefitting

Apprentice-related Technology with emphases in: (In partnership with the CITC)

Carpentry*
Drywall Application*
Electrical*
Ironworker*
Masonry*
Painting*
Plumbing*
Sheetmetal*

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

Emergency Management and Planning*(CCCOOnline)
Engineering Graphics Technology with emphases in:
Architecture*
Mechanical*

Fire Science Technology
Track One: New students
Track Two: Career advancement

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)

Outdoor Education
Paramedicine

Physical Education
Public Administration (through CCCOOnline)

Radiologic Technology
Theatre Technology*

Water Quality Management
Technology

* Certificate is also available.

* Certificate is also available.

Certificates

In addition to two-year degrees, Red Rocks students can earn certificates in a variety of specialties. A certificate can require as few as five credits and may count toward a two or four-year degree.

Basic Law Enforcement Training Academy

Business:

Accounting Clerk
Bookkeeping Clerk
E-Business
Management and Supervision
Small Business Management
Real Estate

Business Technology
Clerical Assistant Office Assistant

Computer Information Systems:
PC Applications Specialist

Web Development
Web Design

Computer Support Technician
Network Engineer - MCSE

Cisco Network Associate
Programming Specialist

Internet Programming Specialist
Microsoft Application Developer

MCAD
Microsoft Database Administrator

MCDBA
Microsoft Network System Administrator

Administrator

MCSA

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

Control System Technician
Electrical Installation

Facility Maintenance I
Fine Woodworking

HVAC Apprenticeship
HVAC Controls Technician

Journey Level Plumbing
Level I Refrigeration

Master Craftsman
Master Craftsman - Woodworking

Maintenance
Maintenance Electrician
Maintenance Technology

National Electrical Code
Residential Plumbing Codes

Refrigeration

Refrigeration Level 2
Residential Air Conditioning
Residential Construction Electrician
Residential Forced Air Heating
Residential HVAC
Residential Hydronic Heating
Residential Plumbing
Residential Plumbing and Heating
Post-Degree Specialization:
Advanced Construction Electrician
Advanced Maintenance Electrician
Master Craftsman in Fine

Woodworking
Refrigeration Level II

Criminal Justice:
Basic Law Enforcement Training

Academy
Investigations

Victim Assistance Administration
Victim Assistance Direct Service

Early Childhood Education:
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

Industry Upgrade
Mechanical

Fire Science:
Drive Operator

Firefighter I
Fire Inspector

Fire Instruction
Fire Investigations

Fire Investigator
Fire Officer I

Fire Officer II
Fire Officer III

Hazardous Materials Technology
Technical Heavy Rescue

Wildland Management

Health Careers:
Holistic Health/Holistic Nursing

L.P.N. Refresher
Medical Assisting

Medical Office
Nurse Aide

Phlebotomy Assistant
Phlebotomy

R.N. Refresher

Multimedia Technology:
Graphics and Animation Technology

Production and Design
Motion Graphics Animation

Web Page Design

Park Ranger Technology:
Law Enforcement

Outdoor Recreation
Public Safety

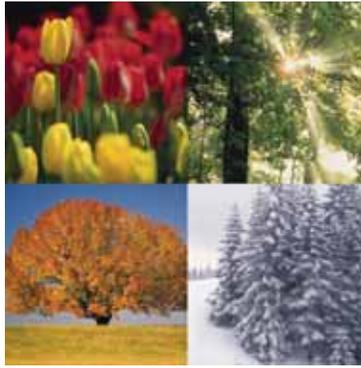
Resource Interpretation
Outdoor Recreation Leadership:

Outdoor Generalist
Mountaineering Skills

Winter Skills
Water-based Skills

Public Safety Communications
Theatre:

Stage Carpentry
Costume and Fashion Design



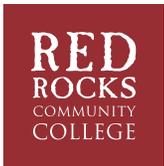
Lakewood Campus

13300 West Sixth Avenue
Lakewood, CO 80028-1255
303.914.6600

After 6 p.m. and weekends call:
303.914.6354

Arvada Campus

5420 Miller Street
Arvada, CO 80002-3069
303.914.6010



Red Rocks Community College
13300 West Sixth Avenue, Lakewood, CO 80228-1255

*Where Learning
Is For Life*