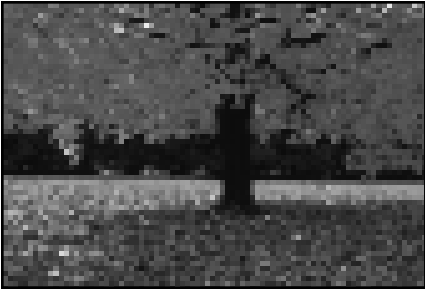


# Contents

***This catalog applies to students beginning their RRCC studies from fall semester 2007 through summer semester 2008.***

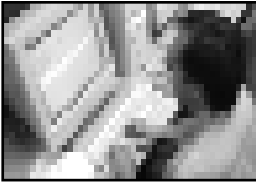
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# General Information

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# Welcome



Welcome to Red Rocks Community College (RRCC) and the book that could change your life.

Enclosed is an overview of RRCC - 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, RRCC 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 RRCC. 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 RRCC, 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  
President



# About RRCC

***RRCC 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, to 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 a student employment center.

## Arvada campus

The Arvada campus lies just northwest of the intersection of I-70 and Kipling. The campus is known for its beautiful building with expansive views to the west and the view of downtown Denver to the east.

The campus offers innovative scheduling options in a helpful and friendly atmosphere. Students can apply for admission, meet with an advisor, receive career counseling, register for classes, and receive financial aid information in one convenient location. Call **303-914-6010** for more information.

The LARC (Learning and Resource Center) is the center piece of the building housing the computer commons, assessment, online support, library services, tutorial services in math, free GED pre-testing, career resources, study areas and access to the internet. The Arvada Campus is also home to the Medical Imaging Program for students enrolled in radiology or ultrasound courses.

All classrooms are provided with multi-media capabilities. Courses offered range from accounting to speech, including guaranteed transfer general education courses and basic skills courses in English and math.

In addition to course offerings, the campus presents a series of free business seminars. For a complete listing, visit [www.rrcc.edu/arvada](http://www.rrcc.edu/arvada).

## Guiding Principles

**Vision:** To be the college of first choice.

**Mission:** 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

## RRCC 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. Talk with an advisor
4. Pick your classes

RRCC welcomes everyone who can benefit from our instructional programs and courses, including high school graduates, non-graduates, and students 16 years old or older who are currently enrolled in high school.

The Director of Enrollment Services reviews any questions regarding admission. Any admission that is based on false statements or documents may be reversed, and credits for classes 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 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 department. To enroll in any course, you must meet the course prerequisites. (Please see the Admissions Procedures below.)

## Admission Procedures

**First-time students:** Students entering degree programs within the Colorado state system of community colleges for the first time 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 must contact the International Education Office at 303.914.6416 to begin their admission process.

### In order to enroll, follow these steps:

1. Submit an Application for Admission, which is in the printed schedule and online at [www.rccc.edu](http://www.rccc.edu).
2. Meet with an academic advisor for information about appropriate class choices for your program and scheduling.
3. Complete the Accuplacer assessment which is necessary for most students enrolling in courses at RRCC. This is not an entrance exam. We need to determine your readiness for college-level reading, writing, and mathematics. It is required for first-time students who enroll in a degree program. It is also required for those students under 20 years of age who do not provide their year of high school graduation. If you have qualifying SAT/ACT scores or previous college coursework, you will be exempt from the assessment requirement.

4. We strongly recommend that students review the online study guides prior to taking the Accuplacer. The study guides can be found on our web site at [www.rccc.edu/assessment](http://www.rccc.edu/assessment). Assessment times are listed in the current schedule under "Assessment." No appointment is required, but students must show a picture ID. Students whose assessment scores are below college level are responsible for enrolling in basic-skills courses during their first 30 credit hours of attendance. Students enrolling in Fire Science or Emergency Services coursework should consult the Emergency Services Department for their assessment requirements. Information: 303.914.6720

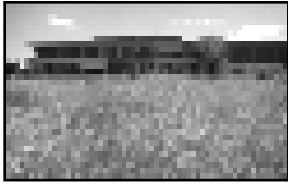
**Former Students:** If you are returning to RRCC after an absence of more than one year, you must re-apply for admission. If you have earned credit at another college and plan to use that credit to fulfill requirements for an RRCC degree or certificate, you must submit an official transcript to the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

**High School Students:** RRCC Community College welcomes high school students who are at least 16 years old and can benefit from our instructional programs. To enroll, follow these simple steps:

1. With approval from your high school 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. Complete paperwork available at your high school counseling office.
  - Complete an RRCC Community College Application for Admission.
  - Complete a Statewide Agreement form (for high school concurrent enrollment).
  - Depending on the program through which you enter RRCC, you might need additional forms.
3. Complete the Accuplacer assessment at RRCC or submit qualifying ACT/SAT scores to the Assessment Center. The Accuplacer measures your readiness for college-level course work. It is not a test of whether or not you can attend RRCC but a tool to help advisors place you in appropriate college courses.

Call **303.914.6720** or visit [www.rccc.edu/assessment/timecomp.html](http://www.rccc.edu/assessment/timecomp.html) for more information regarding where and when to take the Accuplacer assessment.

4. 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, explain specific programs and their requirements, prepare you 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**

## Military Science (U.S. Army)

The Military Science Program at RRCC is offered in conjunction with the University of Colorado at Boulder (CU) and Colorado School of Mines (CSM). The Department of Military Science offers programs leading to an officer's commission in the active Army, Army Reserve, or National Guard in conjunction with an undergraduate or graduate degree. Military science courses are designed to supplement a regular degree program by offering practical leadership and management experience. Students attend classes at either CU or CSM.

Students who wish to register for Army ROTC classes can sign up for them through the Student Records office, Room 1200 (**303.914.6353**).

## Assessment

The state of Colorado requires incoming students to complete the Accuplacer, an assessment test of basic skills to indicate appropriate course choices based on the test results. This test must be completed, or your exemption documents must be supplied (see below), before you can register for classes. Accuplacer assesses your skill levels in English, reading, and mathematics and is taken on a computer in the Assessment Center. Plan on 90 minutes for the test. There is no cost the first time you take the test. You may retest any or all of the

sections for \$5.00 per test. You will receive your scores as soon as you complete the test so that you can work with an academic advisor to make your course selections. The statewide test scores for placement are available on the RRCC Web site at <http://www.rrcc.edu/assessment/>.

You cannot "fail" the Accuplacer; your score is an indication of the level of course work you are ready to take. We strongly recommend that you look at the test preparation study guides available on the Web site listed above prior to taking the test.

### Exemptions to the Assessment Requirement

The state of Colorado requires all students under 20 years of age to take the Accuplacer or to supply exemption documents. Students who meet one of the following requirements do not have to take the Accuplacer test.

- If you have earned an associate of arts, associate of science, or higher degree from an accredited college or university, you must submit your transcript(s) to RRCC in order to receive the exemption.
- If you have completed college-level English composition or college algebra with a grade of C or better, or you have qualifying AP/IB test scores, you can submit your transcript(s) and/or score report to RRCC to be exempt from taking the corresponding section(s) of the Accuplacer. (Qualifying scores are listed on the RRCC Web site: <http://www.rrcc.edu/assessment/>.)
- If you have qualifying ACT scores (English, 18 or higher; Reading, 17 or higher; Mathematics, 19 or higher) or SAT scores (Verbal, 440 or above; Math, 460 or above) and submit the scores to the RRCC Admissions Office, you do not have to take the Accuplacer test.

You may take the Accuplacer at either the Lakewood or Arvada campus. Please refer to the Assessment Center Web site ([www.rrcc.edu/assessment](http://www.rrcc.edu/assessment)) for additional information about the Accuplacer and testing hours at both campuses.

## Career Resources

Red Rocks offers individual appointments for the Myers-Briggs and Strong Interest Inventory career assessments.

Assessments are \$20 each for students and alumni or \$30 each for community members.

Contact the Arvada Campus to make an appointment: **303.914.6016**.

For more information visit the Advising or Student Employment Web site:

[www.rrcc.edu/advising](http://www.rrcc.edu/advising) or [www.rrcc.edu/jobwatch](http://www.rrcc.edu/jobwatch)

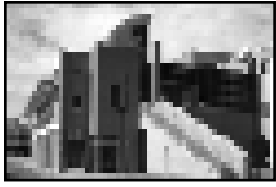
## Discover

ACT's Discover is an in-depth tool and resource providing information on occupations, college majors, colleges, financial aid, job search aides, and additional career and educational resources. To gain access to Discover, meet with an advisor or with a staff member in Student Employment to receive a token.

## Career Development Course

PSY 110 (Career Development) is offered each spring and fall semester and online in the summer semester. PSY 110 covers all areas of the career development process, including formal and informal career assessments (personality, interests, skills, values, and beliefs); personal career exploration; occupational, labor, and job market resources; the changing workplace; goal-setting and decision-making; networking; informational interviewing; resumé writing; and interviewing skills. Upon completion, students will be able to develop their own career action plans.

For more information, call **303.914.6016** or e-mail [dan.macy@rrcc.edu](mailto:dan.macy@rrcc.edu).



# Admissions

## ESL/Foreign Language Lab

The ESL/Foreign Language Lab offers tutoring in Spanish, French, German, and English as a Second Language (ESL). **Information: 303.914.6719 (Foreign Language) 303.914.6416 (ESL)**

## Transcripts

If you need your RRCC transcript forwarded to a third party, a Transcript Request form is available in Admissions or on the RRCC Web site with 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**

## Transfer of Credits

The Colorado Community College System (CCCS) launched a common course numbering system to simplify transfer to other state colleges and universities and to ensure curriculum quality across the system. Information is posted online at [www.cccs.edu](http://www.cccs.edu). Once you are on the site, click on CCCS Common Courses.

1. Initial transcript evaluation is completed 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 courses to determine if they are obsolete. If so, you may be required to take a similar course at RRCC.
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 the 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.

**Information: 303.914.6355**

## Transferring to Four-Year Colleges and Universities

RRCC 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 at Boulder  
 University of Colorado at Colorado Springs  
 University of Colorado at Denver 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 RRCC. 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 RRCC 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 RRCC. For more information, contact the RRCC-WT Liaison at **303.982.8603** or the RRCC Admissions Office at **303.914.6543**. Admissions and registration requirements can be obtained from either office. All students who apply to a WarrenTech 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  
 Cosmetology: Esthetics  
 Cosmetology: Hairstyling  
 Cosmetology: Nail Technology  
 Culinary Arts  
 Dental Assisting  
 Floral Design  
 Hotel and Travel  
 Landscape Operations  
 Precision Machining Technology  
 Welding





# Tuition

*If cost is a problem, we have many scholarships and other financial aid options that can 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, RRCC Foundation Scholarships
- Federal Pell Grants, Federal Academic Competitiveness Grants, Colorado Student Grants, Colorado Leveraging Educational Assistance Partnership Grants, Federal Supplemental Educational Opportunity Grants, Federal Stafford Student Loans, Federal Parent Loans (PLU.S.)
- Federal and Colorado Work Study Program

Once you have applied for financial aid, it can take eight to ten weeks to process your request. Although the application for financial aid can 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 (see below). For complete financial aid information, see the Financial Aid Handbook.

Information: **303.914.6256**  
[www.rrcc.edu/finaid](http://www.rrcc.edu/finaid)

## Priority Dates to Receive Financial Aid

<b>Fall:</b>	Previous April
<b>Spring:</b>	Previous September
<b>Summer:</b>	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.**

## Non-resident Students

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

To change from non-resident to resident status, obtain a petition form for in-state status from Admissions. A copy of the regulations governing residency classification is a part of the petition. Deadlines for submission of the petition are published each 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.

Information: **303.914.6255**

## College Opportunity Fund

The College Opportunity Fund (COF) is a state-funded program that provides a per-credit subsidy for residents attending state-supported and participating private colleges and universities. This money, referred to as the COF stipend, is applied to an in-state student's tuition providing the student applies for and authorizes its use. The college you are attending will receive the money, and it will appear as a tuition credit on your bill. Currently the COF stipend is \$86.00 per credit hour.

**You must enroll online; the link to the COF enrollment site is available on the RRCC home page: [www.rrcc.edu](http://www.rrcc.edu).**



Where Learning  
Is For Life

# Foundation

***The RRCC Foundation has provided more than \$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 RRCC 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 exists because of individuals who believe 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 board of directors, and the Foundation staff, all of whom 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 \$6 million, awarded more than \$1.5 million in scholarships to nearly 2,000 students, and provided over \$500,000 to the college for the Learning and Resource Centers at the Lakewood and Arvada campuses. In addition, the Foundation funds 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 \$300,000 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
- Kristen M. Anderson
- Robert E. Barber
- Kevin J. Bervik
- John G. Brant
- Tim Campbell
- Shelley Cook
- Michael Coughlin
- Kristen M. Anderson
- Jim Dascalos
- Jacquie Haughton
- Dan Leach
- Thomas W. Lemcke
- Al Meiklejohn
- Tom Menk
- Aldo G. Notarianni
- Skip Olson
- Cliff Richardson
- Carol Salzmann
- Bob Short
- Glenn Stroehler
- Dan Thoren
- Dr. John Trefny
- Shirleen Tucker
- Denise Waddell
- Jim Whitfield

Paulann Doane, executive director



# LARC

***The Learning and Resource Center (LARC) 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 you can study on your own or meet with a tutor, a study group, or an 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 for vocational students having difficulty with their classes and for transfer majors whose grades fall below average in selected content areas.

**Information: 303.914.6701**

## **GED Pre-test and Preparation**

A free practice test for the General Education Development (GED) 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 and Arvada campuses is open-entry; therefore, 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.

Examen de práctica y preparación para el GED se ofrece un examen de práctica y una clase de preparación en español en los dos cámpuses de Lakewood y Arvada. Por más información, llame a 303-914-6538.

## **Assessment**

### **Credit for Prior Learning (CPL)**

You may receive academic credit for education earned through earlier schooling, work, experiential learning, or other nontraditional means. It must be 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](http://www.rrcc.edu/assessment)**

Other tests available:

- Accuplacer Test (RRCC assessment test) times are listed in the current semester's schedule. No appointment is required. Sample tests are available online:  
**[www.rrcc.edu/assessment](http://www.rrcc.edu/assessment)**
- Special testing for outside organizations.
- Authorized PROMETRIC Testing Center which offers computerized certification and license testing for software publishers, state and federal governments, and educational entrance exams.

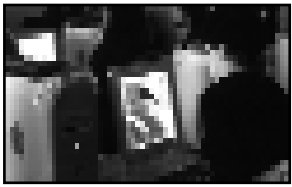
**Information: 303.914.6720**

## **College Success for All Students**

Do you want to be a better student but don't know how? Do you want to study smarter, not harder? Have you ever wondered about the skills and attitudes it takes to succeed in college? AAA 050 (Semester Survival) and/or Connect to Success can help answer these questions, and more.

- AAA 050 (Semester Survival) gives both first-time and returning students the opportunity to learn and adopt proven methods that lead to success in college. Students will be introduced to a variety of skills critical to success, such as short- and long-term educational goal-setting and career planning, effective communication and time management, critical and creative thinking, motivation, note taking, efficient text book reading, and other study techniques needed for academic success. AAA 050 is taught as a hybrid using both class time and Internet study.

**Information: 303.914.6701**



# LARC

- Connect to Success is a learning support service that assists students with study tips and success strategies, learning styles, goal-setting, and interest inventories while also providing information about college services and community resources. Students can stop by the office in room 1665, e-mail, or call for information. Walk-ins are welcome.

**Information: 303.914.6317 or**  
**dana.kobold@rrcc.edu**

## Library

The library offers extensive print, audiovisual, 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, but you must plan ahead since it can take several days for the materials to arrive at RRCC.

**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 employees regarding 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.

Any student requesting a math waiver or substitution must contact the Office of Special Services for the procedure and application. Requests must be made at the time a major is declared.

**Information: 303.914.6733 (V) or**  
**303.914.6737 (TTY)**

## Writing Center and Online Writing Center

The mission of the Writing Center is to help students become better writers. 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. In addition, the Online Writing Center (OWC) enables students to receive help with their writing at [www.rrcc.edu/writing](http://www.rrcc.edu/writing). The OWC provides links to information about writing, and students can submit papers and questions for feedback from tutors.

**Information: 303.914.6321**

## Internships

**(Also known as Cooperative Education)**

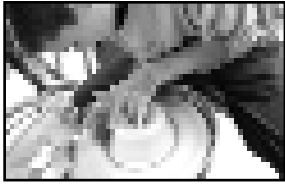
As an extension and application of classroom learning, internships provide valuable work experience under the supervision of professional business and industry personnel. A qualified faculty member oversees the internship, evaluates the student's progress, and issues a grade upon completion. The Student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

A "Training Agreement" signed by the student, the college, and the employer defines the responsibilities of all parties. In addition, students 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 the student's success during the internship – the employer (mentor), the student (intern), and an RRCC faculty/staff member (support).

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 that may apply toward a degree in a specific area is identified in the "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 upon approval of the receiving institutions. General education internship credit transfers 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 must begin their enrollment process in the Student Employment/Internship office.

**Information: 303.914.6258**



# Options

## 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 seven-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), and 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 can come to the Learning and Resource Center (LARC) on the RRCC Lakewood campus or to the Arvada campus to use computers.

**Information: 303.914.6444** or [www.rrcc.edu/online](http://www.rrcc.edu/online)

### CCOnline Courses

Colorado Community College Online provides a centralized Web site where you can take classes, earn a certificate, or even complete an associate's degree from the community college of your choice. Meet with an RRCC advisor for details.

All courses taken through CCOnline are transferable to the Colorado community college of your choice within the state system. Choose RRCC as your home college, and your transcript will show your CCOnline 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 education, emergency management, Microsoft certification, occupational safety, public administration, telecommunication, and travel agent. Please see the current semester's schedule for a list of available courses.

**Information: 800.801.5040** or [www.ccconline.org](http://www.ccconline.org)

## 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 can be taken an unlimited number of times, but no more than six credits will be applied to any associate degree program.

## Service Learning

Service Learning (SL) is a way for you to become involved in the community and to combine experiential learning with classroom learning. The Service Learning program at RRCC 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 learning can add a new dimension to classroom discussions. You have the opportunity to serve your community while applying knowledge gained in the classroom. Community organizations benefit from your involvement while you enhance your 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 transcripts. Students interested in pursuing Service Learning in any non-designated SL classes can ask their instructors for permission to pursue individual service projects. Transcript designation is available to these students as well.

## Weekend College

If you work, have a family, or want something interesting to do on Friday nights, Saturdays, and/or Sundays, Weekend College classes are for you. You can work on a college degree, take classes for fun, or brush up on skills you need for your job.

**Information: 303.914.6444**



# Options

## Hybrid/Flex

### Hybrid Courses

Hybrid courses are a combination of online and classroom instruction. They are designed for a curriculum that can be offered partially online but is difficult to learn completely online. In-class instruction is held at RRCC during the week or weekend. Consult the current semester's schedule.

### Flex Courses

Flex classes are designed for students to work independently, finding out solutions on their own with minimum assistance. These classes are not designed for online delivery or for communication via email. Regular attendance is not required, but students must meet with their instructors several times throughout the semester to receive and submit assignments, to ask questions, and to receive assistance. Students can enroll in flex classes at any time during the term, but all work must be submitted by the deadline indicated on the syllabus.

Students enrolled in flex classes will be contacted the first week of the term regarding orientation. If a student cannot attend orientation, he/she must arrange a time to meet with the instructor to receive initial instructions and material.

**Information:** [www.rrcc.edu/options](http://www.rrcc.edu/options)

## Self-Paced

Working with an instructor, students will design their own schedules. Self-paced courses provide flexibility and the opportunity to study when students have the most time.

Most instructors will meet with their students at the beginning of the semester, and then students will send assignments back and forth via traditional mail, drop-in, or email.

Students who are successful in self-paced courses:

- Are self-starters
- Work independently
- Regularly meet deadlines
- Have strong reading and writing skills
- Are not looking for a social learning setting
- Are highly motivated

**Information:** 303.914.6444

## Accelerated

An accelerated course takes the content from a traditional 15-week, 3-or 4-credit class and "compresses" it into a shorter time frame. The course may meet every day, all day for a week, or five Saturdays. Accelerated online classes take a 15-week online class and compress it into seven weeks.

As you plan your schedule, be advised that accelerated classes require more work in a shorter amount of time. Be prepared to schedule extra time for homework and studying.

Accelerated classes are designed to meet the needs of busy professionals and students with active lifestyles. Characteristics of successful students include:

- Excellent time management skills
- Self-motivation
- Ability to learn on their own
- Commitment to their education

## Telecourses

Telecourses are based on a series of professionally produced television programs. Videos are viewed via tape or DVD or checked out from the library at the Lakewood campus. Students work in a variety of online and text-based environments. Faculty members provide orientation, optional discussion sessions, and individual attention on the Lakewood campus or by phone. Exams can be taken at the Lakewood campus or at the Arvada campus. Students make arrangements with their instructors for exams at the Arvada campus.

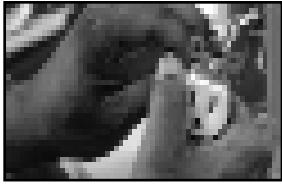
**Information:**

[www.rrcc.edu/options/telecourses](http://www.rrcc.edu/options/telecourses)

## Learning Communities

Enrolling in a learning community at RRCC means that students can enroll in two classes that are linked. Faculty who teach these classes combine the content so that learning becomes more relevant. For example, students can be part of a learning community that combines English and history or technical math and fire science hydraulics. Equally important, by becoming part of a learning community, students will have a support network provided by their teachers and classmates. Each semester, the Learning Community Program includes linked or paired courses, providing students with a friendly and innovative way to take courses that increase their fundamental skills and add to completion of their general education or degree requirements.

**Information:** 303.914.6444



# International Students

## 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. RRCC "International Student Admissions Application," available in the English Language/Intercultural Services Office, or the application may be downloaded from our Web site, [www.rrcc.edu/international](http://www.rrcc.edu/international). International students must not use the electronic application on the college main Web page.
2. A statement of financial resources sufficient for tuition and living expenses while in the U.S. (currently \$20,300/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 English Language/Intercultural Services 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 for new international students only. Transfer students already in the U.S. generally have one additional month to prepare their documents.

**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 Accuplacer basic-skills assessment and follow its placement requirements. The Accuplacer takes at least 90 minutes and is available on a walk-in basis. Test times are listed in the current schedule and on our Web site. Initial tests are free; retesting is available for a fee of \$5.00 per test section. You will be placed in English as a Second Language or college level classes as appropriate.

### Guaranteed Transfer to Universities

Many RRCC courses will transfer. Please consult with an RRCC 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 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 degree in only another 60 hours.

\*See a 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 finish your 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.

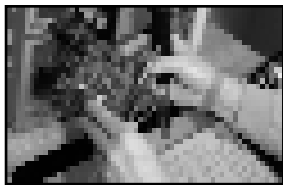
### Intensive English Program

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 the beginning, intermediate, and advanced skill levels.

### Non-Intensive English Program

If you have tested beyond the Intensive English Program, you are eligible to enroll in non-intensive English classes. The program offers four semester-length classes designed to boost your English skills for the reading, writing, and communication demands of college classes. Classes include advanced reading, composition, pronunciation, and iBT TOEFL preparation.

**Information: 303.914.6416, 303.914.6536, or 303.914.6538**  
[international@rrcc.edu](mailto:international@rrcc.edu), [www.rrcc.edu/international](http://www.rrcc.edu/international)



# Student Services

## Bookstore

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

**Information: 303.914.6232**

<http://rrcc.bkstore.com>

## Cafeteria

The RRCC Café on the Lakewood campus serves hot and cold food selections.

**Information: 303.914.6374**

## Child Care

The Children's Center at RRCC 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 students, staff, faculty, and the community. Some subsidies are available for low-income families. 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, you will 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 Student Employment Office. While RRCC cannot guarantee employment, we make every effort to maintain contact with business and industry to generate employment opportunities. In addition, on-campus recruiting visits from business and industry are coordinated; job announcements and outlook surveys maintained; and resumé 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 help students apply what they learn in the classroom. Through RRCC internship programs, students can learn and earn college credit while they are working for some of the area's 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
- Sports tickets and movie tickets
- Study groups
- 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 pinball, gaming computers, 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.

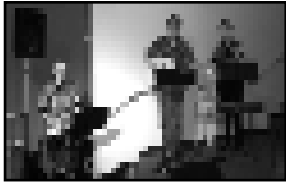
**Information: 303.914.6370 or 303.914.6900**

## The Student Voice

The Student Voice represents the interests of the student body with the college's administration to set policy and plan 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 an RRCC student, you have specific rights that ensure you are treated equitably and that your privacy is protected.*

## **Affirmative Action/Equal Opportunity**

RRCC 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 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 Personnel Office). The college has designated the executive director of Personnel as its affirmative action officer.

For information contact:

Personnel Office  
RRCC  
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**

RRCC 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.

Any student requesting a math waiver or substitution must contact the Office of Special Services for the procedure and application. Requests must be made at the time a major is declared.

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

## **Drug and Alcohol Abuse Prevention Program**

### **The Law**

RRCC 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 Personnel Office.

### **Standard of Conduct**

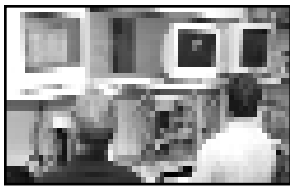
Students and employees shall not engage in the unauthorized or unlawful manufacture, distribution, dispensation, possession, use, or abuse of alcohol or illicit drugs on college property or as a part of any college activity.

### **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.



# Student rights

## Health Risks

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

## Illegal Substances

A listing of controlled substances is on file in the Office of Student Life and Personnel Office.

## Referral Sources

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

### The College:

Advising **303.914.6255**  
 Personnel Office **303.914.6570**  
 Student Center **303.914.6372**

### The Community:

AI-Anon –AI-ATeen **303.321.8788**  
 Alcoholics Anonymous **303.322.4440**  
 Cenikor Prevention 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 RRCC to release "directory information" about you to interested parties. This does not include grades but does include:

- student's name
- date of birth

- major field of study
- participation in officially recognized activities and sports
- dates of attendance
- degrees and awards received
- most recent educational institution attended
- enrollment status

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.

**Information: Contact the College Registrar at 303.914.6350**

Your rights include:

1. The right to inspect and review your education records within 45 days of the day RRCC receives a request for access. Submit written requests that identify the record(s) you wish to inspect to the Registrar or Coordinator of Student Records. 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 to the above RRCC official responsible for the record, and clearly

identify the part of the record you want changed, specifying 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 an employee of the college in an administrative, supervisory, academic, 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 member of the State Board for Community Colleges and Occupational Education; an individual 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, RRCC takes your education seriously. It's our great pleasure to recognize the successes of RRCC 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 principles associated with academic integrity we expect you to follow:

- Assume responsibility and take credit only for the words and/or ideas in an academic exercise that are expressly your own.
- Use information and 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, and/or failing the assignment or course, and/or expulsion from the course or college.

## Attendance

To benefit most 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, 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. If you register for fewer than 12 credits, you are classified as part-time. You need written permission from your advisor or the registrar to enroll for more than 18 credits during any semester.

## Grades

Final course grades are assigned at the end of each semester for classes taken during that semester. If you need an earlier grade report, contact the instructor.

## Grading Symbols

**A** Distinguished achievement for superior work

**B** Better than acceptable achievement

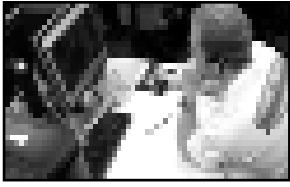
**C** Acceptable achievement for advancement in the same or related studies

**D** Less than acceptable achievement for advancement in the same or related studies (credit may not transfer or count toward some degrees or certificates)

**F** Failure to achieve or master the learning objectives of the course. A grade of **F** does not apply toward certificates or degrees.

**AU** Audit. If you want to take a course without earning credit, you can register to audit that course. You must pay full tuition and fees, and you will not receive the COF stipend for the course. You must 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.



# Academics

**W** Withdrawal. Through Admissions, you have officially withdrawn from the course or the college by the approved date and time listed in the current semester's schedule.

**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 75% 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 available only for certain predesignated courses.

**U** Unsatisfactory. Equivalent to a grade of D or F and is available only for certain predesignated courses.

**S/A, S/B, S/C** These are satisfactory grades awarded only for developmental courses. The A, B, and C indicate the level of satisfactory performance. These grades are not included in the GPA calculation. The course will count for attempted and earned credits.

**U/D, U/F** These are unsatisfactory grades awarded only for developmental courses. The D and F indicate the level of unsatisfactory performance. These grades are not included in the GPA calculation. The course will count in attempted credits but will not carry earned credits.

**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.

## Academic Probation

If you have completed thirteen or more credits with a GPA of less than 2.00, you will be placed on academic probation. Meet with an advisor at this point. Continued GPA of less than 2.00 after being placed on probation may lead to suspension from enrollment at Red Rocks Community College. You have the right to appeal if there are extenuating circumstances.

## Academic Second Chance

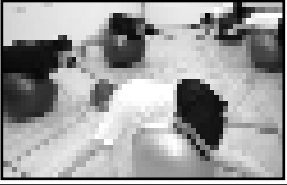
All course work taken at RRCC is reflected on your permanent transcript; however, you can petition to remove up to 30 credit hours of substandard grades earned from your cumulative grade point average (GPA). Before submitting the required written request, you must have been out of school for two years after the substandard course work was completed. Also you must have completed a minimum of six credit hours of new course work at RRCC with a cumulative GPA of 2.0 or higher. You may petition only once to remove grades and credits from your cumulative GPA. Once Student Records has removed these grades and credits from your cumulative GPA, they cannot be reinstated nor used for any degree or certificate. The grades and credits will still appear on your permanent academic transcript.

**Information: 303.914.6352.**

### Calculating your GPA

Prefix	Grade	AHRS	EHRS	QHRS	QPTS
ART 131	<u>B</u>	3	3	3	3X3 = 9
BIO 227	<u>W</u>	3	0	0	0X0 = 0
MAT 201	<u>A</u>	5	5	5	4X5 = 20
PHI 111	<u>C</u>	3	3	3	2X3 = 6
PSY 116	<u>F</u>	<u>1</u>	<u>0</u>	<u>1</u>	<u>0X1 = 0</u>
Totals		15	11	12	35

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



# Academics

## 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.

(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 E, you will receive quality credit hours for that course. Quality hours are used to calculate your GPA.

(QPTS) Quality Points. The main grading symbols are given points: A=4, B=3, C=2, D=1 and E=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.

(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 retake any course taken at RRCC. After completing the course at RRCC, you must fill out a "Petition for Repeated Course" form to have only the highest grade used in calculating your GPA. The previous course credits and grades will still appear on your transcript, but they will not be used to calculate either your GPA or total credit hours toward a degree or certificate. You may obtain the form in Student Records.

**Information: 303.914.6352**

## Recognition of Achievement

### Honors Program

Students and faculty participate in a community of learners that 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, and educational partnerships. Scholarships are available to two students from each high school served by RRCC each year. The scholarship awards cover tuition and books for four semesters to a maximum of 60 credits.

**Information: 303.914.6226**

### Phi Theta Kappa

RRCC sponsors a chapter of Phi Theta Kappa, the national student honors organization for two-year colleges. Members offer tutoring programs, 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 obtain a faculty letter of recommendation. Membership opportunities occur twice a year, once in the fall and once in the spring semesters.

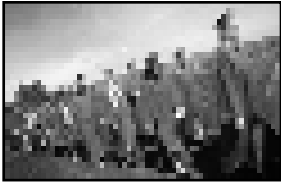
**Information: 303.914.6372**

## 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 2.000 during the probationary term, certification to the Veterans Administration will be suspended for one academic term. You may be reinstated after you have received approved counseling.

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. These actions can result in you owing the federal government money. 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  
RRCC.***

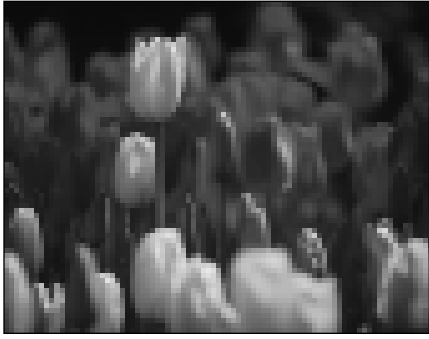
## **Catalog Graduation Requirements**

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 also can choose to use the catalog that is in effect the semester you graduate. Be sure to keep a copy of your catalog.

You will not receive a diploma until you have met all financial obligations to the college, including payment of tuition, fees, police tickets, and library fines.

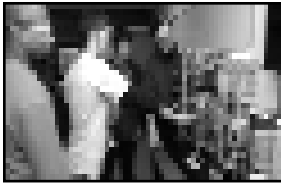
## **Graduation Requirements**

1. You must earn a cumulative grade point average of 2.0 (C average). Some programs will 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 semester.



# Degrees

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



# Associate degrees

degrees

## Associate of Arts

### Transfer

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 38-42 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
  - Spanish
- History
- International Studies
- Musical Theatre
- Philosophy
- Physical/Outdoor Education
- Political Science
- Psychology
- Sociology
- Speech Communication
- Theatre Arts

## Associate of Science

### Transfer

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 38-42 credits. Emphases are available in the following areas:

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

## Associate of General Studies – Specialist

### Articulated Transfer

The Associate of General Studies–Specialist degree (60 to 68 credits) is for the student who wants to complete a pre-professional transfer degree in one of the fields specified below. Agreements exist between RRCC and certain four-year colleges for the following career areas:

- Criminal Justice
- Graphics and Animation Technology
- Motion Graphics Animation
- Production and Design Technology

(Certificates are also available for each area.)

## Associate of General Studies – Generalist

### Career-Oriented

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

### Career-Oriented

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 (38-42 credits)

**Communication: 3 courses****(9 credits)**

ENG	121	English Composition I	3
ENG	122	English Composition II and either	3
SPE	115	Public Speaking or	
SPE	125	Interpersonal Communication	3

**Mathematics: 1 course****(3-5 credits)**

MAT	120	Mathematics for the Liberal Arts	4
MAT	121	College Algebra	4
MAT	122	College Trigonometry	3
MAT	123	Finite Math	4
MAT	125	Survey of Calculus	4
MAT	135	Introduction to Statistics	3
MAT	155	Integrated Math I and	
MAT	156	Integrated Math II	6
MAT	166	Pre-Calculus	4
MAT	201	Calculus I	5
MAT	202	Calculus II	5
MAT	204	Calculus III with Engineering Applications	5
MAT	261	Differential Equations with Engineering Applications	4

**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 Ancient to Medieval	3
ART	112	Art History Renaissance to Modern	3
ART	207	Art History 1900 - Present	3
FL	211	Second Year Foreign Language FRE, GER, SPA	3
FL	212	Second Year Foreign Language FRE, GER, SPA	3
HUM	121	Humanities: Early Civilization	3
HUM	122	Humanities: Medieval to Modern	3
HUM	123	Humanities: The Modern World	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
LIT	205	Ethnic Literature	3
LIT	211	Survey of American Literature I	3
LIT	212	Survey of American Literature II	3
LIT	221	British Literature I	3
LIT	222	British Literature II	3

**Ways of Thinking**

PHI	111	Introduction to Philosophy	3
PHI	112	Ethics	3
PHI	113	Logic	3
PHI	114	Comparative Religions	3
PHI	214	Philosophy of Religion	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	111	World Civilization I	3
HIS	112	World Civilization II	3
HIS	201	U.S. History I	3
HIS	202	U.S. History II	3
HIS	247	Contemporary World History	3

**Economic & Political Systems**

ECO	201	Macro Economics	3
ECO	202	Micro Economics	3
ECO	245	Environmental Economics	3
POS	105	Introduction to Political Science	3
POS	111	American Government	3
POS	205	International Relations	3
POS	225	Comparative Government	3

**Geography**

GEO	105	World Regional Geography	3
GEO	106	Human Geography	3

**Human Behavior & Social Systems**

ANT	101	Cultural Anthropology	3
ANT	107	Introduction to Archaeology	3
ANT	111	Physical Anthropology	3
PSY	101	General Psychology I	3
PSY	102	General Psychology II	3
PSY	205	Psychology of Gender	3
PSY	226	Social Psychology	3
PSY	227	Psychology of Death and Dying	3
PSY	235	Human Growth & Development	3
PSY	238	Child Development	3
PSY	249	Abnormal Psychology	3
SOC	101	Introduction to Sociology I	3
SOC	102	Introduction to Sociology II	3
SOC	215	Contemporary Problems	3
SOC	216	Sociology of Gender	3
SOC	231	Sociology of Deviant Behavior	3

**Physical and Life Sciences:****2 courses****(8-10 credits)**

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
BIO	201	Anatomy & Physiology I	4
BIO	202	Anatomy & Physiology II	4
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
MET	150	General Meteorology	4
PHY	105	Conceptual Physics	4
PHY	111	Physics: Algebra Based I	5
PHY	112	Physics: Algebra Based II	5
PHY	211	Physics: Calculus Based I	5
PHY	212	Physics: Calculus Based II	5
SCI	155	Integrated Science I	4
SCI	156	Integrated Science II	4

**Approved electives (18-22 credits) • Total Credits (60 required)**

\* Note: This guarantee excludes majors in education, business, and engineering which have special articulation agreements with public four-year colleges and universities. Your advisor can assist you in choosing specific courses toward your major and transferring college. Check with your advisor periodically as updates and changes can occur.

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) and then return, you must meet the requirements of the catalog in effect at the time you re-enroll. You also may choose to use the catalog that is in effect the semester you graduate. Be sure to keep a copy of your catalog.

## Approved elective credit courses 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	Management	MAN	226
Anthropology	ANT	All courses	Marketing	MAR	216
Art	ART	All courses	Mathematics	MAT	All courses 120 and above
Astronomy	AST	All courses	Music	MUS	All courses
Biology	BIO	All courses	Philosophy	PHI	All courses
Business	BUS	115, 216, 217 and 226	Physical Education	PED	All courses
Chemistry	CHE	All courses	(Maximum 3 credits apply toward degree)		
Communication	COM	All courses	Physics	PHY	All courses except 105
Computer Info. Systems	CIS	118, 240, 251, 268	Political Science	POS	All courses
Computer Science	CSC	119, 160, 161, 165, 240, 261	Psychology	PSY	101, 102, 110, 215, 226 227, 235, 238 and 249
Dance	DAN	All courses	Sociology	SOC	All courses
(Some may transfer as physical education courses.)			Speech	SPE	All courses
Early Childhood Education	ECE	101, 111, 241 and 260	Theatre	THE	All courses
Economics	ECO	All courses			
Education	EDU	All courses above 200			
English	ENG	All courses above 122			
Environmental Science	ENV	101			
Foreign Language	FRE, GER, SPA	All courses except 101 and 102			
Geography	GEO	All courses			
Geology	GEY	All courses			
Health and Wellness	HWE	100			
History	HIS	All courses			
Humanities	HUM	All courses			
Literature	LIT	All courses			

Many four-year college transfer guides are available via CCHE Web site at:

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

## Other degree requirements

1. A minimum of 60 credits is required for the Associate of Arts degree.
2. You must complete 18-22 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 meet with 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.
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, meet with an appropriate faculty advisor.
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 semester. 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, 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 (38–42 credits)

**Communication: 3 courses (9 credits)**

ENG 121	English Composition I	3
ENG 122	English Composition II and either	3
SPE 115	Public Speaking or	
SPE 125	Interpersonal Communication	3

**Mathematics: 1 course (3-5 credits)**

MAT 121	College Algebra	4
MAT 122	College Trigonometry	3
MAT 166	Pre-Calculus	4
MAT 201	Calculus I	5
MAT 202	Calculus II	5
MAT 204	Calculus III with Engineering Applications	5
MAT 261	Differential Equations with Engineering Applications	4

**Arts and Humanities: 3 courses (9 credits)**

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

<b>Arts</b>		
ART 110	Art Appreciation	3
ART 111	Art History Ancient to Medieval	3
ART 112	Art History Renaissance to Modern	3
ART 207	Art History 1900 – Present	3
FL 211	Second Year Foreign Language FRE, GER, SPA	3
FL 212	Second Year Foreign Language FRE, GER, SPA	3
HUM 121	Humanities: Early Civilization	3
HUM 122	Humanities: Medieval to Modern	3
HUM 123	Humanities: The Modern World	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
LIT 205	Ethnic Literature	3
LIT 211	Survey of American Literature I	3
LIT 212	Survey of American Literature II	3
LIT 221	British Literature I	3
LIT 222	British Literature II	3

**Ways of Thinking**

PHI 111	Introduction to Philosophy	3
PHI 112	Ethics	3
PHI 113	Logic	3
PHI 114	Comparative Religions	3
PHI 214	Philosophy of Religion	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 111	World Civilization I	3
HIS 112	World Civilization II	3
HIS 201	U.S. History I	3
HIS 202	U.S. History II	3
HIS 247	Contemporary World History	3

**Economic & Political Systems**

ECO 201	Macro Economics	3
ECO 202	Micro Economics	3
ECO 245	Environmental Economics	3
POS 105	Introduction to Political Science	3
POS 111	American Government	3
POS 205	International Relations	3
POS 225	Comparative Government	3

**Geography**

GEO 105	World Regional Geography	3
GEO 106	Human Geography	3

**Human Behavior & Social Systems**

ANT 101	Cultural Anthropology	3
ANT 107	Introduction to Archaeology	3
ANT 111	Physical Anthropology	3
PSY 101	General Psychology I	3
PSY 102	General Psychology II	3
PSY 205	Psychology of Gender	3
PSY 226	Social Psychology	3
PSY 227	Psychology of Death and Dying	3
PSY 235	Human Growth & Development	3
PSY 238	Child Development	3
PSY 249	Abnormal Psychology	3
SOC 101	Introduction to Sociology I	3
SOC 102	Introduction to Sociology II	3
SOC 215	Contemporary Problems	3
SOC 216	Sociology of Gender	3
SOC 231	Sociology of Deviant Behavior	3

**Physical and Life Sciences:****2 courses (8-10 credits)**

Additional credits beyond 8 apply as electives toward AA 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
BIO 201	Anatomy & Physiology I	4
BIO 202	Anatomy & Physiology II	4
CHE 111	General College Chemistry I	5
CHE 112	General College Chemistry II	5
GEY 111	Physical Geology	4
GEY 121	Historical Geology	4
MET 150	General Meteorology	4
PHY 111	Physics: Algebra Based I	5
PHY 112	Physics: Algebra Based II	5
PHY 211	Physics: Calculus Based I	5
PHY 212	Physics: Calculus Based II	5

**Approved Electives (18-22 credits) \_\_\_\_\_ • Total Credits (60 required) \_\_\_\_\_**

\* Note: This guarantee excludes majors in education, business, and engineering which have special articulation agreements with public four-year colleges and universities. Your advisor can assist you in choosing specific courses toward your major and transferring college. Check with your advisor periodically as updates and changes can occur.

You will graduate under the catalog requirements listed for the semester that you first enrolled. If you interrupt attendance for two consecutive semesters (excluding summer term) and then return, you must meet the requirements of the catalog in effect at the time you re-enroll. You also 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 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 from your elective choices, examine your program of study in the [RRCC Catalog](#) or speak with an academic advisor.

Anthropology	ANT	All courses	* Please see an advisor for details.
Astronomy	AST	All courses	
Biology	BIO	All courses except 105	Many four-year college transfer guides are available via CCHE Web site at:
Chemistry	CHE	All courses	
Computer Info. Systems	CIS	118, 240, 251, 268	
Communication	COM	All courses	<a href="http://www.state.co.us/cche/academic/transfer/guides.html">http://www.state.co.us/cche/academic/transfer/guides.html</a>
Computer Science	CSC	119, 160, 161, 165, 240, 261	
Economics	ECO	All courses	
English	ENG	All courses above ENG 122	
Environmental Science	ENV	101	
Foreign Language*	FRE, GER, SPA	Except 101, 102	
Geography	GEO	All courses	
Geology	GEY	All courses	
Health and Wellness	HWE	100	
Mathematics	MAT	All course above 121 except 123, 125, 135, 155, and 156	
Psychology	PSY	235	
Physics	PHY	All courses except 105	
Speech	SPE	All courses	

## Other 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, meet with an appropriate faculty advisor.
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 semester. 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, 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.

# AGS | Associate of General Studies – Specialist Degree

This degree is a pre-professional degree intended to transfer to specific four-year colleges or universities in Colorado with whom RRCC has signed an articulation agreement. Some courses may be considered for transfer to other colleges and universities on an individual basis.

1. A minimum of 60 credits is required for the AGS -- Specialist Degree.
2. General education requirements depend upon the transfer agreement in place of the specific degree.
3. Program specific requirements depend upon the transfer agreement in place of the specific degree.
4. You must complete a minimum of 15 credits in your program of study at RRCC.
5. You must complete the degree requirements as listed for the specific AGS you are earning. Consult a faculty advisor for course information.

## AGS -- Specialist Programs

The following four programs have a transfer agreement with Metropolitan State College of Denver:

- Criminal Justice
- Graphics and Animation Technology
- Motion Graphics Animation
- Production and Design Technology

### Degree Requirements

(See faculty advisor for degree worksheet.)

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) and then return, you must meet the requirements of the catalog in effect at the time you re-enroll. You also 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. Please see your faculty advisor.
2. You must earn a cumulative grade point average of 2.0 (C average) in order to graduate. The grade in all transfer courses must be a C or better.
3. You must complete a minimum of 15 credits in your program area at RRCC.
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 semester. 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, 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 RRCC, you must complete an additional 15 credits at RRCC 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.

# AGS Associate of General Studies – Generalist 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)

ENG 121 English Composition I

#### Mathematics: (3 credits minimum)

Select one course from the following list.

MAT 120	Mathematics for the Liberal Arts	4
MAT 121	College Algebra	4
MAT 122	College Trigonometry	3
MAT 123	Finite Math	4
MAT 125	Survey of Calculus	4
MAT 135	Introduction to Statistics	3
MAT 155	Integrated Math I and	
MAT 156	Integrated Math II	6
MAT 201	Calculus I	5
MAT 202	Calculus II	5
MAT 204	Calculus III with Engineering Applications	5
MAT 261	Differential Equations with Engineering Applications	4

#### Arts and Humanities: (3 credits)

Select one course from the following list.

ART 110	Art Appreciation	3
ART 111	Art History Ancient to Medieval	3
ART 112	Art History Renaissance to Modern	3
ART 207	Art History 1900 – Present	3
FL 211	Second Year Foreign Language FRE, GER, SPA	3
FL 212	Second Year Foreign Language FRE, GER, SPA	3
HUM 121	Humanities: Early Civilization	3
HUM 122	Humanities: Medieval to Modern	3
HUM 123	Humanities: The Modern World	3
LIT 115	Introduction to Literature	3
LIT 201	Masterpieces of Literature I	3
LIT 202	Masterpieces of Literature II	3
LIT 205	Ethnic Literature	3
LIT 211	Survey of American Literature I	3
LIT 212	Survey of American Literature II	3
LIT 221	British Literature I	3
LIT 222	British Literature II	3
MUS 120	Music Appreciation	3
MUS 121	Music History I	3
MUS 122	Music History II	3
PHI 111	Introduction to Philosophy	3
PHI 112	Ethics	3
PHI 113	Logic	3
PHI 114	Comparative Religions	3
PHI 214	Philosophy of Religion	3
THE 105	Introduction to Theatre Arts	3
THE 211	Development of Theatre I	3
THE 212	Development of Theatre II	3

#### Social and Behavioral Science: (3 credits)

Select one course from the following list.

ANT 101	Cultural Anthropology	3
ANT 107	Introduction to Archaeology	3
ANT 111	Physical Anthropology	3
ECO 201	Macro Economics	3
ECO 202	Micro Economics	3
ECO 245	Environmental Economics	3
GEO 105	World Regional Geography	3
GEO 106	Human Geography	3
HIS 101	History of Western Civilization I	3
HIS 102	History of Western Civilization II	3
HIS 111	World Civilization I	3
HIS 112	World Civilization II	3
HIS 201	U.S. History I	3
HIS 202	U.S. History II	3
HIS 247	Contemporary World History	3
POS 105	Introduction to Political Science	3
POS 111	American Government	3
PSY 101	General Psychology I	3
PSY 102	General Psychology II	3
POS 205	International Relations	3
POS 225	Comparative Government	3
PSY 205	Psychology of Gender	3
PSY 226	Social Psychology	3
PSY 227	Psychology of Death and Dying	3
PSY 235	Human Growth & Development	3
PSY 238	Child Development	3
PSY 249	Abnormal Psychology	3
SOC 101	Introduction to Sociology I	3
SOC 102	Introduction to Sociology II	3
SOC 215	Contemporary Problems	3
SOC 216	Sociology of Gender	3
SOC 231	Sociology of Deviant Behavior	3

#### Science: (4 credits minimum)

Select one course from the following list.

AST 101	Astronomy I	4
AST 102	Astronomy II	4
BIO 105	Science of Biology	
BIO 111	General College Biology I	5
BIO 112	General College Biology II	5
BIO 201	Anatomy & Physiology I	4
BIO 202	Anatomy & Physiology II	4
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
MET 150	General Meteorology	4
PHY 105	Conceptual Physics	4
PHY 111	Physics: Algebra Based I	5
PHY 112	Physics: Algebra Based II	5
PHY 211	Physics: Calculus Based I	5
PHY 212	Physics: Calculus Based II	5

### College level electives—(16 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 semester) or more and then return, you must meet the requirements of the catalog in effect at the time you re-enroll. You also 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 apply to any degree.

## Approved college-level 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	Humanities	HUM	All courses
Anthropology	ANT	All courses	Literature	LIT	All courses
Art	ART	All courses	Management	MAN	226
Astronomy	AST	All courses	Marketing	MAR	216
Biology	BIO	All courses	Mathematics	MAT	All courses 120 and above
Business	BUS	115, 216, 217 and 226	Music	MUS	All courses
Chemistry	CHE	All courses	Philosophy	PHI	All courses
Communication	COM	All courses	Physical Education	PED	All courses
Computer Info. Systems	CIS	118, 240, 251, 268	(Maximum 3 credits apply toward degree)		
Computer Science	CSC	119, 160, 161, 165, 240, 261	Physics	PHY	All courses
Dance	DAN	All courses	Political Science	POS	All courses
(Some may transfer as Physical Education courses)			Psychology	PSY	101, 102, 110, 215, 226 227, 235, 238 and 249
Early Childhood Education	ECE	101, 111, 205 and 214	Sociology	SOC	All courses
Economics	ECO	All courses	Speech	SPE	All courses
Education	EDU	All courses above 200	Theatre	THE	All courses
English	ENG	All courses above 122			
Environmental Science	ENV	101			
Foreign Language	FRE, GER, SPA, FOL	All courses except 101, 102			
Geography	GEO	All courses			
Geology	GEY	All courses			
Health and Wellness	HWE	100			
History	HIS	All courses			

Many four-year college transfer guides are available via CCHE Web site at:

<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.
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, meet with an appropriate faculty advisor and consult the Transfer Guide.
4. You must complete a minimum of 15 credits at RRCC.
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 semester. 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, consult with your advisor regarding how these credits will apply toward a degree.
8. 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.
9. With the approval of a faculty advisor and an instructional vice president, 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 who is 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, 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 RRCC.
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, consult with a 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 RRCC, you must complete an additional 15 credits at RRCC and the requirements for the degree.
8. With the approval of a faculty advisor, an internship may count toward a degree. Some AAS degrees will require internship credits.

### Associate of Applied Science Programs

Emphases are available in the following career areas:

#### Accounting

Accounting Paraprofessional  
Accounting Technician

#### Auto Collision Technology\*

(In cooperation with and taught at Warren Tech)

#### Automotive Technology\*

(In cooperation with and taught at Warren Tech)

#### 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\*  
Game Arts and Development\*  
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  
Building Automation  
Hydronic Heating  
Heating  
Carpentry  
Construction Electrician  
Construction Technology with an Emphasis in IBEW/NECA (Construction Electrician)  
Emphasis in Power Technology  
Fire Protection Technology  
Maintenance Electrician  
Plumbing  
Plumber/Pipe fitter  
Construction Management  
Construction Technology Technician  
Building Maintenance Technician  
Trades Degree

*Continued on next page*

**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 who is upgrading skills in a specific occupation.**

*Continued from previous page*

**Criminal Justice\* with emphases in:**

- Corrections
- Law Enforcement
- Victim Assistance Direct Service\*

**Diagnostic Medical Sonography**

**Early Childhood Education**

**Education -- Paraeducator**

**Emergency Management and Planning\*(CCCOnline)**

**Engineering Graphics Technology with emphases in:**

- Architecture\*
- Civil\*
- Interior Design\*
- Mechanical\*

**Fine Woodworking**

**Fire Science Technology**

- New students

**Fire Service Management**

- Track Two: Career advancement

**Industrial Maintenance -- Mechanical**

**Industrial Maintenance -- Electrical**

**Medical Office Technology**

- Medical Assisting\*
- Medical Office\*

**Multimedia Technology with emphases in:**

- Game Design/Development
- Graphics/Animation Technology\*
- Motion Graphics Animation\*
- Production and Design Technology\*

**Occupational Safety Technology\***

(In cooperation with Trinidad State Junior College)

**Paramedicine**

**Precision Machining**

(In cooperation with and taught at Warren Tech)

**Process Technology**

**Public Administration (CCCOnline)**

**Radiologic Technology**

**Theatre Technology\***

**Vascular Technology**

**Water Quality Management Technology\***

**Welding** (In cooperation with and taught at Warren Tech)

\* Certificate is also available.

## Associate of Applied Science Degree Requirements

(See faculty advisor for degree worksheet.)

**Specific program requirements (45-60 credits)**

**General education requirements (15 credits)**

**Communications** 3  
(ENG, COM, or SPE)

**Mathematics** 3  
(MAT 106 and above)

**Credit from any two of the following three areas:** 6

**Arts and Humanities** (ART, FRE, GER, HUM, ITA, JPN, LIT, MUS, PHI, SPA, THE)

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

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

**Electives from any of the above subjects:** 3

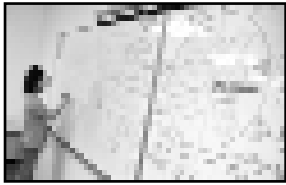
Note: Individual departments may specify particular courses for general education.

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 semester) or more and then return, you must meet the requirements of the catalog in effect at the time you re-enroll. You also 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 apply to 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, 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 RRCC.
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 semester. 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, 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 RRCC, you must complete an additional 15 credits at RRCC 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, RRCC students can earn certificates in a variety of specialties.**

**A certificate can require as few as five credits and also 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 RRCC to receive a certificate.
3. The college reserves the right to substitute or delete courses in a degree or certificate program.

### Accounting

- Accounting Clerk
- Bookkeeping Clerk

### Auto Collision Technology (In cooperation with and taught at Warren Tech)

- Mechanical and Electrical Components Management
- Non-Structural Analysis and Damage Repair
- Painting and Refinishing
- Structural Analysis and Damage Repair

### Automotive Service Technology (In cooperation with and taught at Warren Tech)

- Auto Parts Specialist
- Automatic Transmission
- Brake Specialist
- Electrical/Electronics
- Engine Performance
- Engine Repair
- Heating and Air Conditioning
- Lubrication and Tire Service
- Manual Drive Train
- Suspension and Steering

### Basic Law Enforcement Training Academy

#### Business

- Management and Supervision
- Real Estate
- Small Business Start Up

#### Business Technology

- Clerical Assistant
- Office Professional

#### Computer Information Systems

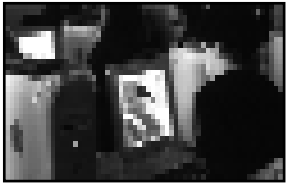
- Cisco Network Associate
- Computer Support Technician
- Game Development
- Microsoft Application Developer MCAD
- Microsoft Database Administrator MCDBA
- Microsoft Network System Administrator MCSA

- Microsoft Network System Engineer MCSE
- PC Application Specialist
- Programming Specialist
- Web Design
- Web Development\*

#### Construction Technology

- Advanced Construction Electrician
- Advanced Maintenance Electrician
- Air Conditioning
- Air Conditioning, Heating/Refrigeration Apprenticeship program
- Basic Plumbing/Heating Maintenance
- Basic Plumbing/Heating Maintenance
- Basic Plumbing/Heating Maintenance (see Construction Technology)
- Basic Plumbing Skills
- Building Automation
- Building Codes Level I Refrigeration
- Building Maintenance Technician
- Carpentry
- Colorado Plumbing Code Test Preparation
- Construction Electrician
- Construction Management 1
- Construction Management 2
- Construction Management 3
- Construction Technology Technician
- Construction Technology Fundamentals
- Control Systems Technician
- Electrical Installation
- Fire Alarm and Detection Technician
- Fire Code
- Forced-Air Heating
- HVAC Controls Technician
- Hydronic Heating
- International Plumbing and Mechanical Codes
- International Residential Code
- International Plumbing and Mechanical Codes Level II Refrigeration
- Journey-Level Plumbing
- Maintenance Electrician
- National Electrical Code
- Post-Degree Specialization for Advanced Construction Electrician
- Post-Degree Specialization for Advanced Maintenance Electrician Refrigeration
- Residential Construction Electrician
- Residential Plumbing
- Residential Plumbing and Heating

*Continued on next page*



# Certificates

Continued from previous page

## **Criminal Justice**

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

## **Diagnostic Medical Sonography**

### **Early Childhood Education**

- Director
- Infant/Toddler Group Leader
- Preschool Group Leader

### **Education**

- Paraeducator
- Adult Education and Family Literacy

### **Emergency Management and Planning**

#### **Emergency Medical Services**

- Emergency Medical Technician - Basic

### **Engineering Graphics**

- Architectural
- Mechanical
- Civil
- Interior Design
- Inventor
- SolidWorks

**Esthetics** (In cooperation with and taught at Warren Tech)

## **Fine Woodworking**

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

## **Fire Science**

- Drive Operator
- Firefighter I
- Fire Inspector
- Fire Instruction
- Fire Investigator
- Fire Officer I
- Fire Officer II
- Fire Officer III
- Hazardous Materials Technology
- Technical Heavy Rescue
- Wildland Management

**Hairstyling** (In cooperation with and taught at Warren Tech)

## **Health Careers**

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

## **Multimedia Graphics Design**

- Game Arts
- Graphics and Animation Technology
- Professional Photography Production and Design
- Motion Graphics Animation
- Web Page Design

**Nail Technology** (In cooperation with and taught at Warren Tech)

## **Outdoor Recreation Leadership**

- Outdoor Generalist
- Mountaineering Skills
- Winter Skills
- Water-based Skills

## **Park Ranger Technology**

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

## **Theatre**

- Costume and Fashion Design
- Costume Basics
- Stagehand Basics
- Stagecraft

## **Vascular Technology**

**Welding** (In cooperation with and taught at Warren Tech)

- Basic Welding and Cutting
- FCAW Certificate
- GMAW Certificate
- GTAW Certificate
- SMAW Certificate



# Noncredit

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

## **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 the 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 casino management, we are a one-stop training organization dedicated to providing high quality, effective, and affordable training for 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.

**Information: 303.914.6420**

**[www.rrcc.edu/rmec](http://www.rrcc.edu/rmec)**



# Programs

*Look here for information about the degrees and certificates you can earn at RRCC and the courses required for each.*

# 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. 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		Credits
ACC 121	Accounting Principles I	4
ACC 122	Accounting Principles II	4
ACC 116	Computerized Billing	3
ACC 135	Spreadsheet Applications for Accounting	3
ACC 138	Payroll and Sales Tax	3
ACC 211	Intermediate Accounting I	4
ACC 212	Intermediate Accounting II	4
ACC 245	Computerized Accounting with a Professional Package	3
BTE 108	Ten-Key by Touch or faculty advisor-approved elective	1
BUS 115	Introduction to Business	3
BUS 216	Legal Environment of Business	3
BUS 217	Business Communication & Report Writing	3
CIS 145	Complete PC Database: Access	3
<b>Faculty advisor-approved business electives</b>		<b>4</b>
<b>General Education Courses Required</b>		
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
<b>Total Credits</b>		<b>60</b>

## AAS Degree

### Accounting Technician

This program prepares you to perform bookkeeping and accounting tasks.

Required Courses		Credits
ACC 101	Fundamentals of Accounting or faculty advisor-approved electives	3
ACC 116	Computerized Billing	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 faculty advisor approved elective	1
BUS 115	Introduction to Business	3
BUS 216	Legal Environment of Business	3
BUS 217	Business Communication & Report Writing	3
CIS 135	Complete PC Word Processing	3
CIS 145	Complete PC Database: Access	3
<b>Faculty advisor-approved business electives</b>		<b>6</b>
<b>General Education Courses Required</b>		
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
<b>Credit from two of the following areas:</b> Social Science, Arts and Humanities, Science		6
<b>Total Credits</b>		<b>60</b>



## 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	
ACC 121	Accounting Principles I	4
ACC 138	Payroll and Sales Tax	3
BTE 100	Computer Keyboarding or faculty advisor-approved elective	1
BTE 108	Ten-Key by Touch or faculty advisor-approved elective	1
BUS 115	Introduction to Business	3
CIS 118	Introduction to PC Applications	3
<b>Total Credits</b>		<b>14-15</b>

## 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 faculty advisor-approved elective	3
ACC 116	Computerized Billing	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 faculty advisor-approved elective	1
BTE 108	Ten-Key by Touch or faculty advisor-approved elective	1
BUS 115	Introduction to Business	3
CIS 118	Introduction to PC Applications	3
<b>Total Credits</b>		<b>31</b>

# 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.

## Degrees: Associate of Applied Science

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

## Certificates:

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

programs

## AAS Degree

**Air Conditioning, Heating, and Refrigeration  
Required Courses** **Credits**

**Cert: Level I Refrigeration** **10**

HVA 110	Fundamentals of Gas Heating	4
HVA 111	Piping Skills	4
HVA 132	Air Conditioning and Refrigeration Controls	4
HVA 134	Air Conditioning Systems	4
HVA 162	Heating Controls	4
HVA 206	Mechanical Code	4
HVA 240	Servicing Forced Air Systems	4
HVA 247	Hot Water Heating Systems	4

**General Education Requirements See page 66.** **15**

**Construction Technology Requirements** **10**  
See page 66.

**Total Credits** **67**

## AAS Degree

**Refrigeration  
Required Courses** **Credits**

**Refrigeration Certificate** **30**

HVA 231	Pneumatic Controls	4
HVA Electives		4

**General Education Requirements See page 66.** **15**

**Construction Technology Requirements** **10**  
See page 66.

**Total Credits** **63**

## AAS Degree

**Air Conditioning  
Required Courses** **Credits**

**Air Conditioning Certificate** **34**

HVA 263	Chillers	4
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**General Education Requirements See page 66.** **15**

**Construction Technology Requirements** **10**  
See page 66.

**Total Credits** **63**

## AAS Degree

**Building Automation  
Required Courses** **Credits**

**Level 1 Refrigeration Certificate** **10**

**Building Automation Certificate (less HVA 105)** **25**

**General Education Requirements See page 66.** **15**

**Construction Technology Requirements** **10**  
See page 66.

**Total Credits** **60**

## AAS Degree

**Hydronic Heating  
Required Courses** **Credits**

**Hydronic Heating Certificate** **37**

**General Education Requirements See page 66.** **15**

**Construction Technology Requirements See page 66.** **10**

**Total Credits** **62**

## AAS Degree

**Heating  
Required Courses** **Credits**

OSH 127	10-HR Construction Industry Standards	1
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	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** **15**  
See page 66.

**Construction Technology Requirements** **10**  
See page 66.

**Total Credits** **62**

## Certificate

**Level I Refrigeration  
Required Courses** **Credits**

OSH 127	10-HR Construction Industry Standards	1
HVA 102	Basic Refrigeration	4
HVA 105	Electricity for HVAC/R	4
HVA 113	Refrigerant Recovery Training	1

**Total Credits** **10**

42

## Certificate

### Level II Refrigeration

Required Courses	Credits
Level I Refrigeration Certificate	10
HVA 132 Air Conditioning/Refrigeration Controls	4
HVA 233 Advanced Refrigeration or	
HVA 261 A/C Systems Service and repair	4
<b>Total Credits</b>	<b>18</b>

## Certificate

### HVAC Controls Technician

Required Courses	Credits
OSH 127 10 HR Construction Industry Standards	1
HVA 105 Electricity for HVAC/R	4
HVA 110 Fundamentals of Gas Heating	4
HVA 132 Air Conditioning/Refrigeration Controls	4
HVA 162 Heating Controls	4
HVA 231 Pneumatic Controls	4
<b>Total Credits</b>	<b>21</b>

## Certificate

### Building Automation

Required Courses	Credits
OSH 127 10 HR Construction Industry Standards	1
HVA 105 Electricity for HVAC/R	4
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
<b>Total Credits</b>	<b>29</b>

## Certificate

### Refrigeration

Required Courses	Credits
Level I Refrigeration Certificate	10
HVA 111 Piping Skills	4
HVA 122 Commercial Refrigeration or	
HVA 233 Advanced Refrigeration	4
HVA 132 A/C and Refrigeration Controls	4
HVA 206 Mechanical Code	4
HVA XXX HVA Electives	4
<b>Total Credits</b>	<b>30</b>

## Certificate

### Air Conditioning

Required Courses	Credits
Level 1 Refrigeration Certificate	10
HVA 111 Piping Skills	4
HVA 132 Air Conditioning and Refrigeration Controls	4
HVA 134 Air Conditioning Systems	4
HVA 140 Basic Sheet Metal	4
HVA 206 Mechanical Code	4
HVA 261 Air Conditioning Systems Service and Repair	4
<b>Total Credits</b>	<b>34</b>

## Certificate

### Forced-Air Heating

Required Courses	Credits
OSH 127 10-HR Construction Industry Standards	1
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 200 Residential Code Mechanical and Fuel Gas	2
HVA 206 Mechanical Code	4
PLU 150 Code and Piping Calculations	2
PLU 208 Fuel Gas Code	4
HVA 240 Servicing Residential Forced Air Systems	4
<b>Total Credits</b>	<b>33</b>

## Certificate

### Hydronic Heating

Required Courses	Credits
OSH 127 10-HR Construction Industry Standards	1
HVA 105 Electricity for HVAC/R	4
HVA 110 Fundamentals of Gas Heating	4
HVA 111 Piping Skills	4
HVA 162 Heating Controls	4
HVA 206 Mechanical Code	4
HVA 247 Hot Water Heating Systems	4
HVA 257 Low Pressure Steam Heating	4
HVA 267 Radiant Heating Systems	4
PLU 208 Fuel Gas Code	4
<b>Total Credits</b>	<b>37</b>

## Certificate

### Air Conditioning, Heating/Refrigeration Required Courses

	<b>Credits</b>
Level 1 Refrigeration Certificate	10
HVA 110 Fundamental of Gas Heating	4
HVA 132 Air Conditioning and Refrigeration Controls	4
HVA 140 Basic Sheet Metal	4
HVA 162 Heating Controls	4
PLU 208 Fuel Gas Code	4
HVA 206 Mechanical Code	4
or	
CON 230 Blueprint Reading	4
<b>Total Credits</b>	<b>34</b>

## Applied Technology

### Degree Associate of Applied Science

#### Applied Technology

Students desiring to complete the AAS degree in Applied Technology may complete the technical coursework contained in a state-approved certificate career and technical education program at one of the four area vocational technical schools (AVTS). The four AVTS are Delta-Montrose Area Vocational Technical Center, Emily Griffith Opportunity School, San Juan Basin Technical College, and Pickens Tech Center.

The general education and other degree requirements are completed at one of the Colorado public community/junior colleges. The AAS degree is conferred by the community college at which the general education and other degree requirements have been completed.

The approved certificate career and technical education programs at the AVTS prepare you by providing technical, applied academic and employability skills. Credit in varying amounts from these certificate programs is applicable to the community college's AAS degree in Applied Technology. Individual coursework from the AVTS is credited to your transcript upon completion of the requirements of both institutions.

You may enroll concurrently in both an AVTS and a community college. You must comply with the regulations and requirements relating to admission and attendance at each institution.

## 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.

	<b>Courses</b>	<b>Credits</b>
ART 111	Art History Ancient to Medieval*	3
ART 112	Art History Renaissance to Modern*	3
ART 121	Drawing I	3
ART 122	Drawing II	3
ART 131	2D Design	3
ART 132	3D Design	3
ART 211	Painting I	3

\*Fulfills General Education requirements

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

**Approved electives** **7**  
See page 26

**Total 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 (12:00-3:45 M-R) for four semesters. Students enroll in specified blocks of classes each semester with instructor approval and may not enroll in individual courses. 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**
- 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 Repair and Replacement	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 160	Custom Painting	3
ACT 170	Automotive Collision Technology Lab Experiences I	1-9
ACT 171	Automotive Collision Technology Lab Experiences II	1-9
ACT 172	Auto Collision Technology Lab Experiences III	1-9
ACT 175	Special Topics	0.5-9
ACT 180	Auto Collision Repair Internship Level I	1-9
ACT 181	Automotive Collision Repair Level II Internship	1-9
ACT 205	Estimating and Shop Management	3
ACT 211	Metal Welding and Cutting II	2
ACT 220	Structural Repair II	4
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
<b>General Education Requirements</b>		<b>15</b>
See page 34.		
<b>Total Credits</b>		<b>61</b>

## Certificates (NATEF)

For the following certificates, you 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 Repair and Replacement	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	1-9
ACT 171	Automotive Collision Technology Lab Experiences II	1-9
ACT 175	Special Topics	0.5-9
ACT 180	Auto Collision Repair Internship Level I	1-9
ACT 211	Metal Welding and Cutting II	2
<b>Total Credits</b>		<b>45</b>

## 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	1-9
ACT 175	Special Topics	0.5-9
ACT 180	Auto Collision Repair Internship Level I	1-9
ACT 241	Paint Defects	3
ACT 242	Surface Preparation II	2
ACT 243	Refinishing II	2
ACT 244	Final Detail	2
<b>Total Credits</b>		<b>38</b>

## Certificate

### Structural Analysis and Damage Repair

Required Courses		Credits
ACT 111	Metal Welding and Cutting I	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	2
ACT 220	Structural Repair II	2
ACT 231	Advanced Structural Damage Diagnosis and Repair	3
ACT 232	Fixed Glass Repair	2
<b>Total Credits</b>		<b>37</b>

## Certificate

### Mechanical and Electrical Components

Call Janis Eagan at **303.914.6543** for course listings and further information about this RRCC/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
<b>Total Credits</b>		<b>25</b>

# 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 (12:00-3:45 M-R) for four semesters. Students enroll in specified blocks of classes each semester with instructor approval and may not enroll in individual courses. 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
- Manual drive train
- Brake specialist
- Automatic transmission
- Suspension and Steering
- Engine performance
- Heating and air conditioning
- Electrical/electronics
- Engine repair
- Auto parts specialist

This program is a nationally certified automotive repair program (NATEF) which 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 you can begin at several designated starting times during the year. Therefore, you can complete some of the courses, enter the work force, and then return to complete requirements for the AAS degree or certificates or to upgrade specific skills. Demonstrated mastery of skills is required. All automotive (ASE) courses are held at the Warren Tech Auto Shop. The instructors are ASE Certified Master Technicians. Consult with an automotive service technology advisor before beginning your program of study.

## Degree Associate of Applied Science

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

Required Courses		Credits
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	1
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	4
ASE 231	Automotive Computers	2
ASE 160	Engine Removal and Install	1
ASE 161	Engine Repair and Rebuild	5
ASE 201	Automotive Parts Management	1
ASE 282	Internship: General I	0.5-6
<b>General Education Requirements</b>		<b>15</b>
See page 34.		
<b>Total Credits</b>		<b>75</b>

## NATEF Specialty Area 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
<b>Total Credits</b>		<b>4</b>

## NATEF Specialty Area Certificate

### Brake specialist

Required Courses	Credits
ASE 110 Brakes I	3
ASE 210 Brakes II	3
<b>Total Credits</b>	<b>6</b>

## NATEF Specialty Area Certificate

### Suspension and Steering

Required Courses	Credits
ASE 140 Suspension and Steering I	3
ASE 240 Suspension and Steering II	3
<b>Total Credits</b>	<b>6</b>

## NATEF Specialty Area Certificate

### Heating and Air Conditioning

Required Courses	Credits
ASE 265 Heating and A/C	5
<b>Total Credits</b>	<b>5</b>

## NATEF Specialty Area 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
<b>Total Credits</b>	<b>6</b>

## NATEF Specialty Area Certificate

### Automatic Transmission/Transaxles

Required Courses	Credits
ASE 250 Auto Trans/Transaxle Service	1
ASE 251 Auto Trans/Transaxle Diagnosis	5
<b>Total Credits</b>	<b>6</b>

## NATEF Specialty Area 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
<b>Total Credits</b>	<b>11</b>

## NATEF Specialty Area 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
<b>Total Credits</b>	<b>10</b>

## NATEF Specialty Area Certificate

### Engine Repair

Required Courses	Credits
ASE 160 Engine Removal and Install	1
ASE 161 Engine Repair and Rebuild	5
<b>Total Credits</b>	<b>6</b>

## NATEF Specialty Area Certificate

### Auto Parts Specialist

Required Courses	Credits
ASE 201 Automotive Parts Management	1
ASE 282 Internship: General I	0.5-6
<b>Total Credits</b>	<b>Minimum of 7</b>



# 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 requirements		
<b>Additional General Education Courses</b>		<b>27</b>
See page 27.		
<b>Approved electives</b>		<b>6</b>
See page 28.		
<b>Total Credits</b>		<b>60</b>

# 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.

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 requirements		
<b>Additional General Education Courses</b>		<b>27</b>
See page 27.		
<b>Approved electives</b>		<b>3</b>
See page 28.		
<b>Total Credits</b>		<b>60</b>

# Building Codes

(See Construction Technology)

# Building Maintenance

(See Construction Technology)

# Business

## Degree Associate of Arts

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.

Courses	Credits
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

### General Education Courses

**Communications (3 courses)** **9**  
See page 25.

SPE 125 is not accepted for this degree

**Arts and Humanities (2 courses )** **6**  
See page 25.

### Mathematics (2 courses)

MAT 123 Finite Mathematics or	
MAT 121 College Algebra and	4
MAT 125 Survey of Calculus	4

### Social and Behavioral Sciences (3 courses )

ECO 201 Principles of Macroeconomics	3
ECO 202 Principles of Microeconomics and one of the following	3
HIS 101, HIS 102, HIS 201, or HIS 202	3

**Physical and Life Sciences (2 courses)** **8**

See page 25.

**Total Credits** **60**

## Degrees: Associate of Applied Science

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

### Certificates:

**Management and Supervision**  
**Real Estate**  
**Small Business Startup**

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 – 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
<b>Faculty advisor-approved program electives</b>	<b>4</b>
<b>Interdisciplinary credits</b>	<b>15</b>

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
<b>Faculty advisor-approved general education electives</b>	<b>3</b>
<b>Total Credits</b>	<b>60</b>

## 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
<b>Faculty advisor-approved program electives</b>	<b>12</b>

### 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
<b>Faculty advisor-approved general education electives</b>	<b>3</b>
<b>Total Credits</b>	<b>60</b>

## 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 & 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 201	Real Estate Brokers I	6
REE 202	Real Estate Brokers II	6
<b>Faculty advisor program approved electives</b>		<b>3</b>
<b>General Education Courses Required</b>		
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
<b>Faculty advisor-approved general education electives</b>		<b>3</b>
<b>Total Credits</b>		<b>62</b>

## 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
<b>Faculty advisor-approved program electives</b>		<b>5</b>
<b>Total Credits</b>		<b>30</b>

## Certificate

### Real Estate

Required Courses		Credits
REE 201	Real Estate Brokers I	6
REE 202	Real Estate Brokers II	6
<b>Total Credits</b>		<b>12</b>

## 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 113	Writing a Business Plan	1
SBM 175	Special Topics or	
MAN 117	Time Management or	
<b>Faculty advisor-approved program electives</b>		<b>1</b>
<b>Total Credits</b>		<b>8</b>

# Business Technology

## Degree Associate of Applied Science

### Administrative Professional

### Certificates:

- Clerical Assistant
- Office Professional

These program options are designed to prepare the you for entry-level positions and/or advancement in business, governmental agencies, and other institutions that employ people in office occupations. If you aspire to advanced work placement, you should expect to have several years of work experience in addition to the degree.

BTE 111 and BTE 112 may be waived or challenged with a validated typing speed of 65 wpm for five minutes with five or fewer errors. Please see your BTE faculty advisor for choice of elective and general education courses, program planning, and transfer information. You must earn a minimum grade of C in all BTE, CIS, and 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	280	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

General Education Courses 16  
See page 34.

**Total 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	280	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
<b>Total Credits</b>			<b>20</b>

## 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	280	Internship	3
CIS	118	Introduction to PC Applications: MS Office	3
CIS	130	Introduction to the Internet	1
CIS	140	Microsoft Outlook	1
CIS	135	Complete PC Word Processing: Word	3
CIS	155	PC Spreadsheet Concepts: Excel	3
CIS	165	Presentation Graphics: PowerPoint	3
MAT	107	Career Math/Business	3
<b>Total Credits</b>			<b>34</b>

# 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 and 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 consult a Construction Technology advisor at 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
<b>General Education Requirements</b> See page 66.	<b>15</b>
<b>Construction Technology Requirements</b> See page 66.	<b>10</b>
<b>Total Credits</b>	<b>61</b>

## 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 XXX Electives	12
<b>Total Credits</b>	<b>28</b>

# 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.

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 requirements	
<b>Additional General Education Courses</b> See page 27.	<b>27</b>
<b>Approved electives</b>	<b>3</b>
<b>Total Credits</b>	<b>60</b>

## Codes

(See Construction Technology)

# Communication and Speech

## Degree

### Associate of Arts

**Communication Disorders  
(Speech and Language  
Pathology and Audiology)  
Speech and Communication**

### AA Degree

#### Communication Disorders

This program is designed to provide orientation into a course of study in communication disorders, which usually includes speech and language pathology or audiology. The program will prepare you to pursue an undergraduate degree in the speech and language pathology or audiology areas. An articulation agreement is in place with the University of Northern Colorado for students who complete this degree. Consult a faculty advisor or the department chair before beginning this course of study.

<b>Courses</b>	<b>Credits</b>
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 Human Anatomy and Physiology I	4
*Fulfills General Education requirement	
<b>General Education Courses</b>	<b>35</b>
See page 25.	
<b>Recommended General Education courses:</b>	
BIO 111 General College Biology	5
MAT 121 College Algebra	4
<b>Total Credits</b>	<b>60</b>
<b>Highly recommended for transfer to UNC</b> (Consult a faculty advisor):	
BIO 202 Human Anatomy and Physiology II	4

## AA Degree

### Speech and Communication

The study of speech and communication helps you 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. Consult with a faculty advisor prior to beginning any program of study.

<b>Courses</b>	<b>Credits</b>
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
*Fulfills General Education requirement	
<b>Additional General Education Courses</b>	<b>35</b>
See page 25.	
<b>Approved Electives</b>	<b>7</b>
See page 26.	
<b>Total Credits</b>	<b>60</b>
<b>Recommended Approved Elective course:</b>	
ASL 121 American Sign Language	5

# Computer Information Systems

## Degree Associate of Applied Science

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

## Certificates:

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

## Degree Associate of Applied Science

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. The student must earn a minimum grade of C in all CIS, CNG, CSC, CWB, and MGD courses required for a certificate or degree.

## AAS Degree

### Computer Information Systems Requirements for all AAS Degrees

Required Courses		Credits
Faculty advisor-approved business course		
or		
ACC 121	Accounting Principles I	4
ENG 121	English Composition I	3
ENG 122	English Composition II	
or		
ENG 131	Technical Writing	3
MAT 121	College Algebra (or higher)	4
SPE 115	Public Speaking	
or		
THE 118	Acting Skills: Trades/Business	3
CIS 201	Computer Issues	1
CIS 268	System Analysis and Design I	3
CIS 289	Capstone	3
<b>Credit from any two of the following three areas:</b>		<b>6</b>
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)		
<b>Total Credits</b>		<b>29-30</b>

# 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 Configuration: Vista	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
Computer Information Systems Requirements See page 58.		29-30
<b>Total Credits</b>		<b>60-61</b>

# 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 Configuration: Vista	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 and	5
CNG 263	Cisco Network Associate IV or	5
CNG 124	Networking I: Net+ and	3
CNG 125	Networking II: Net+	3
Computer Information Systems Requirements See page 58.		29-30
<b>Total Credits</b>		<b>64-65</b>

# AAS Degree

## Game Arts and Development

This area of emphasis prepares you for a broad range of careers in the gaming industry or as an independent game developer. You will develop 2D and 3D digital modeling, digital animation, and programming skills using an industry standard gaming engine. Course electives allow you to gain experience with digital sound, 2D game development, and additional 3D modeling.

Required Courses		Credits
CWB 162	Introduction to Image Editing: Photoshop or	3
MGD 111	Adobe Photoshop I	3
CSC 119	Introduction to Programming and	3
CSC 154	Introduction to MS Visual Basic. Net (OOP) or	3
CSC 160	Computer Science I: C++	4
CWB 245	Complete Web Animation:Flash or	3
MGD 143	Motion Graphics Design:Flash	3
CSC 126	Game Design and Development or	3
MGD 167	Game Design I	3
MGD 112	Adobe Illustrator I	3
MGD 152	Digital Animatics	3
MGD 153	3D Animation: Cinema 4D	3
MGD 163	Sound Design I	3
CSC 200	Game Programming I	3
CSC 227	3D Game Programming	3
CSC 228	3D Game Scripting	3
<b>Choose one elective</b>		<b>3-4</b>
CSC 161	Computer Science II	
CSC 240	Java Programming	
CSC 251	Programming in Visual Basic. NET	
CSC 261	Programming in C#.NET	
MGD 119	Maya I	
MGD 121	Painter for Digital Media	
MGD 122	Sculpting for Digital Media	
MGD 161	Director I	
MGD 163	Sound Design I	
MGD 219	Maya II	
MGD 211	Adobe Photoshop II or	
CWB 262	Advanced Image Editing	
MGD 243	Motion Graphics Design II: Flash	
MGD 267	Game Design II	
MUS 105	Introduction to Electronic/Computer Music	



<b>Required Credits</b>	<b>37-40</b>
<b>Computer Information Systems Requirements</b>	<b>29-30</b>
See page 58.	
<b>Total Credits</b>	<b>66-70</b>
<b>Recommended General Education Courses to satisfy Humanities Category:</b>	
ART 121, ART 131, ART 156 or MUS 105	

## AAS Degree

### Microsoft Application Developer (MCAD)

This area of emphasis provides the student the skill set necessary to complete the MCTS (Microsoft Certified Technology Specialist) and MCPD (Microsoft Certified Professional Developer). Students develop and maintain Windows and Web applications that use the .NET Framework 2.0 and Visual Studio 2005.

<b>Required Courses</b>		<b>Credits</b>
CIS 240	Database Design and Development	3
CWB 164	XML	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
CIS 251	Intro to Structured Query Language (SQL)	3
CSC 251	Programming in Visual Basic .NET or	3
CSC 261	Programming in C# .NET	3
CSC 250	Programming with MS ADO .NET	3
CSC 253	MS ASP .NET Web Application Development	3
CSC 262	VS.NET Application Development: VB & C#	3
<b>Required Credits</b>		<b>25-27</b>
<b>Computer Information Systems Requirements</b>		<b>29-30</b>
See page 58.		
<b>Total Credits</b>		<b>54-57</b>

## AAS Degree

### Microsoft Database Administrator (MCDBA)

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

<b>Required Courses</b>		<b>Credits</b>
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 240	Database Design and Development	3
CIS 251	Intro to Structured Query Language (SQL)	3
CIS 252	Implement and Maintain SQL Server Database	3
CIS 253	Programming Microsoft SQL Server Database	3
CNG 227	Administering a Microsoft SQL Server Database	3
CSC 250	Programming with MS ADO .NET	3
CWB 164	XML	3
<b>Choose one elective</b>		<b>3</b>
CSC 253	MS ASP .NET Web Application Development	
CSC 262	VS.NET Application Development: VB & C#	
CSC 263	MS ASP .NET XML Web Service Development	
<b>Required Credits</b>		<b>28-30</b>
<b>Computer Information Systems Requirements</b>		<b>29-30</b>
See page 58.		
<b>Total Credits</b>		<b>57-60</b>

## 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	
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 Configuration: Vista	3
CNG 212	Manage MS Windows Server Environment	4
CNG 213	Manage MS Windows Network Infrastructure	4
<b>Choose one elective</b>		<b>3</b>
CNG 217	Implement Security in a MS Windows Environment	
CNG 226	Implementing and Managing Microsoft Exchange	
CNG 227	Administering a Microsoft SQL Server Database	
<b>Required Credits</b>		<b>25-27</b>
<b>Computer Information Systems Requirements</b>		<b>29-30</b>
<b>Total Credits</b>		<b>54-57</b>

### Computer Information Systems Requirements for all AAS Degrees.

Faculty advisor-approved business course  
or

ACC 121	Accounting Principles I	4
ENG 121	English Composition I	3
ENG 122	English Composition II	
or		
ENG 131	Technical Writing	3
MAT 121	College Algebra (or higher)	4
SPE 115	Public Speaking	3
CIS 201	Computer Issues	1
CIS 268	System Analysis and Design I	3
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 Credits** **29-30**

## 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
CSC 119	Introduction to Programming	3
CSC 154	Introduction to MS Visual Basic .NET (OOP)	3
CNG 211	Windows Configuration: Vista	3
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
<b>Choose two electives</b>		<b>6-8</b>
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	
<b>Required Credits</b>		<b>28-30</b>
<b>Computer Information Systems Requirements</b>		<b>29-30</b>
<b>Total Credits</b>		<b>57-60</b>

## AAS Degree

### Oracle Database Administrator

This area of emphasis provides the student with the necessary skills to design, implement, and administer an Oracle Database.

<b>Required Courses</b>		<b>Credits</b>
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 240	Database Design and Development	3
CIS 251	Intro to Structured Query Language (SQL)	3
CIS 243	SQL PL/SQL	3
CIS 246	Oracle Database Administrator I	4
CIS 247	Oracle Database Administrator II	4
CIS 249	Oracle Performance Tuning	4
<b>Required Credits</b>		<b>25-27</b>
<b>Computer Information Systems Requirements</b>		<b>29-30</b>
See page 58.		
<b>Total Credits</b>		<b>54-57</b>

## AAS Degree

### PC Applications Specialist

This area of emphasis prepares you to become 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.

<b>Required Courses</b>		<b>Credits</b>
CSC 119	Introduction to Programming	3
CIS 118	Introduction to PC Applications: MS Office	3
CIS 128	Windows Complete	3
CIS 140	Microsoft Outlook	1
CIS 135	Complete PC Word Processing: Word	3
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
CWB 110	Complete Web Authoring: HTML	3
<b>Faculty advisor-approved electives</b>		<b>3</b>
<b>Required Credits</b>		<b>31</b>
<b>Computer Information Systems Requirements</b>		<b>29-30</b>
See page 58.		
<b>Total Credits</b>		<b>60-61</b>

## AAS Degree

### Programming Specialist

This area of emphasis prepares you to become 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.

<b>Required Courses</b>		<b>Credits</b>
CIS 240	Database Design and Development	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
CIS 220	Fundamentals of UNIX	3
CIS 221	UNIX Shellscripting or	
CWB 205	Complete Web Scripting: JavaScript	3
Two object-oriented programming languages with at least one second semester course		6
<b>Faculty advisor-approved electives</b>		<b>9</b>
<b>Required Credits</b>		<b>31-33</b>
<b>Computer Information Systems Requirements</b>		<b>29-30</b>
See page 58.		
<b>Total Credits</b>		<b>60-63</b>

## AAS Degree

### Web Design

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

<b>Required Courses</b>		<b>Credits</b>
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 or	
MGD 141	Web Design I: Dreamweaver	3
CWB 162	Image Editing I: Photoshop or	
MGD 111	Adobe Photoshop I	3
CWB 205	Complete Web Scripting: JavaScript	3
CWB 245	Complete Web Animation I: Flash or	
MGD 143	Web Motion Graphic Design I: Flash	3

CWB 246	Complete Web Animation II: Flash or	
MGD 243	Web Motion Graphic Design II: Flash	3
CWB 262	Image Editing II: Photoshop or	
MGD 211	Adobe Photoshop II	3
<b>Faculty advisor-approved electives</b>		<b>3</b>
<b>Required Credits</b>		<b>33</b>
<b>Computer Information Systems Requirements 29-30</b> See page 58.		
<b>Total Credits</b>		<b>62-63</b>

## 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 Web sites. Course offerings provide a mix of programming and applications that examine both the client and server aspects of Web sites. Creation of dynamic Web pages using databases is explored.

Required Courses		Credits
CWB 110	Complete Web Authoring: HTML	3
CNG 124	Networking I: Network+	3
CIS 240	Database Design and Development	3
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
CIS 220	Fundamentals of UNIX	3
CSC 240	Java Programming or	
CSC 251	Programming in VB.NET or	
CSC 261	Programming in C# .NET	3
CWB 164	XML	3
CSC 248	Internet Java Programming or	
CSC 253	MS ASP .NET Web Application Development	3
CWB 205	Complete Web Scripting: JavaScript	3
<b>Required Credits</b>		<b>31-33</b>
<b>Computer Information Systems Requirements 29-30</b> See page 58.		
<b>Total Credits</b>		<b>60-63</b>

## Certificate

60

### Cisco Network Associate

This area of emphasis prepares you 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 Configuration: Vista	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
<b>Total Credits</b>		<b>32</b>

## Certificate

### 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 Configuration: Vista	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 and	5
CNG 263	Cisco Network Associate IV or	5
CNG 124	Networking I: Net+ and	3
CNG 125	Networking II: Net+	3
CIS 201	Computer Issues	1
<b>Total Credits</b>		<b>36-40</b>

# Certificate

## Game Development

This area of emphasis prepares you for entry-level programming positions in the gaming industry. You will have the opportunity to work with an industry standard gaming engine.

<b>Required Courses</b>		<b>Credits</b>
CWB 162	Intro to Image Editing: Photoshop or	
MGD 111	Adobe Photoshop I	3
CSC 119	Intro to Programming and	3
CSC 154	Introduction to MS Visual Basic .NET (OOP) or	3
CSC 160	Computer Science I: C++	4
CWB 245	Complete Web Animation: Flash or	
MGD 143	Web Motion Graphics Design I: Flash	3
CSC 126	Game Design and Development or	
MGD 167	Game Design I	3
CSC 200	Game Programming I	3
CSC 227	3D Game Programming	3
CSC 228	3D Game Scripting	3
CIS 201	Computer Issues	1
<b>Choose 3 electives</b>		<b>9-10</b>
CSC 161	Computer Science II	
CSC 240	Java Programming	
CSC 251	Programming Visual Basic.NET	
CSC 261	Programming C#.NET	
MGD 112	Adobe Illustrator I	
MGD 119	Maya I	
MGD 121	Painter for Digital Media	
MGD 122	Sculpting for Digital Media	
MGD 152	Digital Animatics	
MGD 153	3D Animation I: Cinema 4D	
MGD 161	Director I	
MGD 163	Sound Design I	
CWB 262	Advanced Image Editing: Photoshop or	
MGD 211	Adobe Photoshop II	
MGD 243	Web Motion Graphics Design II: Flash	
MGD 267	Gaming Design II	
MUS 105	Introduction to Electronic/Computer Music	
<b>Total Credits</b>		<b>32-35</b>

# Certificate

## Microsoft Application Developer (MCAD)

This area of emphasis provides the student the skill set necessary to complete the MCTS (Microsoft Certified Technology Specialist) and MCPD (Microsoft Certified Professional Developer). Students develop and maintain Windows and Web applications that use the .NET Framework 2.0 and Visual Studio 2005.

<b>Required Courses</b>		<b>Credits</b>
CIS 240	Database Design and Development	3
CWB 164	XML	3
CSC 119	Introduction to Programming and	3
CSC 154	Introduction to MS Visual Basic .NET (OOP) or	
CSC 160	Computer Science I	4
CIS 251	Intro to Structured Query Language (SQL)	3
CSC 251	Programming in Visual Basic .NET or	
CSC 261	Programming in C# .NET	3
CSC 250	Programming with MS ADO .NET	3
CSC 253	MS ASP .NET Web Application Development	3
CSC 262	VS.NET Application Development: VB & C#	3
CIS 268	System Analysis and Design	3
CIS 201	Computer Issues	1
<b>Total Credits</b>		<b>29-31</b>

## Certificate

### Microsoft Database Administrator (MCDBA)

This area of emphasis provides you 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 240 Database Design and Development	3
CIS 251 Introduction to Structured Query Language (SQL)	3
CIS 252 Implement and Maintain SQL Server Database	3
CIS 253 Programming Microsoft SQL Server Database	3
CIS 268 Systems Analysis and Design	3
CNG 227 Administering a Microsoft SQL Server Database	3
CWB 164 XML	3
CIS 201 Computer Issues	1
<b>Choose one elective</b>	<b>3</b>
CSC 253 MS ASP .NET Web Application Development	
CSC 262 VS.NET Application Development: VB & C#	
CSC 263 MS ASP .NET XML Web Service Development	
<b>Total Credits</b>	<b>34</b>

## Certificate

### 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	
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 Configuration: Vista	3

CNG 212 Manage MS Windows Server Environment	4
CNG 213 Manage MS Windows Network Infrastructure	4
CIS 201 Computer Issues	1
<b>Choose one elective</b>	<b>3</b>

CNG 217 Implement Security in a MS Windows Environment	
CNG 226 Implementing and Managing Microsoft Exchange	
CNG 227 Administering a Microsoft SQL Server Database	
<b>Total Credits</b>	<b>32</b>

## Certificate

### 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
CSC 119 Introduction to Programming	3
CSC 154 Introduction to MS Visual Basic .NET (OOP)	3
CNG 211 Windows Configuration: Vista	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
CIS 201 Computer Issues	
<b>Choose two electives</b>	<b>6-8</b>

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	
<b>Required Credits</b>	<b>33-34</b>

## Certificate

### Oracle Database Administrator

This area of emphasis provides you with the necessary skills to design, implement, and administer an Oracle Database.

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 240	Database Design and Development	3
CIS 251	Intro to Structured Query Language (SQL)	3
CIS 243	SQL PL/SQL	3
CIS 246	Oracle Database Administrator I	4
CIS 247	Oracle Database Administrator II	4
CIS 249	Oracle Performance Tuning	4
CIS 268	System Analysis and Design	3
CIS 201	Computer Issues	1
<b>Total Credits</b>		<b>29-31</b>

## Certificate

### PC Applications Specialist

This area of emphasis prepares you for 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
CSC 119	Introduction to Programming	3
CIS 118	Introduction to PC Applications: MS Office	3
CIS 128	Windows Complete	3
CIS 140	Microsoft Outlook	1
CIS 135	Complete PC Word Processing: Word	3
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
CIS 201	Computer Issues	1
CWB 110	Complete Web Authoring: HTML	3
<b>Faculty approved electives</b>		<b>3</b>
<b>Total Credits</b>		<b>32</b>

## Certificate

### Programming Specialist

This area of emphasis prepares you to become 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 240	Database Design and Development	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
CIS 220	Fundamentals of UNIX	3
CIS 221	UNIX Shellscripting or	1
CWB 205	Complete Web Scripting: JavaScript	3
CIS 268	System Analysis and Design	3
CIS 201	Computer Issues	1
<b>Two object-oriented programming languages with at least one, second-semester course</b>		<b>6</b>
<b>Faculty advisor-approved electives</b>		<b>6</b>
<b>Total Credits</b>		<b>32-34</b>

## Certificate

### Web Design

This area of emphasis prepares you for an entry-level position in Internet Web design. You 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 or	3
MGD 141	Web Design I: Dreamweaver	3
CWB 162	Image Editing I: Photoshop or	3
MGD 111	Adobe Photoshop I	3
CWB 205	Complete Web Scripting: JavaScript	3

# Computer Science

Important note: Please refer to the CIS department Web site, [www.rccc.edu/cis](http://www.rccc.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, CWB, and MGD 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. Consult a faculty advisor before beginning any program.

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
*Fulfills General Education Requirements	
<b>Additional General Education Courses</b>	<b>24</b>
See page 27.	
<b>Approved Electives</b>	<b>5</b>
See page 28.	
<b>Total Credits</b>	<b>60</b>

CWB 245	Complete Web Animation I: Flash or	
MGD 143	Web Motion Graphic Design I: Flash	3
CWB 246	Complete Web Animation II: Flash or	
MGD 243	Web Motion Graphic Design II: Flash	3
CWB 262	Image Editing II: Photoshop or	
MGD 211	Adobe Photoshop II	3
<b>Faculty advisor-approved electives</b>		<b>3</b>
<b>Total Credits</b>		<b>34</b>

## Certificate

### 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 Web sites. Course offerings provide a mix of programming and applications that examine both the client and server aspects of Web sites. Creation of dynamic Web pages using databases is explored.

Required Courses	Credits
CWB 110 Complete Web Authoring: HTML	3
CNG 124 Networking I: Network+	3
CIS 240 Database Design and Development	3
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
CIS 220 Fundamentals of UNIX	3
CSC 240 Java Programming or	
CSC 251 Programming in VB.NET or	
CSC 261 Programming in C#.NET	3
CWB 164 XML	3
CSC 248 Internet Java Programming or	
CSC 253 MS ASP .NET Web Application Development	3
CWB 205 Complete Web Scripting: JavaScript	3
CIS 201 Computer Issues	1
<b>Total Credits</b>	<b>32-34</b>



# Construction Technology

## Degrees:

### Associate of Applied Science

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

## Certificates:

**Construction Management 1**  
**Construction Management 2**  
**Construction Management 3**  
**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 and to learn all four national codes. This degree provides you with opportunities to earn interdisciplinary certificates as well as to upgrade your skills. Construction technology requirements and electives must be approved by a construction technology advisor.

Information: **303.914.6511**

## AAS Degree

### Construction Management

#### Major Requirements

AEC 221	Building Electrical/Mechanical Systems	3
CON 105	Construction Technology	4
CON 230	Blueprint Reading	4
CON 245	Construction Project Management	4
CON 262	Oral and Written Communication	2
CON 265	Planning and Scheduling	2
ENT 141	Surveying 1	4
ENT 146	Construction Materials and Methods	3
<b>Major Elective Options</b>		<b>20</b>
See page 66.		

**General Education Requirements** 15  
See page 66.

**Total Credits** 61

## Certificate

### Construction Management 1

#### Major Requirements

CON 105	Construction Technology	4
CON 230	Blueprint Reading	4
ENT 146	Construction Materials and Methods	3
<b>Major Elective Options</b>		<b>4</b>
See page 66.		
<b>Total Credits</b>		<b>15</b>

## Certificate

### Construction Management 2

#### Major Requirements

<b>Cert: Construction Management 1</b>		<b>10</b>
AEC 221	Building Electrical/Mechanical Systems	3
CON 262	Oral and Written Communication	2
CON 265	Planning and Scheduling	2
ENT 141	Surveying 1	4
<b>Major Elective Options</b>		<b>4</b>
See page 66.		
<b>Total Credits</b>		<b>25</b>

## Certificate

### Construction Management 3

#### Major Requirements

<b>Cert: Construction Management 2</b>		<b>25</b>
CON 245	Construction Project Management	4
<b>Major Elective Options</b>		<b>12</b>
See page 66.		
<b>Total Credits</b>		<b>41</b>

## AAS Degree

### Construction Technology Technician

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

<b>General Education Requirements</b>		<b>15</b>
<b>Construction Technology Requirements</b>		<b>10</b>
See page 66.		
<b>Required Courses</b>		<b>36</b>
<b>Total Credits</b>		<b>61</b>

# 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 a construction technology advisor.

<b>General Education Requirements</b>	<b>15</b>
See below.	
<b>Construction Technology Requirements</b>	<b>10</b>
See below.	
<b>Required Courses</b>	<b>36</b>
See below.	
<b>Total Credits</b>	<b>61</b>

# AAS Degree

## Trades Degree

The trades AAS degree program consists of a maximum of 58 credits of trade-specific credits. You 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.

programs

### General Education Requirements

English/Speech (ENG, SPE 100 or higher)	3
Mathematics (MAT 107-Technical or higher)	3
<b>Six credits from two of these areas:</b>	<b>6</b>
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)	
<b>General Education Electives</b>	<b>3</b>
<b>Total General Education Requirements</b>	<b>15</b>

### Construction Technology Requirements

Choose a minimum of 10 credits from the following class prefixes: CON, ENT, ENY AEC, OSH.

### Major Requirements (may be modified by advisor)

#### Major Elective Options

CON 228	Estimating (EIC 217, Elect. Est. may be substituted)	4
CON 261	Leadership and Motivation	2
CON 263	Problem Solving & Decision Making	2
CON 264	Contract Documents and Construction Law	2
CON 266	Understanding & Managing Project Costs	2
CON 267	Accident Prevention & Loss Control	2
CON 268	Managing the Project	2
CON 269	Productivity Improvement	2
ACC 121	Accounting Principles1	4
BUS 217	Business Communication & Report Writing	3
Various Trade Classes (CAR, EIC, HVA, PLU, ENY (up to 8 credits))		
CON 275	Special Topics	(1-6 credits)
CON 280	Internship	(1-6 credits)

### Suggested courses - please meet with your advisor.

#### 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	Approved by Advisor	4

#### Electricity

EIC 100	Electrical Construction and Planning	4
EIC 110	Electrical Installations I	4
EIC 120	Electrical Installation II	4
EIC 130	National Electrical Code I	4
EIC 150	DC Circuit Fundamentals	4
EIC 155	AC Circuit Fundamentals	4
EIC 167	Electrical Maintenance Techniques	4
EIC 240	Fire Alarm Fundamentals	4

#### Plumbing

PLU 100	Introduction to Plumbing	4
PLU 101	Piping Skills	4
PLU 104	Plumbing Service	4
PLU 244	Commercial Plumbing Service	4
PLU 247	Hot Water Heating Systems	4

## 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 a construction technology advisor.

<b>Construction Technology Requirements</b>	<b>10</b>
See page 66.	
<b>Required Courses</b>	<b>36</b>
See page 66.	
<b>Total Credits</b>	<b>46</b>

## Certificate

### Construction Technology Fundamentals

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

<b>Construction Technology Requirements</b>	<b>10</b>
See page 66.	
<b>Additional Construction Technology Electives (See advisor)</b>	<b>4</b>
<b>Total Credits</b>	<b>14</b>

## Certificate

### Construction Technology Technician

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

<b>Construction Technology Requirements</b>	<b>10</b>
See page 66.	
<b>Required Courses (See advisor)</b>	<b>20</b>
<b>Total Credits</b>	<b>30</b>

## Certificate

### Building Codes

Choose 2 courses:

CON 142	International Residential Code	4
CON 143	International Building Code	4
EIC 130	National Electrical Code I	4
EIC 135	National Electrical Code II	4
HVA 206	International Mechanical Code	4
PLU 207	International Plumbing Code	4
PLU 208	International Fuel Gas Code	4
<b>Total Credits</b>		<b>8</b>

## Certificate

### International Residential Code

<b>Required Courses</b>		<b>Credits</b>
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
<b>Total Credits</b>		<b>10</b>

## Certificate

### International Plumbing and Mechanical Codes

<b>Required Courses</b>		<b>Credits</b>
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
<b>Total Credits</b>		<b>18</b>

# Cosmetology

(In cooperation with and taught at Warren Tech)

The Cosmetology Program is designed to develop the skills necessary for entry-level employment in areas of hairstylist, esthetics (esthetician-skin care), and nail technology (manicurist).

## Certificates (Pending approval):

- Cosmetologist**
- Hairstylist**
- Manicurist**
- Esthetician (skin)**

## Certificate

### Cosmetologist

The comprehensive Cosmetologist Certificate is designed to develop the skills necessary for entry-level employment in areas of the cosmetology field to include hairstylist, esthetician (skin), and manicurist (nail technology).

Required Courses	Credits
COS 103 Shampoo/Rinses/Conditioners I	1
COS 203 Shampoo/Rinse/Conditioners II	1
COS 110 Intro to Hair Coloring	2
COS 111 Intermediate I: Hair Coloring	2
COS 210 Intermediate II: Hair Coloring	2
COS 211 Advanced Hair Coloring	2
COS 120 Introduction to Hair Cutting	2
COS 121 Intermediate I: Hair Cutting	2
COS 220 Intermediate II: Hair Cutting	2
COS 221 Advanced Hair Cutting	2
COS 130 Intro to Hair Styling	2
COS 131 Intermediate I: Hair Styling	2
COS 230 Intermediate II: Hair Styling	2
COS 231 Advanced Hair Styling	1
COS 140 Intro to Chemical Texture	1
COS 141 Intermediate I: Chemical Texture	1
COS 240 Intermediate II: Chemical Texture	1
COS 241 Advanced Chemical Texture	1
NAT 110 Intro to Manicures & Pedicures	3
NAT 111 Intermediate Manicures & Pedicures	2
NAT 210 Advanced Manicures and Pedicures	2
NAT 211 Application of Artificial Nails	5
EST 110 Intro to Facials & Skin Care	3
EST 111 Intermediate Facials & Skin Care	2
EST 210 Advanced Massage & Skin Care	2
EST 211 Facial Makeup	1
EST 212 Hair Removal	3

COS 150 Laws, Rules and Regulations	1
COS 250 Mgmt, Ethics, Interpersonal Skills & Sales	1
COS 160 Intro to Disinfection, Sanitation & Safety	2
COS 161 Intermediate I: Disinfection, Sanitation & Safety	1
COS 260 Intermediate II: Disinfection, Sanitation & Safety	2
COS 261 Advanced Disinfection, Sanitation & Safety	1
<b>Total Credits</b>	<b>60</b>

## Certificate

### Hairstylist

The Hairstylist Certificate is designed to develop the skills necessary for entry-level employment as a hairstylist.

Required Courses	Credits
COS 103 Shampoo/Rinses/Conditioners I	1
COS 203 Shampoo/Rinse/Conditioners II	1
COS 110 Intro to Hair Coloring	2
COS 111 Intermediate I: Hair Coloring	2
COS 210 Intermediate II: Hair Coloring	2
COS 211 Advanced Hair Coloring	2
COS 120 Introduction to Hair Cutting	2
COS 121 Intermediate I: Hair Cutting	2
COS 220 Intermediate II: Hair Cutting	2
COS 221 Advanced Hair Cutting	2
COS 130 Intro to Hair Styling	2
COS 131 Intermediate I: Hair Styling	2
COS 230 Intermediate II: Hair Styling	2
COS 231 Advanced Hair Styling	1
COS 140 Intro to Chemical Texture	1
COS 141 Intermediate I: Chemical Texture	1
COS 240 Intermediate II: Chemical Texture	1
COS 241 Advanced Chemical Texture	1
COS 150 Laws, Rules and Regulations	1
COS 250 Mgmt, Ethics, Interpersonal Skills & Sales	1
COS 160 Intro to Disinfection, Sanitation & Safety	2
COS 161 Intermediate I: Disinfection, Sanitation & Safety	1
COS 260 Intermediate II: Disinfection, Sanitation & Safety	2
COS 261 Advanced Disinfection, Sanitation & Safety	1
COS 262 Advanced II: Disinfection, Sanitation & Safety	3
<b>Total Credits</b>	<b>40</b>

## Certificate

### Manicurist

The Manicurist Certificate (nail technology) is designed to develop the skills necessary for entry-level employment as a manicurist.

Required Courses		Credits
NAT 110	Intro to Manicures & Pedicures	3
NAT 111	Intermediate Manicures & Pedicures	2
NAT 210	Advanced Manicures and Pedicures	2
NAT 211	Application of Artificial Nails	5
COS 150	Laws, Rules and Regulations	1
COS 250	Mgmt, Ethics, Interpersonal Skills & Sales	1
COS 160	Intro to Disinfection, Sanitation & Safety	2
COS 161	Intermediate I: Disinfection, Sanitation & Safety	1
COS 260	Intermediate II: Disinfection, Sanitation & Safety	2
COS 261	Advanced Disinfection, Sanitation & Safety	1
<b>Total Credits</b>		<b>20</b>

## Certificate

### Esthetician (skin)

The Esthetician Certificate (esthetics-skin care) is designed to develop the skills necessary for entry-level employment as an esthetician.

Required Courses		Credits
EST 110	Intro to Facials & Skin Care	3
EST 111	Intermediate Facials & Skin Care	2
EST 210	Advanced Massage & Skin Care	2
EST 211	Facial Makeup	1
EST 212	Hair Removal	3
COS 150	Laws, Rules and Regulations	1
COS 250	Mgmt, Ethics, Interpersonal Skills & Sales	1
COS 160	Intro to Disinfection, Sanitation & Safety	2
COS 260	Intermediate II: Disinfection, Sanitation & Safety	2
COS 262	Advanced II: Disinfection, Sanitation & Safety	3
<b>Total Credits</b>		<b>20</b>

## 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. The associate of general studies degree is articulated with Metropolitan State College of Denver (Metro State) for those planning to continue in the criminal justice and criminology field. An associate of general studies degree with an emphasis in criminal justice with the AA or AS core completed and stamped, will be considered to have completed Metro's lower division general studies. Consult with a criminal justice faculty advisor early in your college career to explore all your educational options.

### AAS Degree

#### Criminal Justice

This program prepares you for entry-level employment in criminal justice, specifically law enforcement, corrections, or victim assistance.

## AAS Degree

### 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
<b>Courses for Adult Corrections:</b>			
CRJ	116	Civil Liability	3
SOC	218	Sociology of Diversity	3
or			
<b>Courses for Juvenile Corrections:</b>			
CRJ	216	Juvenile Law and Procedures	3
CRJ	235	Delinquent Behavior	3
<b>Total Credits</b>			<b>21</b>

## AAS Degree

### 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
SOC	237	Death and Dying	3
SOC	265	Violence and Culture	3
<b>Choose any two courses</b>			
CRJ	151	Domestic Violence	3
CRJ	152	Sexual Assault	3
CRJ	153	Violence Against Children	3
CRJ	269	Adult Survivors of Childhood Molestation	3
<b>Total Credits</b>			<b>21</b>

## AAS Degree

### Law Enforcement

You must complete seven CRJ courses for a total of 21 credits, but first confer with a CRJ 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:

Required Courses			Credits
CRJ	151	Domestic Violence	
		or	
CRJ	152	Sexual Assault	3
CRJ	225	Crisis Intervention	3
CRJ	239	Managing Emergency Worker Stress	3
<b>The remaining four courses must be chosen with CRJ faculty approval.</b>			
<b>Total Credits</b>			<b>21*</b>
*With proof of successful completion of a POST-certified academy and passing the POST exam, you will receive credit for the following five or six 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	240	Criminal Investigations*	3
CRJ	246	Traffic Investigation	3
<b>Total Credits</b>			<b>15-18</b>

\*CRJ 240 credit is given only to those who graduated POST academy from Dec. 2005 to the present.

## Degree Associate of General Studies

You are urged to consult with the criminal justice faculty advisor before beginning any program of study. This degree is articulated for transfer to Metropolitan State College of Denver (Metro State). These courses provide the basic preparation leading to criminal justice-related careers. The Criminal Justice program also offers an AGS transfer degree to Regis University for completion of a bachelor of science degree in public administration, criminal justice. Contact **303.914.6434** for advising. Note: The general education requirements are specific to this articulation agreement between RRCC and Regis.

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

<b>Required Courses</b>		<b>Credits</b>
CRJ 110	Introduction to Criminal Justice	3
CRJ 111	Substantive Criminal Law	3
CRJ 112	Procedural Criminal Law	3
*CRJ 125	Law Enforcement Operations or	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
<b>General Education Courses Required</b>		<b>35</b>
(must include PHI 112)		
See page 25.		
<b>Total Credits</b>		<b>60</b>

The Criminal Justice degree is also available online. Transfer your credits to Regis University and complete a bachelor of science in public administration online as well.

### **Criminal Justice Requirements for all AAS Degrees**

<b>Required Courses</b>		<b>Credits</b>
CRJ 110	Introduction to Criminal Justice	3
CRJ 111	Substantive Criminal Law	3
CRJ 112	Procedural Criminal Law	3
CRJ 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 I	3
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 (see individual degrees) 21**

Note: Course substitutions may be made with the permission of a 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 Credits 64**

## Certificate

### **Investigations**

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

<b>Required Courses</b>		<b>Credits</b>
CRJ 110	Introduction to Criminal Justice	3
CRJ 111	Substantive Criminal Law	3
CRJ 112	Procedural Criminal Law	3
CRJ 118	Report Writing	3
CRJ 210	Constitutional Law	3
CRJ 240	Criminal 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 231	Introduction to Forensic Science and Criminalistics	3
CRJ 246	Traffic Investigation	3
FST 252	Fire Arson Investigation	3
<b>Total Credits</b>		<b>27</b>

## Certificate

### **Victim Assistance Direct Service**

You must be computer literate and write well. If you do not have experience using a computer, take CIS 118, Introduction to PC Applications: 3 credits. Upon successful completion of this program, you should have the skills necessary for entry-level employment in victim assistance.

<b>Required Courses</b>		<b>Credits</b>
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
SOC 237	Death and Dying	3
SOC 265	Violence and Culture	3
<b>Total Credits</b>		<b>30</b>

# 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
<b>Total Credits</b>			<b>22</b>

# Certificate

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

This certificate program exceeds the Colorado Peace Officers Standards and Training (P.O.S.T.) requirements for peace officer entry-level training. Students earn 36 credits during this intense course of study. Eighteen 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 Police Academy I	6
CRJ	102	Basic Police Academy II	12
CRJ	104	Basic Law Enforcement Academy IV	1
CRJ	105	Basic Law	8
CRJ	106	Arrest Control Techniques	3
CRJ	107	Law Enforcement Driving	3
CRJ	108	Firearms	3
PED	XXX	Check with academy director	1
<b>Total Credits</b>			<b>37</b>

# Culinary Arts

(Pending Approval)

(In cooperation with the Rocky Mountain Chefs of Colorado and taught at Warren Tech)

This program is designed to prepare culinarians in hands-on, paid, full-time employment with an approved RMCC sponsoring house. Related classes are taught at Warren Tech for five hours per week, 90 hours per semester.

This demanding six-semester (three-year) program will prepare and teach students to achieve certified culinarian status through

the American Culinary Federation (ACF) and to earn a journeyman certificate through the United States Department of Labor, Bureau of Apprenticeship. For additional information, contact Joachim Schaaf at **303.982.8556**.

# Degree Associate of Applied Science

## Culinary Arts

# Certificate

## Culinary Arts

# AAS Degree

Required Courses			Credits
CUA	101	Food Safety and Sanitation	2
CUA	105	Food Service Concepts and Management Skills	3
CUA	121	Introduction to Food Production Principles and Practices	1
CUA	122	Introduction to Stocks, Soups and Sauces	1
CUA	123	Intro to Garde Manger	1
CUA	124	Vegetable Preparation and Breakfast Cookery	1
CUA	127	Soups, Sauces and Consommés	3
CUA	131	Starches, Pastas, Casseroles and Grain Products	1
CUA	132	Center of the Plate: Meat	1
CUA	133	Center of the Plate: Poultry, Fish and Seafood	1
CUA	141	Baking: Principles and Ingredients	1
CUA	142	Basic Yeast-Raised Products and Quick Breads	1
CUA	143	Baking: Cakes, Pies, Pastries and Cookies	1
CUA	144	Baking Applications	1
CUA	150	Baking: Decorating and Presentation	3
CUA	151	Baking: Intermediate Bread Preparation	3
CUA	152	Individual Fancy Dessert Production	3
CUA	156	Nutrition for the Hospitality Professional	3
CUA	157	Menu Planning	3
CUA	180	Culinary Arts Internship 1	5
CUA	182	Culinary Arts Internship 2	5
CUA	210	Advanced Cuisine and Garde Manger	4
CUA	242	Intermediate Garde Manger	1
CUA	255	Supervision in the Hospitality Industry	3
CUA	261	Cost Controls	3
CUA	281	Culinary Arts Internship 3	5



General Education Requirements		Credits
<b>Required Courses</b>		
ENG 121	English Composition I	3
MAT 106	or higher	3
SPE 115	Public Speaking	3
CIS 118	Intro to PC Application	3
	Humanities elective	3
<b>Total Credits</b>		<b>75</b>

## Certificate

### Culinary Arts

Required Courses		Credits
CUA 101	Food Safety and Sanitation	2
CUA 105	Food Service Concepts and Management Skills	3
CUA 121	Introduction to Food Production Principles and Practices	1
CUA 122	Introduction to Stocks, Soups and Sauces	1
CUA 123	Intro to Garde Manger	1
CUA 124	Vegetable Preparation and Breakfast Cookery	1
CUA 127	Soups, Sauces and Consommés	3
CUA 131	Starches, Pastas, Casseroles and Grain Products	1
CUA 132	Center of the Plate: Meat	1
CUA 133	Center of the Plate: Poultry, Fish and Seafood	1
CUA 141	Baking: Principles and Ingredients	1
CUA 142	Basic Yeast-Raised Products and Quick Breads	1
CUA 143	Baking: Cakes, Pies, Pastries and Cookies	1
CUA 144	Baking Applications	1
CUA 150	Baking: Decorating and Presentation	3
CUA 151	Baking: Intermediate Bread Preparation	3
CUA 152	Individual Fancy Dessert Production	3
CUA 156	Nutrition for the Hospitality Professional	3
CUA 157	Menu Planning	3
CUA 180	Culinary Arts Internship 1	5
CUA 182	Culinary Arts Internship 2	5
CUA 210	Advanced Cuisine and Garde Manger	4
CUA 242	Intermediate Garde Manger	1
CUA 255	Supervision in the Hospitality Industry	3
CUA 261	Cost Controls	3
CUA 281	Culinary Arts Internship 3	5
<b>Total Credits</b>		<b>60</b>

# Diagnostic Medical Sonography

## Degree Associate of Applied Science or Certificate of Completion

The program prepares you for entry-level positions in the field with specialization in general sonography which includes the abdomen, OB/GYN, and vascular areas. You will be eligible, on program completion, to take the widely recognized ARDMS certifying examination. You will have the opportunity to choose between the associate of applied science degree option, or if you already have an associate of applied science degree, the certificate of completion option.

Additional fees apply for DMS 281.

**Information: 303.914.6034**

Students must earn a C or better in all DMS courses to graduate.

### Program prerequisite:

RTE 255	Multiplanar Sectional Imaging	2
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### Required Courses

DMS 205	Small Parts Ultrasound	2
DMS 206	Vascular Ultrasound	2
DMS 221	OB/GYN Ultrasound I	2
DMS 222	OB/GYN Ultrasound II	2
DMS 231	Abdominal Ultrasound I	2
DMS 232	Abdominal Ultrasound II	2
DMS 241	Ultrasound Physics I	2
DMS 242	Ultrasound Physics II	2
DMS 281	Clinical Internship I	10
DMS 282	Clinical Internship II	10
DMS 283	Clinical Internship III	10

### General Education Courses Required

MAT 107	Career Math/Technical (min. req.)	3
PSY 235	Human Growth and Development	3
BIO 201	Human Anatomy and Physiology I	4
BIO 202	Human Anatomy and Physiology II	4
ENG 121	English Composition I	3
<b>Total Credits</b>		<b>63</b>

# Early Childhood Education

## Degree Associate of Arts

## Degree Associate of Applied Science

### Certificates:

- Preschool Group Leader
- Infant/Toddler Group Leader
- Director Early Childhood Education

## Degree Associate of Arts

If you plan to transfer to a four-year public college or university to complete a degree with an emphasis in early childhood education, you should complete the following courses. These courses provide the basic preparation leading to professional early childhood education careers.

**Consult with the ECE advisor before beginning this program of study.**

Courses	Credits
ECE 101 Intro to Early Childhood Education	3
ECE 102 Early Childhood Lab Techniques	3
ECE 188 Field Based Experience	1
ECE 205 Nutrition, Health and Safety	3
ECE 238 Child Growth and Development	4
ECE 241 Human Relations for ECE	3

Transfer institution-approved ECE elective credits 6  
(See faculty advisor for institution-specific information.)

**Early Childhood Education 23**  
**General Education Courses 38**  
**Communication (3 courses) 9**

See page 25. SPE 125 not acceptable.

**Mathematics (2 courses)**

MAT 155 Integrated Math I	3
MAT 156 Integrated Math II	3

**Arts and Humanities (2 courses)**

MUS 120 Music Appreciation or	3
ART 110 Art Appreciation	3
LIT 255 Children's Literature or	3
LIT 115 Introduction to Literature	3

<b>Science (2 courses)</b>			
SCI 155	Integrated Science I		4
SCI 156	Integrated Science II		4
<b>Social Sciences (3 courses)</b>			
GEO 105	World Regional Geography		3
HIS 201	U.S. History I		3
POS 111	American Government		3
<b>Total Credits</b>			<b>61</b>

## Degree Associate of Applied Science

This program prepares you to work as a professional in a variety of capacities in early childhood education. If you complete the degree requirements, you will have met the requirements for both preschool group leader and director certificates.

Required Courses	Credits
ECE 101 Intro to Early Childhood Education	3
ECE 102 Early Childhood Lab Techniques	3
ECE 103 Guidance Strategies for Children	3
ECE 188 Field Based Experience	1
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 ECE	3
ECE 240 Administration of Early Childhood Care and Education Programs (capstone)	3

**Faculty advisor-approved ECE electives 6**

<b>Specific Program Requirements</b>		
EDU 153	ESL and Cultural Issues for Paraprofessionals	3
BUS 217	Business Communications and Report Writing or	
ECE 242	Administration: Child Care Business and ECE Programs	3
CIS 118	Introduction to PC Applications or	
EDU 261	Teaching, Learning and Technology	3

<b>General Education Requirements</b>		
ENG 121	(or above) English Composition I or	
SPE 115	Public Speaking or	
SPE 125	Interpersonal Communication	3
MAT 106	(or above) Survey of Algebra	4

<b>Credit from two of the following areas:</b>	
Arts and Humanities, Science, Social Sciences	6
<b>Faculty advisor-approved electives from above</b>	<b>3</b>
<b>Elective credits to be determined by student</b>	
<b>100 level and above</b>	<b>3</b>
<b>Total Credits</b>	<b>60</b>

## Certificate

### Preschool Group Leader

Completing this program prepares you for group leader positions in early childhood care and education settings. Upon completion of these classes, you 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 verifiable work experience.

Required Courses	Credits
ECE 101 Intro to Early Childhood Education	3
ECE 102 Early Childhood Lab Techniques	3
ECE 103 Guidance Strategies for Children	3
ECE 188 Field Based Experience	1
ECE 220 Curriculum Development: Methods and Techniques	3
ECE 238 Child Growth and Development	4
<b>Total Credits</b>	<b>17</b>

## Certificate

### Infant/Toddler Group Leader

Completing this program prepares you for infant nursery supervisor positions in early childhood care and education settings. Upon completion of these classes, you will have met academic requirements as a Colorado Infant Nursery Supervisor. In addition to the academic requirements, the Colorado Department of Human Services requires 12 months (1,820 hours) of verifiable work experience.

Required Courses	Credits
ECE 101 Intro to Early Childhood Education	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
<b>Total Credits</b>	<b>16</b>

## Certificate

### Director, Early Childhood Education

Completing this program prepares you for director-qualified positions in early childhood care and education programs. Upon completion of these classes, you 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.

Required Courses	Credits
ECE 101 Intro to Early Childhood Education	3
ECE 102 Early Childhood Lab Techniques	3
ECE 103 Guidance Strategies for Children	3
ECE 188 Field Based Experience	1
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 ECE	3
ECE 240 Administration of Early Childhood Care and Education Programs (capstone)	3
<b>Total Credits</b>	<b>26</b>

## Economics

### Degree Associate of Arts

Economics is the study of how 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 education 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. 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.

Courses	Credits
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

\* Fulfills General Education requirements.

**Additional General Education courses** 29  
See page 25.

**Approved Electives** 15  
See page 26.

**Total Credits** 60

# 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, firefighters, building department inspectors, and maintenance personnel. This program uses an extensive lab environment for important, hands-on experience in electrical classes. Consult a construction technology advisor: 303.914.6511

## Degree Associate of Applied Science

**Construction Electrician**  
**Construction Technology with an**  
**Emphasis in IBEW/NECA**  
**(Construction Electrician)**  
**Emphasis in Power Technology**  
**Fire Protection Technology**  
**Maintenance Electrician**

## 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

<b>Required Courses</b>			<b>Credits</b>
EIC	100	Electrical Construction and Planning	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
<b>Total Required Courses</b>			<b>36</b>
<b>General Education Requirements</b>			<b>15</b>
See page 34.			
<b>Construction Technology Requirements</b>			<b>10</b>
See page 66.			
<b>Total Credits</b>			<b>61</b>

## AAS Degree

<b>Maintenance Electrician</b>			<b>Credits</b>
<b>Required Courses</b>			
EIC	100	Electrical Construction and Planning	4
EIC	120*	Electrical Installations II	4
EIC	150	DC Fundamentals	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 Industrial Controls	4
EIC	225	Programmable Controllers	4
EIC	XXX	Advanced Motor Control	4
EIC	240*	Fire Alarm Fundamentals	4
EIC	XXX*	Advanced Industrial Controls	4
*Choose three of these courses.			
<b>General Education Requirements</b>			<b>15</b>
See page 34.			
<b>Construction Technology Requirements</b>			<b>10</b>
See page 66.			
<b>Total Credits</b>			<b>61</b>

## AAS Degree

### Fire Protection Technology

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

Required Courses		Credits
AEC 221*	Building Electrical/Mechanical Systems	3
CON 105*	Construction Technology	4
CON 145*	Construction Project Management	4
CAD 111	Auto CAD and File Management	1
CON 230	Blueprint Reading	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 240	Fire Alarm Fundamentals	4
EIC 241	Fire Alarm Systems	4
EIC 242	National Fire Alarm Code	4
ENT 146*	Construction Materials and Methods	3
*Choose three of these courses.		
<b>General Education Requirements</b>		<b>15</b>
See page 34.		
<b>Total Credits</b>		<b>62 (minimum)</b>

## AAS Degree

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

You can earn an associate of applied science degree in construction technology with an emphasis in IBEW/NECA construction electrician. Combine your four or five years of apprenticeship with an articulation agreement between IBEW/NECA and RRCC for an associate degree.

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, RRCC 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 RRCCOnline.

You must show proof of completion of IBEW/NECA Wireman or Outside Lineman NJATC programs.

## AAS Degree

### Emphasis in Power Technology Line Technician 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, 18 of which must be taken at RRCC or through RRCC via CCCOnline. By combining your apprentice training with six additional classes, you may earn a degree online, at home, and at times of your choosing.

## Certificate

### Construction Electrician Required Courses

Required Courses		Credits
CON 230	Blueprint Reading	4
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
EIC 135	National Electric Code II	4
EIC 150	DC Circuit Fundamentals	4
EIC 155	AC Circuit Fundamentals	4
EIC 169	Electrical Code Calculations	4
<b>Total Credits</b>		<b>36</b>

## Certificate

### Advanced Construction Electrician

A Construction Electrician Certificate or instructor's approval is required.

Required Courses		Credits
AEC 221	Building Electrical/Mechanical Systems	3
EIC 169	Electrical Code Calculations	4
EIC 205	Advanced Electrical Planning	4
EIC 217	Electrical Estimating	4
EIC 240	Fire Alarm Fundamentals	4
OSH 127	10 Hr Construction Industry Standards	1
<b>Total Credits</b>		<b>20</b>

## Certificate

### Electrical Installation

Required 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
<b>Total Credits</b>		<b>16</b>

## Certificate

### National Electrical Code

Required Courses		Credits
EIC 130	National Electrical Code I	4
EIC 135	National Electrical Code II	4
EIC 169	Electrical Code Calculations	4
<b>Total Credits</b>		<b>12</b>

## Certificate

### Control Systems Technician

Required Courses		Credits
EIC 220	Industrial Electrical Controls	4
Pre-req: EIC 150 and EIC 155 or permission		
EIC 225	Programmable Controls	4
EIC XXX	Advanced PLC	4
EIC 240	Fire Alarm Fundamentals	4
EIC XXX	Advanced Industrial Controls	4
<b>Total Credits</b>		<b>20</b>

## Certificate

### Residential Construction Electrician

Required Courses		Credits
CON 230	Blueprint Reading	4
EIC 100	Electrical Construction and Planning	4
EIC 110	Electrical Installations I	4
EIC 130	National Electric Code I	4
EIC 150	DC Circuit Fundamentals	4
EIC 155	AC Circuit Fundamentals	4
<b>Total Credits</b>		<b>24</b>

## Certificate

### Maintenance Electrician

Required Courses		Credits
CON 230	Blueprint Reading	4
EIC 110	Electrical Installations I	4
EIC 120	Electrical Installations II	4
EIC 130	National Electric Code I	4
EIC 135	National Electric Code II	4
EIC 150	DC Circuit Fundamentals	4
EIC 155	AC Circuit Fundamentals	4
EIC 220	Industrial Electrical Controls I	4
EIC 240	Fire Alarm Fundamentals	4
<b>Total Credits</b>		<b>36</b>

## Certificate

### Advanced Maintenance Electrician

A Certificate for Maintenance Electrician or instructor's approval is required.

Required Courses		Credits
CON 230	Blueprint Reading	4
EIC 150	DC Circuit Fundamentals	4
EIC 155	AC Circuit Fundamentals	4
EIC 160	Electrical Instruments and Measurements	4
EIC 167	Electrical Maintenance Techniques	4
EIC 169	Electrical Code Calculations	4
EIC 205	Advanced Electrical Planning	4
EIC 210	Advanced National Electrical Code	4
EIC 225	Programmable Controllers	4
<b>Total Credits</b>		<b>36</b>

## Certificate

### Post-Degree Specialization for Advanced Construction Electrician

A Construction Electrician degree or instructor's approval is required.

Required 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
<b>Total Credits</b>	<b>16</b>

## Certificate

### Post-Degree Specialization for Advanced Maintenance Electrician

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

Required 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
<b>Total Credits</b>	<b>16</b>

## Certificate

### Fire Code

Required 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
Pre-req: FST 102, FST 104, and FST 105 or permission	
<b>Total Credits</b>	<b>15</b>

## Certificate

### Fire Alarm and Detection Technician

Required Courses	Credits
CAD 111 Auto CAD and File Management	1
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 Fire Alarm Systems Design	4
EIC 242 National Fire Alarm Code	4
<b>Total Credits</b>	<b>25</b>

# Elementary Education

(See Teacher Education)

## Emergency Management and Planning

(In cooperation with the Colorado Division of Emergency Management)

## Degree Associate of Applied Science

## Certificate

## AAS Degree

### Emergency Management and Planning

(Offered through CCCOnline)

Completion of this curriculum prepares you for

- Entry into a career in emergency management and planning.
- Promotion within an emergency management agency or the private sector.
- Advancement to a four-year college in pursuit of a bachelor of science degree in public administration with emphasis in emergency management and planning.

Emphasis is placed on modern emergency management and planning techniques as currently practiced by the public and private sectors. The ability to perform essential work in a disaster requires unique skills and knowledge of emergency management and planning. These skills are covered in depth. The Federal Emergency Management Agency (FEMA) recognizes this program as one of the pioneering programs in the country. The emergency management and planning courses are available over the Internet, providing flexibility and avoiding lengthy and costly travel. You may register for the program online at [www.cconline.org](http://www.cconline.org). (Click on the RRCC choice, then Emergency Management and Planning.)

**Information: 303.914.6462.**

Required Courses	Credits
<b>(30 credits required)</b>	
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	3
EMP 291	Public Information Officer	3

**General Education Courses Required**

ENG 131	Technical Writing or	
ENG 121	English Composition I	3
MAT 107	Career Math (or higher)	3
PSY 101	General Psychology	3
SOC 101	Introduction to Sociology	3
HUM 121	Early Civilizations	3

**Faculty advisor-approved electives  
(15 credits required)**

ENV 101	Intro to Environmental Science	3
FST* 107	Hazardous Materials 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 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. x.

Required Courses	Credits
Choose 10 courses from the listing below	
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	3
EMP 291	Public Information Officer	3
<b>Total Credits</b>		<b>30</b>

**Emergency Medical Services**

**Degree Associate of Applied Science**

**Paramedicine**

**Certificate**

**Emergency Medical Technician-Basic**

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. Consult with an Emergency Medical Service faculty advisor early in your college career to explore all your educational options. You must earn a C or better in all EMS courses to graduate. You must complete a criminal background check prior to enrolling in this program by using American DataBank's online background check procedures: [www.healthcareex.com](http://www.healthcareex.com).

**AAS Degree**

**Paramedicine**

This program assists you in advancing your career 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
<b>General Education Courses Required Credits</b>		<b>15</b>
See page 34.		
<b>Total Credits</b>		<b>74</b>

## Certificate

### Emergency Medical Technician-Basic

This program prepares you to sit for the National Registry practical and written certification exams, which are required for Colorado state certification. Once certified, you 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
<b>Total Credits</b>		<b>10</b>

## 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 advisor before beginning this program of study. These courses provide the basic preparation leading to engineering-related careers.

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 requirements		
<b>Additional General Education Courses</b>		<b>26</b>
See page 28.		
<b>Total Credits</b>		<b>60</b>

## Engineering Graphics Technology

### Degrees: Associate of Applied Science

**Architectural**  
**Mechanical**  
**Civil\***  
**Interior Design \***  
 \*New! Pending Approval

### Certificates:

**Engineering Graphics Architectural**  
**Engineering Graphics Mechanical**  
**Engineering Graphics Civil**  
**Engineering Graphics Interior Design**  
**Inventor**  
**SolidWorks**

The Engineering Graphics Technology program offers Associate of Science degrees, and certificates. This program prepares you for employment as a design drafter.

Prerequisites may be waived or challenged for previous educational, occupational or related experience. The curricula are designed to develop communication, leadership, and critical thinking skills. The classroom setting will provide experience in the 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. Specifications, handbooks, and technical data applicable to engineering graphics are emphasized. Lab fees are assessed. Consult with an Engineering Graphics Technology faculty advisor with any questions you may have at **303-914-6572**. Students must earn a C or better in all courses to graduate.

### Engineering Graphics Technology --- Requirements for All AAS Degrees:

CIS 118	Introduction to PC Applications: MS Office	3
CON 230	Blueprint Reading	4
ENG 131	Technical Writing	3
MAT 107	Career Math	3
<b>Choose one from the following:</b>		
SPE 115	Public Speaking	
	or	
SPE 125	Interpersonal Communication	
	or	
THE 118	Acting Skills Trades / Business	3
<b>Total Credits</b>		<b>16</b>

# AAS Degree

## Architectural

The Architectural AAS degree prepares students for a career in a Construction or Architectural firm. Electives allow students to select a preferred path in this field. It might be helpful to remember that one credit is equal to 20 hours of class time.

Required Architectural Courses			Credits
CAD	110	Basic CAD	6
EGT	230	Drafting and Design I	6
EGT	231	Drafting and Design II	6
CAD	217	Autodesk VIZ / Basic	3
CAD	218	Autodesk VIZ / Advanced	3
CAD	226	Architectural Desktop	6
CAD	289	Capstone (Fourth Semester Class)	6
COM	105	Career Communications	3

**Choose one from the following:**

CAR	133	Construction Framing and Safety or	
CAR	136	Remodeling, Renovation & Additions or	
CAR	166	Stair Design & Construction	4

**One from the following:**

MGD	111	Adobe Photoshop I or	
CSW	162	Intro to Image Editing: Photoshop I	3

**Architectural AAS Degree Requirements:**

Required Engineering Graphics	
Technology Credits	16
Required Architectural Credits	39
Required Architectural Elective Credits	7
<b>Total Required Credits for Architectural AAS Degree</b>	<b>62</b>

# AAS Degree

## Mechanical

The Mechanical AAS degree prepares students for a career with many options to choose from. Students can go into mechanical design, piping, electrical, mining, welding, etc. Course electives allow students to select a preferred path in this field.

Required Mechanical Courses			Credits
CAD	110	Basic CAD	6
EGT	230	Drafting and Design I	6
EGT	231	Drafting and Design II	6
CAD	289	Capstone (Fourth Semester Class)	6
PHY	105	Conceptual Physics	4
TEC	105	Geometric, Dimensioning and Tolerancing	3

**Required Mechanical Electives:**

Choose a minimum of 15 credit hours from the list below. You may substitute 6 of the 15 credit hours with other CAD/EGT department courses.

PLU	110	Intro to Plumbing	4
PLU	111	Piping Skills	4
PLU	150	Code & Piping Calculations	2
PRO	110	Safety, Health and Environment	3
PRO	120	Process Technology I: Equipment	4
PRO	130	Instrumentation	3
WEL	100	Safety for Welders	1
WEL	101	Allied Cutting Process	4
WEL	103	Basic Shielded Metal Arc Welding I	4
WEL	250	Layout and Fabrication	4
<b>Total Mechanical Elective Credits</b>			<b>15</b>

**Mechanical AAS Degree Requirements:**

Required Engineering Graphics	
Technology Credits	16
Required Mechanical Credits	31
Required Mechanical Elective Credits	15
<b>Total Required Credits for Mechanical AAS Degree</b>	<b>62</b>

## AAS Degree

### Civil

CAD	110	Basic CAD	6
EGT	230	Drafting and Design I	6
EGT	230	Drafting and Design II	6
CAD	231	Land Desktop / Autodesk	3
CAD	233	Civil 3D	3
EGT	220	Introduction to Civil Graphics Technology	3
EGT	221	Land Surveying Concepts	3
EGT	222	Topographic Map Concepts and Earthwork	3
CAD	289	Capstone (Fourth Semester Class)	6
COM	105	Career Communications	3
PHY	105	Conceptual Physics	4

### Civil AAS Degree Requirements:

#### Required Engineering Graphics

Technology Credits **16**

Required Civil Credits **46**

Total Required Credits for Civil AAS Degree **62**

## AAS Degree

### Interior Design

ART	121	Drawing I	3
ART	138	Photography I	3
ART	140	Color Photography I	3
ART	264	Marketing for Visual Arts	3
FIW	104	Elements of Design	2
COM	105	Career Communications	3
CAD	105	AutoCAD for Interiors	4
CAD	202	Basic 3D CAD	3
CAD	217	3D Studio VIZ / Basic	3
CAD	218	3D Studio VIZ / Advanced	3
CAD	226	Autodesk Architectural Desktop	6
CAD	289	Capstone (Fourth Semester Class)	6

### Choose one from the following:

MGD	111	Adobe Photoshop I	
		or	
CSW	162	Intro to Image Editing: Photoshop I	3

### Interior Design AAS Degree Requirements:

#### Required Engineering Graphics

Technology Credits **16**

Required Interior Design Credits **42**

Required Elective Credits **3**

Total Required Credits for Interior Design

AAS Degree **61**

## Certificate

Course material is relative to certificate path.

### Architectural, Mechanical, OR Civil

Required Courses			Credits
CAD	110	Basic CAD	6
EGT	230	Drafting and Design I	6
EGT	231	Drafting and Design II	6
<b>Total Credits</b>			<b>18</b>

## Certificate

### Interior Design

CAD	105	AutoCAD for Interiors	4
CAD	202	Computer Aided Drafting 3D	3
CAD	217	3D Studio VIZ / Basic	3
CAD	218	3D Studio VIZ / Advanced	3
CAD	260	CAD Project	2
<b>Total Credits</b>			<b>15</b>

## Certificate

### Inventor

CAD	241	Inventor Basics	6
CAD	242	Inventor Intermediate	6
CAD	243	Inventor Advanced	6
<b>Total Credits</b>			<b>18</b>

## Certificate

### SolidWorks

CAD	256	SolidWorks Basics	6
CAD	257	SolidWorks Intermediate	6
CAD	258	SolidWorks Advanced	6
<b>Total Credits</b>			<b>18</b>

# 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.

Courses	Credits
LIT 115 Introduction to Literature *	3
ENG 221 Creative Writing	3
<b>Choose two courses from the following:</b>	
LIT 201 Masterpieces of Literature I *	3
LIT 202 Masterpieces of Literature II*	3
LIT 211 Survey of American Literature I*	3
LIT 212 Survey of American Literature II*	3
LIT 221 Survey of British Literature I*	3
LIT 222 Survey of British Literature II*	3
*State-guaranteed general education courses	
<b>Additional General Education Courses</b> See page 25.	<b>32</b>
<b>Approved electives</b>	<b>16</b>
Select electives with ENG and LIT prefixes from the list on page 26 after talking to an English faculty advisor.	
<b>Total Credits</b>	<b>60</b>

# Entrepreneurship

(See Business)

# Facility Maintenance

(See Construction Technology, Building Maintenance)

# Fine Woodworking

## Degree 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-level skills through craftsman/master-level competencies. Day, evening, and weekend classes for part-time or full-time students include the areas of lutherie (guitar building), furniture building, cabinet making, chair making, carving, and wood turning. Courses may be repeated up to three times to increase proficiency. All courses are sequenced as shown in the certificate.

## AAS Degree

### Fine Woodworking

The AAS degree includes an additional requirement of 10 electives which could be outside of the fine woodworking program. These electives must be approved by your advisor and must complement your goals. Examples of such electives include courses from small business, art, photography, multimedia, CAD, or perhaps a Web design course.

Required Courses	Credits
FIW 101 Introduction to Woodworking	8
(FIW 100 plus an additional 4 credits of FIW courses may be substituted for FIW 101 with advisor's permission)	
FIW 104 Elements of Design	2
FIW 118 Lathe Turning	4
FIW 125 Finishing	4
(4 credits of special topics finishing classes may be substituted for FIW 125 with the advisor's permission)	
FIW 201 Joinery	4
FIW 206 Chairmaking	4
FIW 213 Furniture Making	4
FIW XXX FIW Electives	6
<b>Additional Electives (see description above)</b>	<b>10</b>
<b>General Education Electives</b> See page 67.	<b>15</b>
<b>Total Credits</b>	<b>61</b>

## Certificate

### General Fine Woodworking

Required Courses	Credits
FIW 101 Introduction to Woodworking ( FIW 100 plus an additional 4 credits of FIW courses may be substituted for FIW 101 with advisor's permission)	8
FIW 104 Elements of Design	2
FIW 118 Lathe Turning	4
FIW 125 Finishing (4 credits of special topics finishing classes may be substituted for FIW 125 with the advisors permission)	4
FIW 201 Joinery	4
FIW 213 Furniture Making	4
<b>Approved Electives</b>	<b>6</b>
<b>Total Credits</b>	<b>32</b>

## Certificate

### Woodworking Fundamentals

This certificate is designed to give students the basics of most woodworking applications. It is well suited for those students seeking an occupation within an existing woodworking industry and/or continuing their pursuit of a degree or a more advanced certificate.

Required Courses	Credits
FIW 101 Introduction to Woodworking ( FIW 100 plus an additional 4 credits of FIW courses may be substituted for FIW 101 with advisor's permission)	8
FIW 201 Joinery	4
<b>Total Credits</b>	<b>12</b>

## Certificate

### Wood Turners

This certificate is designed for students desiring to 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 businesses.

Required Courses	Credits
FIW 100 Fundamentals of Woodworking (FIW 101 may be substituted for FIW 100)	4
FIW 118 Lathe Turning	4
FIW 119 Intermediate Turning I	4
FIW 121 Intermediate Turning II	4
<b>Total Credits</b>	<b>16</b>

## Certificate

### Luthier Fundamentals

As students progress through our rapidly growing luthier program, they often 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 (FIW 101 may be substituted for FIW 100)	4
FIW 102 Classical Guitar Making	5
FIW 103 Steel String Guitar Making	5
FIW XXX FIW Electives	4
<b>Total Credits</b>	<b>18</b>

## 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 is designed to represent those skills which are commonly sought within this field.

Required Courses	Credits
FIW 109 Intro to Cabinetmaking (FIW 100 or FIW 101 may be substituted for FIW 109)	4
FIW XXX Elective	4
FIW 128 Doormaking	4
FIW 209 Cabinetmaking	4
<b>Total Credits</b>	<b>16</b>

## Certificate

### Craftsman

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

Required Courses	Credits
FIW 101 Introduction to Woodworking ( FIW 100 plus an additional 4 credits of FIW courses may be substituted for FIW 101 with advisor's permission)	8
FIW 104 Elements of Design	2
FIW 201 Joinery	4
FIW 213 Furniture Making	4
<b>Total Credits</b>	<b>18</b>

## Certificate

### Joiner

This certificate is 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 101 Introduction to Woodworking ( FIW 100 plus an additional 4 credits of FIW courses may be substituted for FIW 101 with advisor's permission)	8
FIW 201 Joinery	4
FIW 206 Chairmaking	4
FIW 213 Furniture Making	4
FIW 215 Advanced Joinery	4
<b>Total Credits</b>	<b>24</b>

## Certificate

### Artisan

The artisan of old was the builder of the product. As students progress through this certificate, they come to realize that the builder needs to have an intimate relationship with design. This certificate requires the completion of two particular projects chosen to illustrate the need to combine the building with the designing in the field of custom furniture building. The first project is a workbench and the second the completion of a toolbox. These are 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 101 Introduction to Woodworking ( FIW 100 plus an additional 4 credits of FIW courses may be substituted for FIW 101 with advisor's permission)	8
FIW 104 Elements of Design	2
FIW 118 Lathe Turning	4
FIW 122 Woodcarving	4
FIW 200 Veneering and Marquetry	4
FIW 201 Joinery	4
FIW 213 Furniture Making	4
FIW XXX Elective approved by advisor	2
<b>Total Credits</b>	<b>32</b>

## Certificate

### Post-Degree Master Craftsman

This certificate expands skills to the level of Master Craftsman. You are expected to develop individual portfolios that demonstrate your ability to set up and maintain equipment, design and build original pieces, and demonstrate specific skills through presentations from each course. Design skills and drawing proficiency are required. Additional courses may be 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 102 Guitar Making	5
FIW 104 Elements of Design	2
FIW 122 Woodcarving	4
FIW 128 Doormaking	4
FIW 200 Veneering and Marquetry	4
FIW 205 Tablemaking	4
FIW 206 Chairmaking	4
FIW 209 Cabinetmaking	4
FIW 210 Bending and Laminating	4
FIW 220 Advanced Furniture & Cab Construction	4
FIW XXX Electives approved by advisor	14
<b>Total Credits</b>	<b>53</b>

## Fire Protection Technology

(See Electricity Commercial/ Industrial/ Residential, page 76.)

# 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

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
- Transfer to a four-year college in pursuit of a bachelor of science degree in Fire Science Administration.

## AAS Degree

### Fire Science Technology

This program of study is designed for students new to or preparing for the fire service. Students must earn a C or better in all fire science and general education courses to graduate.

Required 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 110	Job Placement and Assessment	3
FST 151	Driver Operator or	4
FST 152	Wildland Firefighting	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
<b>Total Credits</b>		<b>48-49</b>
<b>General Education Requirements</b>		<b>15</b>
See page 34.		
<b>Total Credits</b>		<b>63-64</b>

## 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 bachelor of science in public administration online as well.

Required 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
<b>Total Courses</b>	<b>33</b>
<b>General Education Requirements</b>	<b>15</b>
See page 34.	
<b>Faculty advisor-approved alectives</b>	<b>12</b>
<b>Total Credits</b>	<b>60</b>

## Certificate

### Fire Fighter I

Prerequisite: FST 160 (CPAT Test Prep)  
Strongly recommended prerequisite: EMS 125/170 (EMT-Basic)

Required Courses	Credits
FST 100 Firefighter I Academy	9
FST 102 Intro to Fire Science and Suppression	3
FST 170 Fire Academy Clinical	1
<b>Total Credits</b>	<b>13</b>

## Certificate

### Fire Instructor

Required Courses	Credits
FST 201 Instructional Methodology	3
SPE 115 Public Speaking	3
<b>Total Credits</b>	<b>6</b>

## Certificate

### Fire Officer I

Prerequisites:  
ENG 121 English Composition I  
Firefighter I (Colorado CDFS certification)

Required 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
<b>Total Credits</b>	<b>12</b>

## Certificate

### Fire Officer II

Prerequisite: Fire Officer I Certificate

Required 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
<b>Total Credits</b>	<b>12</b>

## Certificate

### Fire Officer III

Prerequisites: Fire Officer I and II Certificates

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

## Certificate

### Driver Operator

Required Courses	Credits
FST 151 Driver Operator	4
FST 203 Fire Science Hydraulics	3
<b>Total Credits</b>	<b>7</b>



## Certificate

### Technical Heavy Rescue

Required 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
<b>Total Credits</b>		<b>12</b>

## Certificate

### Wildland Management

Required 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
<b>Total Credits</b>		<b>8</b>

## Certificate

### Fire Inspector

Prerequisite: Fire Officer I

Required Courses		Credits
FST 105	Building Plans and Construction	3
FST 106	Fire Inspection Practices	3
FST 204	Codes and Ordinances	3
<b>Total Credits</b>		<b>9</b>

## Certificate

### Fire Investigator

(Police and fire personnel only)

Required 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
<b>Total Credits</b>		<b>15</b>

## Certificate

### Hazardous Materials

Required 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
<b>Total Credits</b>		<b>12</b>

## 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.

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
* Fulfills General Education requirement	
<b>Additional General Education Courses</b> See page 25.	<b>32</b>
<b>Approved Electives</b> See page 26.	<b>12</b>
<b>Total Credits</b>	<b>60</b>

# Geology

## 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 geology. 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.

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	GEY elective	4
MAT	121	College Algebra*	4
MAT	122	College Trigonometry	3

\*Fulfills General Education requirement

**Additional General Education Courses** 27  
See page 27.

**Approved electives** 4  
**Total Credits** 60

## Health Professions

### Certificates:

- Phlebotomy
- R.N. Refresher Program
- Nurse Aid
- Holistic Health Professional

### 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 you 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			Credits
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

**Faculty advisor-approved electives** 10  
**Total Credits** 16

## 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, including a lifting requirement. Register for the NUA 170 clinical section that corresponds to the NUA 101 class. You must pass NUA 101 with a grade of C or better in order to participate in the NUA 170 clinical rotation. You must 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**. You must complete a criminal background check prior to enrolling in this course (valid for 90 days) by using American DataBank's online background check procedures at [www.healthcareex.com](http://www.healthcareex.com). The cost is currently \$59.00.

Required Courses			Credits
NUA	101	Nurse Aide Theory/Lab	4
NUA	170	Nurse Aide Clinical	1
<b>Total Credits</b>			<b>5</b>

### Certificate

#### Phlebotomy

This CCHE-approved certificate is designed to prepare you to gain employment as a phlebotomist in the health care industry. You 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 fingerstick technique and numerous other collection procedures. After successful completion of this course and the phlebotomy internship, you are eligible to apply and sit for the national AMT (American Medical Technologist) certification exam. Immunizations are required before the start of the internship. The internship and HPR 180 must be started within four months of completing HPR 112.

Please fill out an application form found on the Health Careers Web site. Permission of the instructor is required to register for both courses. You must be at least 18 years old to register.

Required Courses			Credits
HPR	112	Phlebotomy Certification	4
HPR	180	Phlebotomy Internship	3
<b>Total Credits</b>			<b>7</b>

# 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, including a lifting requirement. You must pass HPR 210 and NUR 290 with a grade of C or better in order to participate in NUR 291 clinical rotation. You also must 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**. You must complete a criminal background check prior to enrolling in this course (valid for 90 days) by using American DataBank’s online background check procedures at [www.healthcareex.com](http://www.healthcareex.com). The cost is currently \$59.00.

Required Courses	Credits
NUR 290 RN Refresher	10
NUR 291 RN Refresher Clinical	2
HPR 210 Physical Assessment	2
<b>Total Credits</b>	<b>14</b>

# Heating

(See Air Conditioning, Heating and Refrigeration page 41.)

# 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 if you are interested in teaching, government service, law, research, business and industry, journalism, publishing, libraries, or working with historical societies, museums, and/or archives. Consult with a faculty advisor before beginning this program of study.

Courses	Credits
Take one of the following courses:	
HIS 101 Western Civilization I *	3
HIS 102 Western Civilization II *	3
HIS 111 World Civilization I*	3
HIS 112 World Civilization II*	3
HIS 201 U.S. History I*	3
HIS 202 U.S. History II*	3
HIS 247 Contemporary World History*	3
*Fulfills General Education requirement.	
<b>Additional General Education Courses</b> See page 25.	<b>35</b>
<b>Approved Electives</b> See page 26.	<b>22</b>
<b>Total Credits</b>	<b>60</b>

latest information: [www.rccc.edu](http://www.rccc.edu)

# HVAC/R

(See Air Conditioning, Heating and Refrigeration page 41.)

# Industrial Maintenance Technology

## Degree Associate of Applied Science, AAS

**Mechanical\***  
**Electrical\***

### Certificates:

**Introduction to Predictive Maintenance Technology\***

**Introduction to Industrial Control Systems\***

**Introduction to Industrial Electrical Maintenance\***

**Introduction to Industrial Instrumentation and Controls\***

**Introduction to Industrial Maintenance Team Leadership\***

\* Pending Approval

The Industrial Maintenance Technology Program will prepare you for entry-level employment as a maintenance technician, a vital member of a team responsible for planning, analyzing, and maintaining the production equipment and the electrical power and control systems used in the production of electrical energy, oil and gas energy resources, alternate energy production, and food and beverage industry as well as consumer products.

This program will provide you with the basic skills required to safely maintain production equipment and to understand the basic principles of operation and control. You will understand the technical aspects of the work, workplace responsibilities, and the importance of safety in this shift-oriented position.

The industries interested in the graduates from the program include, but are not limited to, oil exploration and production, mining and mineral processing, petroleum product manufacturing, pharmaceutical production, food and beverage industry, electric power generation, drinking water treatment, wastewater treatment, and numerous product manufacturing facilities.

**Information: 303.914.6342**  
Chuck.Beck@rccc.edu  
[www.rccc.edu/isod](http://www.rccc.edu/isod)

programs

**Mechanical AAS Degree Program**

<b>Required Courses</b>			<b>Credits</b>
IMT	100	Introduction to Industrial Maintenance	3
IMT	110	Work Place Safety	3
IMT	120	Pumps, Compressors and Rotating Equipment	3
IMT	125	Mechanical Drives and Bearings	3
IMT	150	Effective Problem Solving	3
ENT	106	Print Reading for Manufacturing	3
WEL	130	Maintenance Welding	2
IMT	140	Pipe and Piping Systems	3
MAC	105	Introduction to Machining Technology	3
IMT	160	Basic Fluid Power	3
IMT	105	AC/DC Fundamentals for Industry	4
IMT	210	Vibration Principles I	3
IMT	250	Industrial Lubrication Principles I	3
IMT	280	Industry Internship	4

**Required General Education Courses:**

BUS	275	Special Topic: Business Survival Skills	3
ENG	131	Technical Writing	3
MAT	106	Survey of Algebra	4
CHE	101	Introduction to Chemistry w/lab	5
PHY	105	Conceptual Physics	4
SOC	101	Introduction to Sociology	3
		or	
PSY	101	General Psychology I	3
<b>Total Credits</b>			<b>62</b>

## Electrical AAS Degree Program

<b>Required Courses</b>			<b>Credits</b>
IMT	100	Introduction to Industrial Maintenance	3
IMT	110	Work Place Safety	3
IMT	105	AC/DC Fundamentals for Industry	4
EIC	220	Basic Motor Control	4
EIC	160	Electrical Measurement	4
EIC	225	Programmable Controlers	4
EIC	XXX	Advanced Motor Control	4
IMT	130	Basic Industrial Instrumentation	4
IMT	230	Advanced Industrial Instrumentation	3
IMT	125	Introduction to PDM Technologies	3
IMT	235	Networks and DCS	4
ENT	106	Print Reading for Manufacturing	3
IMT	280	Industry Internship	3

**Required General Education Courses:**

BUS	275	Special Topic: Business Survival Skills	3
ENG	131	Technical Writing	3
MAT	106	Survey of Algebra	4
CHE	101	Introduction to Chemistry I	5
PHY	105	Conceptual Physics	4
SOC	101	Introduction to Sociology	3
		or	
PSY	101	General Psychology I	3
<b>Total Credits</b>			<b>62</b>

## Industrial Maintenance Technology Certificates:

Completing this program allows you to possess the skills and knowledge for entry-level positions within the industry in your specific area of interest.

### Certificate

<b>Introduction to Predictive Maintenance Technology</b>			<b>Credits</b>
<b>Required Courses</b>			
IMT	110	Work Place Safety	3
IMT	210	Vibration Principles I	3
IMT	250	Industrial Lubrication Principles I	3
<b>Total Credits</b>			<b>8</b>

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## Certificate

### Introduction to Industrial Control Systems

Required Courses		Credits
EIC 220	Basic Motor Control	4
EIC XXX	Advanced Motor Control	4
EIC 225	Programmable Controllers	4
<b>Total Credits</b>		<b>8</b>

## Certificate

### Introduction to Industrial Electrical Maintenance

Required Courses		Credits
IMT 105	AC/DC Fundamentals	4
EIC 220	Basic Motor Control	4
EIC XXX	Advanced Motor Control	4
<b>Total Credits</b>		<b>12</b>

## Certificate

### Introduction to Industrial Instrumentation and Controls

Required Courses		Credits
IMT 130	Basic Instrumentation	3
IMT 230	Advanced Instrumentation	3
EIC 225	Programmable Controllers	4
<b>Total Credits</b>		<b>10</b>

## Certificate

### Introduction to Industrial Maintenance Team Leadership

Required Courses		Credits
IMT 110	Work Place Safety (M/E)	3
BUS 275	Special Topic: Business Survival Skills	3
PSY/SOC	Psychology or Sociology	3
IMT 150	Effective Problem Solving	2
<b>Total Credits</b>		<b>11</b>

# International Studies

## Degree Associate of Arts

International Studies examines 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 which provide the basic preparation leading to political science-related careers. Consult with a faculty or academic advisor before beginning this program of study.

Courses		Credits
POS 205	International Relations*	3
POS 225	Comparative Government*	3
GEO 105	World Regional Geography*	3
HIS 247	Contemporary World History*	3
ECO 201	Principles of Macroeconomics*	3
SPE 220	Intercultural Communication*	3
Foreign Language (211 or 212)		3
*Fulfills General Education requirement.		
<b>Additional General Education Courses</b>		<b>32</b>
See page 25.		
<b>Approved Electives</b>		<b>7</b>
See page 26.		
<b>Total Credits</b>		<b>60</b>

# Management/Marketing

(See Business)

# 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. You may earn an associate of science degree by meeting the general education requirements.

Courses	Credits
MAT 201 Calculus I *	5
MAT 202 Calculus II	5
MAT 204 Calculus III	5
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 requirements	
<b>Additional General Education Courses</b>	<b>27</b>
See page 28.	
<b>Total Credits</b>	<b>60</b>

## Medical Office Technology

### Degrees: Associate of Applied Science

Medical Assisting  
Medical Office

### Certificates:

Medical Assisting  
Medical Office

The medical office programs are designed to prepare you 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 not English. CPR certification and immunizations are required prior to beginning a clinical internship. All internships must start within four months of completing program requirements. A minimum grade of C must be achieved for all required courses to graduate with a certificate or degree. 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. A math prerequisite of MAT 060 or higher or NUR 101 is required for MOT 140 and 150 for all certificate and degree students. 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	2
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
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
<b>Additional General Education Courses</b>	<b>16</b>
See page 34.	
<b>Total Credits</b>	<b>61</b>

## AAS Degree

### Medical Office

The Medical Office Program is designed to prepare you 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	2
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

ACC 101	Fundamentals of Accounting	3
MAN 116	Principles of Supervision or	
BUS 115	Introduction to Business	3
MOT 130	Insurance Billing and Coding	3
MOT 136	Introduction to Clinical Skills	2
MOT 181	Administrative Internship	2
<b>Faculty advisor-approved electives</b>		<b>10</b>
<b>Additional General Education Courses Required</b>		<b>16</b>
See page 34.		
<b>Total Credits</b>		<b>60</b>

## 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. A math prerequisite of MAT 060 or higher or NUR 101 is required for MOT 140 and 150 for all certificate and degree students. Please note that not all courses are offered in the summer session.

<b>Required Courses</b>		<b>Credits</b>
HPR 106	Law and Ethics for Health Prof	2
HPR 178	Medical Terminology	2
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
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	
MOT 183	Medical Assisting Internship	5
<b>Total Credits</b>		<b>45</b>

## Certificate

### Medical Office

The Medical Office Program is designed to prepare you 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.

<b>Required Courses</b>		<b>Credits</b>
HPR 106	Law and Ethics for Health Prof	2
HPR 178	Medical Terminology	2
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
ACC 101	Fundamentals of Accounting	3
MAN 116	Principles of Supervision or	
BUS 115	Introduction to Business	3
MOT 130	Insurance Billing and Coding	3
MOT 136	Introduction to Clinical Skills	2
MOT 181	Administrative Internship	2
<b>Total Credits</b>		<b>34</b>

# Multimedia Graphic Design (MGD)

## Degree Associate of Applied Science in Multimedia Graphic Design with an emphasis in

**Graphic Design & Print Production  
Video Production**

**Motion Graphics Animation**

**Game Arts & Development**

(pending approval)

**Web Design & Development**

(pending approval)

**Professional Photographer**

**–Traditional Film**

(pending approval)

**Professional Photographer –**

**Digital Photography**

(pending approval)

**Professional Photographer**

**–Traditional Film and Digital**

**Photography**

(pending approval)

## Degree Associate of General Studies

Emphasis in

**Graphic Design/Print Production**

**Video Production**

**Motion Graphics and Animation**

## Certificates

Emphasis in

**Graphic Design & Print Production**

**Video Production**

**Motion Graphics and Animation**

**Game Arts**

(pending approval)

**Web Design**

**Advanced Web Design**

**Professional Photographer –Traditional Film**

(pending approval)

**Professional Photographer –**

**Digital Photography**

(pending approval)

**Professional Photographer –**

**Traditional Film and Digital Photography**

(pending approval)

Red Rocks Community 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 degrees will prepare you to enter the work force upon graduation.

## AAS Degree

### Emphasis in Graphic Design & Print Production

The Graphic Design/Print Production emphasis within the Multimedia Graphic Design Department prepares you to work in the traditional graphic design and printing industries. You will develop designs for electronic production for both digital and traditional press. In addition, you will learn design techniques for packaging and point of sale and other forms of print media. Printing press technology is also addressed.

### Required Multimedia Courses

ART	131	Design I	3
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	114	Adobe InDesign and/or	
MGD	113	QuarkXpress	3
MGD	118	Digital Color Theory	3
MGD	121	Painter for Digital Media	3
MGD	202	P.O.S. Package Design	3
MGD	211	Adobe Photoshop II	3
MGD	212	Adobe Illustrator 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

### Recommended General Education Courses

#### Humanities Category:

ART 121 Drawing I 3

#### Recommended General Education Courses

#### English/Speech Category:

THE 118 Acting Skills Trades & Business  
or

ENG 131 Technical Writing 3

## AAS Degree

### Emphasis in Video Production

The video production emphasis within the Multimedia Graphic Design Department prepares you for work in video and DVD production. You are exposed to many exciting aspects of video production such as sound and digital editing, as well as motion graphics.



<b>Required Multimedia Courses</b>			
MGD	101	Intro to Computers for Graphics	3
MGD	102	Intro to Multimedia	3
MGD	111	Adobe Photoshop I	3
MGD	112	Adobe Illustrator I	3
MGD	104	Videography	3
MGD	143	Motion Graphic Design I: Flash	3
MGD	163	Sound Design I	3
MGD	164	Digital Video Editing I	3
MGD	165	After Effects I	3
MGD	266	DVD Authoring	3
MGD	263	Sound Design II	3
MGD	264	Digital Video Editing II	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**

**Recommended General Education Courses English/Speech Category:**

THE	118	Acting Skills Trades & Business	
		or	
ENG	131	Technical Writing	3

## AAS Degree

**Emphasis in Motion Graphics Animation**

The motion graphics animation emphasis within the Multimedia Graphic Design Department prepares you to work in digital 2D animation and 3D animation modeling environments. You will combine traditional artistic skills of drawing, design, and sculpture with a video, lighting, and special effects training. By combining these skills with you expertise in object modeling and computer-generated animation techniques, you will produce complex 2D and 3D animation projects.

**Required Multimedia Courses**

ART	132	3D Design	3
ART	156	Figure Drawing I	3
MGD	111	Adobe Photoshop I	3
MGD	112	Adobe Illustrator I	3
MGD	143	Motion Graphic Design I:Flash	3
MGD	152	Digital Animatics	3
MGD	153	3D Animation I	3
MGD	119	Maya I	3
MGD	122	Sculpting for Digital Media	3
MGD	243	Motion Graphic Design II:Flash	
MGD	253	3D Animation II	3
MGD	219	Maya II	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**

**Recommended General Education Courses Humanities Category:**

ART	121	Drawing I	3
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**Recommended General Education Courses English/Speech Category:**

THE	118	Acting Skills Trades & Business	
		or	
ENG	131	Technical Writing	3

## AAS Degree

**Emphasis in Game Design/Development**

(Pending Approval)

The game design and development AAS degree prepares you for a broad range of careers in the gaming industry or as an independent game developer. You will develop 2D and 3D digital modeling, digital animation, and programming skills using an industry standard gaming engine. Course electives allow you to gain experience with digital sound, 2D game development, and additional 3D modeling.

MGD	111	Adobe Photoshop I	
		-or CWB 162 Intro to Image Editing	3
MGD	112	Adobe Illustrator I	
MGD	152	Digital Animatics	3
MGD	153	3D Animation: Cinema 4D	3
MGD	163	Sound Design I	3
MGD	119	Maya I	3
CSC	119	Introduction to Programming	3
		-and- CSC 154 Introduction to MS Visual Basic. Net	
		-or- CSC 160 Computer Science I: C++	4
CWB	245	Complete Web Animation:Flash	
		-or- MGD143 Motion Graphics Design:Flash	3
CSC	126	Game Design and Development	
		-or- MGD 167 Game Design I	3
CSC	127*	Game Programming I: Torque Engine	3
CSC	227*	Game Programming II: Torque Engine	3
CSC	228*	Game Scripting	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 64-67**

**Recommended General Education Courses  
Humanities Category:**

ART 121	Drawing I	
	or	
MUS 105	Introduction to Computer/Electronic Music	
	or	
ART 132	3D Design	3

**Recommended General Education Courses  
English/Speech Category:**

THE 118	Acting Skills Trades & Business	
	or	
ENG 131	Technical Writing	3

**AAS Degree**

**Emphasis in Web Design and Development**  
(Pending Approval)

The web design and development AAS degree prepares you for a broad range of careers in the Web industry. You will evaluate the look and feel of sites and learn HTML/XML editors as well as advanced Web production techniques. You will be exposed to all stages of production. Motion graphic techniques, video-editing, and sound design used in Web development also will be addressed.

MGD 101	Intro to Computers for Graphics	3
MGD 103	Production Design	3
	--and/or MGD104 Videography	
MGD 111	Adobe Photoshop I	
	or	
CWB 162	Intro to Image Editing	3
MGD 112	Adobe Illustrator I	3
CWB 110	Complete Web Authoring (HTML)	3
MGD 141	Web Design I	
	or	
CWB 130	Web Editing Tools: Dreamweaver	3
MGD 241	Web Design II: Dreamweaver	3
MGD 143	Motion Graphic Design I: Flash	
	or	
CWB 245	Complete Web Animation: Flash	3
MGD 243	Motion Graphic Design II	3
CWB 205	Complete Web Scripting	3
MGD 163	Sound Design I	3
MGD 164	Digital Video Editing I	3
MGD 259	Management and Production	
	or	
CWB 280	Internship	3

**Faculty Advisor Approved Electives from MGD 6**

**Required General Education Courses 15**  
See page 34.

**Total Required Credits 60**

**Recommended General Education Courses to satisfy  
Humanities Category:**

ART 121	Drawing I	
	or	
MUS 105	Introduction to Computer/Electronic Music	
	or	
ART 132	3D Design	3

**Recommended General Education Courses to satisfy  
English/Speech Category:**

THE 118	Acting Skills Trades & Business	
	or	
ENG 131	Technical Writing	3

**AAS Degree**

**Emphasis in Professional Photography--Traditional  
Film**

(Pending Approval)

The professional photography—traditional film AAS degree prepares you for a career as a professional film photographer. You will learn traditional film photography techniques in print production, lighting, equipment, and business management. History and photographic film theory are covered as well. You will need a 35mm SLR film camera.

ART 113	History of Photography	3
ART 138	Photography I (traditional film)	3
ART 139	Photography II (traditional film)	3
ART 140	Color Photography I (traditional film)	3
PHO 176	Special Topic: Close-up and Macro Photography	3
PHO 260	Event and Wedding Photography	3
ART 251	Portrait Photography	3
ART 252	Landscape Photography	3
PHO 204	Commercial Studio Lighting	3
PHO 277	Special Topic: Business of Photography	3
JOU 121	Photojournalism	3
PHO 276	Special Topic: Mastering Black and White Outdoor Photography	3
PHO 276	Special Topic: Special Effects:Darkroom	3

**Faculty Advisor Approved Electives from  
ART/PHO/MGD 6**

**Required General Education Courses 15**  
See page 34.

**Total Required Credits 60**

**Recommended General Education Courses to satisfy  
English/Speech Category:**

THE 118	Acting Skills Trades & Business	3
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## AAS Degree

### Emphasis in

#### Professional Photography-- Digital Photography

(Pending Approval)

The professional photography—digital photography AAS degree prepares you for a career as a professional photographer in a digital work environment. You will learn techniques in digital photography such as camera techniques, digital printing production, lighting, equipment, and business management. History and digital photography theory are covered as well. You will need a digital SLR camera or a digital camera with manual settings.

ART	113	History of Photography	3
ART	143	Digital Photography I	3
ART	243	Digital Photography II	3
MGD	111	Photoshop I	
PHO	176	Special Topic: Close-up and Macro Photography or	
PHO	260	Event and Wedding Photography	3
ART	248	Digital Darkroom I	3
ART	251	Portrait Photography	3
ART	252	Landscape Photography	3
PHO	204	Commercial Studio Lighting	3
PHO	277	Special Topic: Business of Photography	3
MGD	121	Painter for Digital Media	3
JOU	121	Photojournalism	
PHO	277	Special Topic: Professional Digital Workflow	3
<b>Faculty Advisor Approved Electives from ART/PHO/MGD</b>			<b>6</b>
<b>Required General Education Courses</b> See page 34.			<b>15</b>
<b>Total Required Credits</b>			<b>60</b>
<b>Recommended General Education Courses to satisfy English/Speech Category:</b>			
THE	118	Acting Skills Trades & Business	3

## AAS Degree

### Emphasis in

#### Professional Photography--Traditional Film and Digital Photography

(Pending Approval)

The professional photography—traditional film and digital photography AAS degree prepares you for a career as a professional photographer blending both film and digital skills. You will learn techniques in both film and digital photography, such as camera techniques, print production, lighting, equipment, and business management. History and photographic theory are covered as well. You will need both a traditional film SLR camera and a digital SLR camera or a digital camera with manual settings.

ART	113	History of Photography	3
ART	138	Photography I (Film)	3
ART	139	Photography II (Film)	3
ART	143	Digital Photography I	3
ART	243	Digital Photography II	3
MGD	111	Photoshop I	3
ART	248	Digital Darkroom I	3
ART	251	Portrait Photography	3
ART	252	Landscape Photography --and/or PHO 260 Event and Wedding Photography	3
ART	253	Studio Photography	3
PHO	277	Special Topic: Business of Photography	3
MGD	121	Painter for Digital Media	3
PHO	277	Special Topic: Professional Digital Workflow	3
<b>Faculty Advisor Approved Electives from ART/PHO/MGD</b>			<b>6</b>
<b>Required General Education Courses</b> See page 34.			<b>15</b>
<b>Total Required Credits</b>			<b>60</b>
<b>Recommended General Education Courses to satisfy English/Speech Category:</b>			
THE	118	Acting Skills Trades & Business	3

## AGS Degree

### Emphasis in Graphic Design & Print Production

Articulation with Metropolitan State College of Denver up to 60 semester hours of the associate of general studies degree will be accepted toward MSCD's bachelor's degree in technical communication.

The Graphic Design/Print Production emphasis within the Multimedia Graphic Design Department prepares you for work in the traditional graphic design and printing industries. You will use the computer to design for electronic production output. In addition, you will learn design techniques for packaging and point of sale and other forms of print media. Printing press technology is also addressed.

#### Required Multimedia Courses

MGD 101	Introduction 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
	--and/or MGD 114 Adobe InDesign	
MGD 202	P.O.P. Package Design	3
MGD 211	Adobe Photoshop II	3
MGD 213	Electronic PrePress	3
MGD 259	Management and Production	3

**Faculty Advisor Approved Electives from MGD 3**

**Required General Education Courses 34-40**

See page 34.

**Total Required Credits 60**

## AGS Degree

### Emphasis in Video Production

Articulation with Metropolitan State College of Denver up to 60 semester hours of the associate of general studies degree will be accepted toward MSCD's bachelor's degree in technical communication.

The video production emphasis within the Multimedia Graphic Design Department prepares you for work in video and DVD production. You are exposed to many exciting aspects of video production, such as sound and digital editing, as well as motion graphics.

#### Required Multimedia Courses

MGD 111	Adobe Photoshop I	3
MGD 112	Adobe Illustrator I	3
MGD 104	Videography I	3
MGD 143	Motion Graphic Design I: Flash	3
MGD 163	Sound Design I	3
MGD 164	Digital Video Editing I	3
MGD 165	AfterEffects I	3
MGD 259	Management and Production	3

**Faculty Advisor Approved Electives from MGD 3**

**Required General Education Courses 34-40**

See page 31.

**Total Required Credits 60**

## AGS Degree

### Emphasis in Motion Graphics Animation

Articulation with Metropolitan State College of Denver of up to 60 semester hours of the associate of general studies degree will be accepted toward MSCD's bachelor's degree in technical communication.

The motion graphics animation emphasis within the Multimedia Graphic Design Department prepares you to work in digital 3D animation modeling environments. You will combine traditional artistic skills of drawing, design, and sculpture with video, lighting, and special effects training. You will blend these skills with your expertise in object modeling and computer-generated animation techniques to produce complex 3D animation projects.

#### Required Multimedia Courses

ART 132	3D Design	3
ART 156	Figure Drawing	3
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 119	Maya I	3
MGD 219	Maya II	3

**Required General Education Courses** 34-40

See page 31

**Total Required Credits** 60

## Certificate

### Emphasis in Graphic Design/Print Production

The graphic design/print production emphasis prepares you for careers in printing, graphic design, and prepress production. 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

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 114	Adobe InDesign	
	--and/or MGD 113 QuarkExpress	3
MGD 118	Digital Color Theory	3
MGD 121	Painter for Digital Media	3
MGD 202	P.O.P. Package Design	3
MGD 211	Adobe Photoshop II	3
MGD 213	Electronic PrePress	3

**Faculty Advisor Approved Electives from MGD** 3

**Total Required Credits** 30

## Certificate

### Emphasis in Video Production

The video production emphasis within the Multimedia Graphic Design Department prepares you for work in video and DVD production. You will be exposed to many exciting aspects of video production, such as sound and digital editing, as well as motion graphics.

#### Required Multimedia Courses

MGD 101	Intro. to Computer for Graphics	3
MGD 101	Intro. to Computers for Graphics	
	or	
MGD 102	Intro. to Multimedia	3
MGD 111	Adobe Photoshop I	3
MGD 112	Adobe Illustrator I	3
MGD 104	Videography	3
MGD 163	Sound Design I	3
MGD 164	Digital Video Editing I:	
	Final Cut Pro Studio	3
MGD 165	After Effects I	3
MGD 264	Digital Video Editing II:	
	Final Cut Pro Studio	3
MGD 259	Management and Production	3

**Faculty Advisor Approved Electives from MGD** 3

**Total Required Credits** 30

## Certificate

### Emphasis in Motion Graphics Animation

The motion graphics animation emphasis prepares you for 3D animation production work. You will develop skills for entry-level jobs in the fields of TV and movie production as well as presentation design and multimedia design.

#### Required Multimedia Courses

MGD 111	Adobe Photoshop I	3
MGD 112	Adobe Illustrator I	3
MGD 152	Digital Animatics	3
MGD 153	3D Animation I: Maxon Cinema 4D	3
MGD 119	Maya I	3
MGD 165	Adobe After Effects I	3
MGD 253	3D Animation II: Maxon Cinema 4D	3
MGD 219	Maya II	3
ART 121	Drawing I	3
ART 156	Figure Drawing	
	or	
ART 132	3D Design	3

**Total Required Credits** 30

## Certificate

### Emphasis in Game Art

(Pending Approval)

The game design certificate prepares you for entry-level art positions in the gaming industry. Common projects are the creation of character models and textures from concept art, storyboarding, and animating in 2D or 3D. You will also have the opportunity to work with an industry standard gaming engine. Course electives allow you to gain experience with game programming and sound design.

MGD 111	Adobe Photoshop I	
	-or CWB 162 Intro to Image Editing	3
MGD 112	Adobe Illustrator I	3
MGD 167	Game Design I	
	or	
CSC 126	Game Design and Development	3
MGD 152	Digital Animatics	3
MGD 143	Motion Graphics Design-Flash	
	or	
CWB 245	Complete Web Animation: Flash	3
MGD 153	3D Animation: Cinema 4D	3
MGD 119	Maya I	3
MGD 267	Game Design II	3

**Faculty Advisor Approved Electives from MGD/CSC** 6

**Total Required Credits** 30

# Certificate

## Emphasis in Web Design

The Web design express certificate within the Multimedia Graphic Design Department prepares you for work in various levels of Web site production. You will learn the importance of page layout, user interface, and design, as well as site design.

### Required Multimedia Courses

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
<b>Total Required Credits</b>		<b>15</b>

# Certificate

## Emphasis in Advanced Web Design

You will evaluate the look and feel of sites, learn HTML and HTML editors, and learn advanced Web production techniques, such as adding sound, video, or animation to a Web site. You are exposed to pre-production, production, and post-production concepts. Motion graphic techniques, video-editing, and sound design used in Web development will be addressed.

### Required Multimedia Courses

MGD 104	Videography	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 259	Management and Production	3
<b>Total Required Credits</b>		<b>15</b>

# Certificate

## Emphasis in Professional Photography—Traditional Film

(Pending Approval)

You will learn traditional film photography techniques in photographic darkroom production, lighting, equipment, and business management. History and photographic film theory are covered as well. You will need a 35mm SLR film camera.

ART 113	History of Photography	3
ART 138	Photography I (traditional film)	3
ART 139	Photography II (traditional film)	3
ART 140	Color Photography I (traditional film)	3
PHO 176	Special Topic: Close-up and Macro Photography	3
PHO 260	Event and Wedding Photography -or- ART 251 Portrait Photography	3
PHO 204	Commercial Studio Lighting	3
PHO 277	Special Topic: Business of Photography	3

JOU 121	Photojournalism	3
PHO 276	Special Topic: Mastering Black and White Outdoor Photography	3
or		
PHO 276	Special Topic: Special Effects:Darkroom	3
<b>Total Required Credits</b>		<b>30</b>

# Certificate

## Emphasis in Professional Photography—Digital Photography

(Pending Approval)

You will learn techniques in digital photography such as camera techniques, digital printing production, lighting, equipment, and business management. History and digital photography theory are covered as well. You will need a digital SLR camera or a digital camera with manual settings.

ART 113	History of Photography	3
ART 143	Digital Photography I	3
ART 243	Digital Photography II	3
MGD 111	Photoshop I	3
PHO 260	Event and Wedding Photography	3
ART 248	Digital Darkroom I	3
ART 251	Portrait Photography	3
PHO 204	Commercial Studio Lighting	3
PHO 277	Special Topic: Business of Photography	3
PHO 277	Special Topic: Professional Digital Workflow	3
<b>Total Required Credits</b>		<b>30</b>

# Certificate

## Emphasis in Professional Photography—Traditional Film and Digital Photography

(Pending Approval)

You will learn techniques in both film and digital photography such as camera techniques, print production, lighting, equipment, and business management. History and photographic theory are covered as well. You will need both a traditional film SLR camera and a digital SLR camera or a digital camera with manual settings.

ART 113	History of Photography	3
ART 138	Photography I (Film)	3
ART 143	Digital Photography I	3
MGD 111	Photoshop I	3
ART 248	Digital Darkroom I	3
ART 251	Portrait Photography	3
PHO 260	Event and Wedding Photography	3
PHO 204	Commercial Studio Lighting	3
PHO 277	Special Topic: Business of Photography	3

PHO 277 Special Topic: Professional Digital Workflow	3
<b>Total Required Credits</b>	<b>30</b>

The Multimedia Graphic Design/Photography Department uses state-of-the-art equipment and has four classroom instructional labs with 20 - 24 workstations in each, one for each student and a teaching machine. The open computer lab allows you to work outside the classroom. The machines are the fastest available. Currently, the labs are equipped with both Dell PC computers and Macintosh G4s and G5s. Peripheral devices are also available, including color output, B&W output, flatbed scanners, slide scanner, 3D digital scanner, and video capture stations.

The Multimedia Graphic Design Department also has two darkrooms for the use by photography and MGD students. The department has several film, digital, and digital video cameras which you may use on a 48-hour check-out basis.

# Outdoor Recreation

## Degree Associate of Arts

### AA Degree

#### Emphasis in Outdoor Recreation

The completion of the following recommended course of study is appropriate if you intend to transfer to the University of Northern Colorado or Western State College in order to complete a bachelor's degree in recreation. Please consult with your academic advisor and the Outdoor Recreation faculty advisor (303.914.6238) before beginning this program.

The associate of arts degree with an emphasis in outdoor recreation is also designed as a stand-alone program to allow you to enter a career in the outdoor industry as an outdoor educator, recreation specialist, two of several possibilities.

Required Major Courses	Credits
PER 128 Intro to Recreation	2
PER 252 Principles of Outdoor Recreation	3
PER 253 Outdoor Recreation Leadership	2
PED 165 Wilderness Survival Skills	3
PED 237 Paddle Sports	2
CIS 118 Intro to PC Applications	3
HWE 129 Wilderness First Responder	
or	
HPR 125 Outdoor Emergency Care	4
<b>Additional General Education Courses</b>	<b>35 credits</b>
See page 25	
<b>Approved Electives</b>	<b>6</b>
See page 26	
<b>Total Credits</b>	<b>60</b>

# Outdoor Recreation Leadership

## Certificate

### Outdoor Recreation Leadership

#### Emphases:

**Winter Skills Specialist**

**Water-based Skills Specialist**

**Mountaineering Skills Specialist**

**Outdoor Recreation Generalist**

## 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 employ 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 skills, students will prepare to be future outdoor trip leaders by examining and developing the interpersonal skills needed for positions in outdoor leadership.

**In order to complete the Outdoor Recreation Leadership Certificate, you 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 128 Intro to Recreation	2
PER 252 Principles of Outdoor Recreation	3
PER 253 Outdoor Leadership	2
HPR 125 Outdoor Emergency Care and CPR or	
HWE 129 Wilderness First Responder	4
<b>Total credits</b>	<b>20</b>

## Emphasis:

### Winter Skills Specialist

(Select 7 credits from these courses.)

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

## Emphasis:

### Water-based Skills Specialist

(Select 7 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
<b>Total Credits (includes required courses)</b>		<b>27</b>

## Emphasis:

### Mountaineering Skills Specialist

(Select 10 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 XXX	Snow and Glacier Climbing	3
PED 157	Basic Mountaineering	3
PED 159	Colorado's Fourteeners	2
PED 166	Winter Wilderness Survival Skills	1
PER 256	Mountaineering Teaching Concepts	3
PED 280	Internship	3
<b>Total Credits (includes required courses)</b>		<b>30</b>

## Emphasis:

### Outdoor Recreation Generalist

You can design your 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. By completing this program emphasis, you can expect a well-rounded outdoor recreation experience and training in various aspects of outdoor recreation and leadership competencies.

**Total Credits (includes required courses) 32**

# Park Ranger Technology

## Certificates:

Law Enforcement  
Public Safety  
Outdoor Recreation  
Resource Interpretation  
Concentration

The Park Ranger Technology Program provides training for those 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.

Most hiring agencies have three basic requirements for full-time professional park rangers: 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 are designed around all agency requirements and allow you 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 professional park rangers. In addition to the PRT Certificate of Concentration, the PRT program advisor will help you design an appropriate two-year associate's degree plan that can be transferred to a four-year institution.
- Students seeking part-time or full-time seasonal employment as a park rangers 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 at **303.914.6238**.



## Certificate

### Law Enforcement

The Law Enforcement Certificate is for those students wishing to increase their job opportunities by becoming qualified for full law enforcement responsibilities in the field.

Required Courses		Credits
CRJ	XXX Post Law Enforcement Academy	37
PRA	102 Introduction to Park Ranger Technology	3
PRA	280 Park Ranger Internship	3
<b>Total Credits</b>		<b>43</b>

## Certificate

### Public Safety

The Public Safety Certificate provides necessary training for those students wanting to work for agencies providing fire, EMS, rescue, and/or 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 Technical Rope Rescue	4
FST	152 Intro to Wildland Firefighting	3
FST	236 Fire Operations in the Urban Interface	2
<b>Total Credits</b>		<b>25</b>

## 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
PER	128 Introduction to Recreation	2
PER	252 Principles of Outdoor Recreation	3
PRA	280 Park Ranger Internship	3
<b>Faculty advisor-approved electives</b>		<b>13</b>

### Approved Elective Courses

Choose 13 credits from the following courses:

HPR	125 Outdoor Emergency Care, or	4
HWE	129 Wilderness First Responder	4
GIS	101 Geographic Information Systems	3

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	157 Basic Mountaineering	3
PED	159 Colorado Fourteeners	2
PER	160 Wilderness Ethics	3
PER	161 Backcountry Cooking	1
PED	163 Orienteering/Routefinding	3
PED	162 Map and Compass for the Outdoors	3
PED	165 Wilderness Survival Skills	2
PED	166 Winter Survival Skills	1
PER	168 Outdoor Equipment and Facilities	3
PED	207 Intermediate Whitewater Canoeing	1
PED	237 Paddle Sports	2
PER	153 Whitewater Rafting Guide	2
<b>Total Credits</b>		<b>30</b>

## Certificate

### Resource Interpretation

The Resource Interpretation Certificate is for those working with resource interpretation, naturalists, and/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
<b>Total Credits</b>		<b>15</b>

## Photography (PHO)

Photography classes reside under both the ART and PHO prefixes, and classes are held in the Multimedia Graphic Design Department. A professional photographer associate of applied science degree and certificate can be found in Multimedia Graphic Design. See pages 96-103 for details.

# Physical Education/ Outdoor Education

## Degree Associate of Arts

### AA Degree

#### Emphasis in Outdoor Recreation

The completion of the following recommended course of study is appropriate if you intend to transfer to the University of Northern Colorado in order to complete a bachelor's degree in physical education with a minor in outdoor/adventure education. Please consult an academic advisor and the Outdoor Physical Education faculty advisor (303.914.6238) before beginning this program.

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

Courses	Credits
PED 150 Rock Climbing I	2
PED 151 Rock Climbing II or	
PER 252 Principles of Outdoor Recreation	3
PED 162 Map and Compass	3
PED 165 Wilderness Survival Skills	3
PED 166 Winter Wilderness Survival Skills	1
PED 237 Paddle Sports	2
PER 253 Outdoor Leadership	2
<b>Additional General Education Courses</b> See page 25.	<b>38</b>
<b>Approved Electives</b> See page 26.	<b>7</b>
<b>Total Credits</b>	<b>60</b>

Information: 303.914.6238 or email [bill.haas@rrcc.edu](mailto:bill.haas@rrcc.edu)

# 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 already have enjoyed careers as allied health personnel. A primary mission of the RRCC 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 Web site at [www.rrcc.edu/pa](http://www.rrcc.edu/pa). A supplemental application is also required which is also outlined at the Web site. A personal interview is required prior to matriculation. The annual application deadline is December 19 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 RRCC. 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.rrcc.edu/pa](http://www.rrcc.edu/pa), or by calling 303.914.6386.

If you are selected for the program, you 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, you

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/paramedic, 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 \$280.40/credit for Colorado residents and \$397.35/credit for nonresidents. Student fees average \$386.30 per semester for all students. Tuition and fees are subject to change.

Once accepted into the program, you must complete a criminal background check using American DataBank's online background check procedures at [www.healthcareex.com](http://www.healthcareex.com). The cost is currently \$59.00.

Prior to clinical rotations, you 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
<b>Total first Year Credits</b>		<b>42</b>

#### 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	
<b>Total Credits</b>	<b>78</b>

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

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 requirements		
<b>Additional General Education Courses</b>		<b>27</b>
See page 27.		
<b>Approved electives</b>		<b>3</b>
See page 28.		
<b>Total Credits</b>		<b>60</b>

programs

# 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 the state plumbing exams. Consult with a construction technology advisor at **303.914.6511**.

## Degree

### Associate of Applied Science

Plumbing  
Plumber/Pipe fitter

## Certificates:

- Basic Plumbing Skills
- 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 Courses	Credits
Residential Plumbing Certificate	31
PLU Electives ( approved by an advisor)	4
<b>General Education Requirements</b>	<b>15</b>
<b>Construction Technology Requirements</b> See page 66.	<b>10</b>
<b>Total Credits</b>	<b>61</b>

## AAS Degree

### Plumber/Pipefitter

Through a partnership with the United Association of Plumbing (UAP), construction technology offers an associate of applied science degree to those who have completed their apprenticeships.

Required Courses	Credits
Credits from Articulated Apprenticeship Program	43
<b>General Education Requirements</b> See page 66.	<b>15</b>
Computer Skills	2
<b>Total Credits</b>	<b>60</b>

## Certificate

### Basic Plumbing Skills Required Major Courses

Credits			
PLU 100	Introduction to Plumbing		4
PLU 101	Piping Skills		4
PLU 104	Plumbing Service		4
PLU 130	Basic Drain, Waste and Vent		4
OSH 127	10-HR Construction Industry Standards		1
<b>Total Credits</b>			<b>17</b>

## Certificate

### Colorado Plumbing Code Test Preparation Contact a faculty advisor to plan your course of study. 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
<b>Total Credits</b>			<b>12</b>

## Certificate

### Residential Plumbing Pre-requisite: Basic Plumbing Skills Certificate 17

Required Courses	Credits	
CON 230	Blueprint Reading	4
PLU 120	Residential Plumbing	4
PLU 150	Code and Piping Calculations	2
PLU 207	International Plumbing Code	4
<b>Total Credits</b>		<b>31</b>

## Certificate

### Residential Plumbing and Heating

**Pre-requisite: Residential Plumbing Certificate 31**

Required Courses		Credits
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
<b>Total Credits</b>		<b>63</b>

## Certificate

### Journeyman-Level Plumbing

**Pre-requisite: Residential Plumbing Certificate 31**

Required Courses		Credits
CON XXX	CON Elective (approved by an advisor)	4
PLU XXX	Plumbing Elective (approved by an advisor)	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
<b>Total Credits</b>		<b>52</b>

## 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.

Courses		Credits
POS 105	Introduction to Political Science*	3
POS 111	American Government*	3
POS 205	International Relations*	3
POS 225	Comparative Government*	3
ECO 201	Principles of Macroeconomics*	3
HIS 201	U.S. History I* or	
HIS 202	U.S. History II*	3
HIS 247	Contemporary World History*	3

\*Fulfills General Education requirement

**Additional General Education Courses 29**  
See page 25.

**Approved Electives 10**  
See page 26.

**Total Credits 60**

# Power Plant Technology

## Degree Associate of Applied Science

### Power Plant Technology

(Awarded through Bismarck State College)

The field of power plant technology offers one of the best paying and most interesting careers for the technician/operator. Job demand is strong in the power plant technology field.

Graduates are often hired for work in other operations besides power plants because of their theoretical and practical training in mechanical and electrical technology. Possible opportunities exist in other industrial process operations, research and development, or sales and service fields.

RRCC offers a unique opportunity for Colorado-based students to earn a highly sought after degree from the premier Power Plant Technology Program in the United States. Through a cooperative agreement between RRCC and Bismarck State College, you will complete your general education credits and basic electrical fundamentals credits at the RRCC campus and enroll for online courses from Bismarck State College for the specialized power plant technology courses.

**Information: 303.914.6342**

**chuck.beck@rrcc.edu**

**www.rrcc.edu/isod**

This program's curriculum is under development and revision at the time this catalog was printed.

# Pre-Nursing

Admission and course requirements vary among nursing programs; therefore, you are encouraged to work closely with an advisor from the college or university you plan to attend to earn your RN degree.

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 RRCC does not guarantee acceptance into a nursing program.

**Information: 303.894.2430 or [www.dora.state.co.us/nursing](http://www.dora.state.co.us/nursing)**

# Precision Machining Technology

(In cooperation with and taught at Warren Tech)

This program is designed to develop the skills necessary for entry-level employment in the machining industry. Entry-level skills in fabrication and plastic parts that meet industrial standards will be taught (pending approval).

## Degree Associate of Applied Science, AAS

### Precision Machining

### Certificate

Lathe Operator

Mill Operator

CNC Lathe Operator

CNC Mill Operator

Required Courses		Credits
MAC 101	Introduction to Machine Shop	3
MAC 102	Blueprint Reading	3
MAC 110	Introduction to Engine Lathe	3
MAC 111	Intermediate Engine Lathe	3
MAC 120	Introduction to Milling Machine	3
MAC 121	Intermediate Milling Machine	3
MAC 201	Introduction to CNC Turning Operations	3
MAC 205	Introduction to CNC Milling Operations	3
MAC 250	Advanced Inspection Techniques	3
MAC 252	Practical Metallurgy	3
<b>Choose 15 credits from any of the following courses:</b>		
MAC 123	Horizontal Mill Set Up & Operations Description	3
MAC 130	Conventional Lathe Operations	4
MAC 141	Advanced Machining Operations	4
MAC 202	CNC Turning Operations II	3
MAC 206	CNC Milling Operations II	3
MAC 221	Surface Grinder Setups and Operations	3
MAC 223	Tool & Cutter Grinder	3
MAC 240	CAD/CAM 2D	3
MAC 245	CADCAM 3D	3
MAC 258	Interpreting Engineering Drawings	3
TEC 205	Geometric Dimensioning and Tolerancing	3
<b>General Education Requirements</b>		
ENG 131	Technical Writing	3
MAT 107	Career Math (or higher)	3

<b>Credit from any two of the following three areas:</b>	<b>9</b>
Arts and Humanities (ART, FRE, GER, HUM, LIT, MUS, PHI, SPE, SPA, THE)	
Science (AST, BIO, CHE, GEY, PHY)	
Social Science (ANT, ECO, HIS, POS, PSY, SOC)	
<b>Total Credits</b>	<b>60</b>

### Certificate

Lathe Operator

Course

Course	Credits	
MAC 101	Introduction to Machine Shop	3
MAC 102	Blueprint Reading	3
MAC 110	Introduction to Engine Lathe	3
MAC 111	Intermediate Engine Lathe	3
MAC 112	Advanced Engine Lathe	3
<b>Total Credits</b>	<b>15</b>	

### Certificate

Mill Operator

Course

Course	Credits	
MAC 101	Introduction to Machine Shop	3
MAC 102	Blueprint Reading	3
MAC 120	Introduction to Milling Machine	3
MAC 121	Intermediate Milling Machine	3
MAC 122	Advanced Milling Machine Operations	3
<b>Total Credits</b>	<b>15</b>	

### Certificate

CNC Lathe Operator

Course

Course	Credits	
MAC 201	Introduction to CNC Turning Operations	3
MAC 202	CNC Turning Operations II	3
MAC 240	CAD/CAM 2D	3
<b>Total Credits</b>	<b>9</b>	

### Certificate

CNC Mill Operator

Course

Course	Credits	
MAC 205	Introduction to CNC Milling Operations	3
MAC 206	CNC Milling Operations II	3
MAC 240	CAD/CAM 2D	3
<b>Total Credits</b>	<b>9</b>	

# Process Technology

## Degree Associate of Applied Science, AAS

Process Technology

### Certificate

Introduction to Process Equipment \*

Introduction to Process Instrumentation \*

Introduction to Process Safety\*

Introduction to Process Technology Operations\*

Introduction to Process Technology Quality Management\*

\*Pending approval

The Process Technology Program will prepare you for entry-level employment as a process operator or technician, a key member of a team of people responsible for planning, analyzing, and controlling the production of electrical energy, oil and gas energy resources, alternate energy production, food and beverage, and consumer products.

This program will provide you with an understanding of process equipment and its principles of operation and control. As a graduate, you will understand the technical aspects of the work, the responsibilities of the work, and the importance of safety in this shift-oriented position.

The industries interested in the graduates from the program include, but are not limited, to oil exploration and production, mining and mineral processing, petroleum product manufacturing, pharmaceutical production, food and beverage, electric power generation, drinking water treatment, and wastewater treatment.

Information: 303.914.6342

chuck.beck@rrcc.edu

www.rrcc.edu/isod

Required Courses	Credits
PRO 100 Introduction to Process Technology	3
PRO 110 Safety, Health and Environment	3
PRO 120 Process Technology I: Equipment	4
PRO 130 Instrumentation	3
PRO 210 Process Technology II: Systems	4
PRO 220 Process Technology III: Operations	4
PRO 230 Quality in Process Technology	3
PRO 240 Process Troubleshooting	4
PRO 280 Internship	3

Other Required Courses (area of emphasis) 6 – 13

### General Education Courses Required

CIS 118	Introduction to PC Applications	3
BUS 275	Special Topics: Business Survival Skills	3
ENG 121	English Composition I	3
MAT 106	Survey of Algebra	4
CHE 101	Introduction to Chemistry w/lab	5
PHY 105	Conceptual Physics	4
SOC 101	Introduction to Sociology	
	or	
PSY 101	General Psychology I	3
<b>Total Credits</b>		<b>62 - 69</b>

### Area of Emphasis:

#### Oil and Gas Production

PRO 250	Oil and Gas Production I	3
PRO 255	Oil and Gas Production II	3

### Area of Emphasis:

#### Electrical Power Production

PRO XXX	Electrical Power Production I	4
PRO XXX	Electrical Power Production II	4

### Area of Emphasis:

#### Wastewater Treatment

WQM 106	Mechanical Physical Treatment	3
WQM 117	Biological Treatment	3
WQM 119	Wastewater Collection Systems	3
WQM 216	Biological and Bacteriological Water Quality Analysis	4

### Area of Emphasis:

#### Petroleum Product Manufacturing

PRO XXX	Petroleum Product Manufacturing I	4
PRO XXX	Petroleum Product Manufacturing II	4

### Area of Emphasis:

#### Food and Beverage

PRO XXX	Food and Beverage I	4
PRO XXX	Food and Beverage II	4



## Process Technology

### Certificates:

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

### Certificate

#### Introduction to Process Equipment

Required Courses	Credits
PRO 100 Introduction to Process Technology	3
PRO 110 Safety, Health, and Environment	3
PRO 120 Process Technology I: Equipment	4
<b>Total Credits</b>	<b>10</b>

### Certificate

#### Introduction to Process Plant Instrumentation

Required Courses	Credits
PRO 110 Safety, Health, and Environment	3
PRO 120 Process Technology I: Equipment	4
PRO 130 Instrumentation	3
<b>Total Credits</b>	<b>13</b>

### Certificate

#### Introduction to Process Plant Safety

Required Courses	Credits
PRO 100 Introduction to Process Technology	3
PRO 110 Safety, Health, and Environment	3
<b>Total Credits</b>	<b>6</b>

### Certificate

#### Introduction to Process Plant Operations

Required Courses	Credits
PRO 110 Safety, Health, and Environment	3
PRO 120 Process Technology I: Equipment	4
PRO 210 Process Technology II: Systems	4
PRO 220 Process Technology III: Operations	4
<b>Total Credits</b>	<b>15</b>

## Certificate

### Introduction to Process Plant Quality Management

Required Courses	Credits
PRO 110 Safety, Health, and Environment	3
PRO 230 Quality in Process Technology	3
CIS 118 Introduction to PC Applications	3
BUS 275 Special Topics: Business Survival Skills	3

**Total Credits** 12

## 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. 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.

Consult with a faculty advisor before beginning any program of study.

Courses	Credits
PSY 101 General Psychology I *	3
PSY 102 General Psychology II *	3
<b>Choose one of following advanced classes</b>	
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.

<b>Additional General Education Courses</b>	<b>29</b>
See page 25.	
<b>Approved Electives</b>	<b>22</b>
See page 26.	
<b>Total Credits</b>	<b>60</b>

# 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 students gain on-the-job experience, they may be allowed 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. Students interested in the program must complete 15 credits of general education course work, as well as HPR 178 and RTE 101, prior to applying. Please visit the RTE Web site or contact an advisor for more information on the application process. Information sessions for the Radiologic Technology Program are held regularly throughout the year.

\*\*Additional fees charged for RTE 181.

**Information: 303.914.6031 or 303.914.6032**

**Students must earn a C or better in all RTE courses to graduate.**

### Related Courses:

RTE 101 Introduction to Radiology 2

### Required Courses

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 Courses Required:

ENG 121 English Composition I or equivalent 3  
 Psychology/Sociology (PSY 235 Human Growth and Development recommended) 3  
 MAT 107 Career/Technical Math or higher 3  
 BIO 201 Human Anatomy and Physiology I 4  
 BIO 202 Human Anatomy and Physiology II 4  
 or  
 BIO 106 Basic Anatomy & Physiology 4  
 and  
 SPE 115 Public Speaking 3  
 or  
 COM 126 Communication in Healthcare 3  
**Total Credits 76**

## Real Estate and Small Business Start-Up

(See Business)

## Secondary Education

(See Teacher Education)

# 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.

Consult with a faculty advisor before beginning any program of study.

Courses	Credits
SOC 101 Introduction to Sociology I *	3
SOC 102 Introduction to Sociology II *	3
<b>Choose one from the following advanced classes</b>	
SOC 215 Contemporary Social Problems	3
SOC 237 Sociology of Death and Dying	3
*Fulfills General Education requirements.	
<b>Additional General Education Courses</b>	<b>32</b>
See page 25.	
<b>Approved Electives</b>	<b>19</b>
See page 26.	
<b>Total Credits</b>	<b>60</b>

# Speech and Communication

(See Communication and Speech)

# Teacher Education

## Degrees:

### Associate of Arts

Elementary Education  
Secondary Education

### Associate of Applied Science

Paraeducators

## Certificates:

Paraeducator  
Adult Education and  
Family Literacy (RRCC)

The AA degree requirements comply with the state-wide Elementary Teacher Education Articulation Agreement between RRCC and Colorado's public four-year colleges and universities. If you plan to transfer to a four-year college or university within Colorado to complete teacher certification, you must complete the 41 credits outlined below **with a C or better**. The remaining 19 credits needed for the AA degree are specific to individual transfer schools. **Before beginning to take classes, you must meet with RRCC's Teacher Education faculty advisor to plan a course of study and to examine the list of approved credits for each four-year institution in Colorado.**

Contact the teacher education faculty advisor before beginning either of these programs of study.

## Degree Associate of Arts

### Elementary Education

General Education Courses	36 credits
Communications	
ENG 121 English Composition I ( <u>B</u> or better)	3
ENG 122 English Composition II ( <u>B</u> or better)	3
Humanities	
LIT 115, LIT 201, or LIT 202	3
Mathematics	
MAT 155 Integrated Math 1	3
MAT 156 Integrated Math II	3
Social and Behavioral Sciences	
GEO 105 World Regional Geography	3
HIS 201 United States History I or	
HIS 202 United States History II	3
POS 111 American Government	3
Physical and Life Sciences	
SCI 155 Integrated Science	4

SCI 156	Integrated Science	4
<b>Statewide Education Requirements:</b>		
SPE 115	Public Speaking	3
PSY 238	Child Development	3
EDU 221	Introduction to Teacher Education	3
EDU 275	Special Topic: Field Based Experience (RRCC requirement)	1
<b>Total General and Statewide Education Credits</b>		<b>42</b>
<b>Transfer Institution Approved Credits</b>		<b>19</b>
(See an advisor for a list of approved credits for each institution.)		
<b>Total Credits</b>		<b>61</b>

## Degree Associate of Applied Science

### Paraeducator

The federal No Child Left Behind Act mandates paraeducator requirements. In order to be considered as a highly qualified paraeducator, you must meet one of the following requirements:

- complete successfully two years of post-secondary education OR
- demonstrate your knowledge through a formal academic assessment (the Work Keys test) of writing, reading, and mathematics skills.

RRCC has developed a Paraeducator Certificate and an education track to assist paraeducators in meeting these new requirements. If you plan to transfer to a four-year college or university to complete teacher certification, you should consider the Associate of Arts degree, Elementary Education.

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

<b>Required Courses</b>		<b>26 credits</b>
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	Special Topic: Field Based Experience	1
PSY 238	Child Development	3
SPE 115	Public Speaking	3
<b>Faculty advisor-approved electives</b>		<b>19</b>
<b>General Education Requirements</b>		<b>15</b>
See page 34.		
Select the general education core requirements and electives from the general education courses in the AA in elementary education.		
<b>Total Credits</b>		<b>60</b>

## Certificate

### Paraeducator

<b>Required Education Courses:</b>		<b>10 credits</b>
EDU 151	Literacy Interventions for Paraeducators	4
EDU 152	Math Interventions for Paraeducators	3
EDU 261	Teaching, Learning and Technology	3

<b>Recommended EDU or ECE credits*</b>	<b>11 credits</b>
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\*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 240	Teaching the Exceptional Learner	3
<b>Total Credits</b>		<b>21</b>

## Certificate

### Adult Education and Family Literacy

Completing this program allows adult and family literacy educators to meet the federal No Child Left Behind Act and the Colorado Department of Education requirements. Certification is earned through completion of the first four courses listed below. EDU 135 is optional for Adult Education and Family Literacy (AEFLA) program staff but is required for Even Start program staff.

#### Required Courses

EDU 131	Introduction to Adult Education	3
EDU 132	Planning, Organizing, and Delivering Adult Education Instruction	3
EDU 133	Adult Basic Education (ABE) and Adult Secondary Education (ASE/GED)	3
EDU 134	Teaching English as a Second Language (ESL) to Adult Learners	3
EDU 135	Family Literacy in Adult Education (Required for Even Start Program Staff)	3
<b>Total Credits</b>		<b>12</b>

# Theatre Arts

## Degree Associate of Arts

### 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. Consult with a faculty advisor before beginning any program of study.

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
Choose one course from the following for a total of 3 credits:	
THE 210 Singing for Actors	3
THE 215 Playwriting	3
or any DAN or THE course not listed above	
<b>Additional General Education Courses</b>	<b>38</b>
See page 25.	
<b>Total Credits</b>	<b>60</b>

## 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 degree in musical theatre performance. Consult with a faculty advisor before beginning any program of study.

Courses	Credits
THE 105 Introduction to Theatre Arts	3
THE 111 Acting I	3
THE 126 Auditioning for Musical Theatre	3
THE 131 Theatre Production I	
or	
THE 132 Theatre Production II	3
THE 135 Stage Makeup I	2
THE 136 Stage Makeup II	2
DAN 154 Dance and Stage Movement	3
THE 210 Singing for Actors	
or	
THE 240 Voice and Diction	3
DAN 224 Dance for Musical Theatre	3
or any DAN or THE course not listed here	
<b>Additional General Education Courses</b>	<b>35</b>
See page 25.	
<b>Total Credits</b>	<b>60</b>

## Certificate

### Costume Basics

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 a stitcher, wardrobe assistant, and costume shop assistant. Consult with the Director of Theatre Arts and Dance early in your college career to explore all your educational options. You must earn a C or better in all theatre courses to graduate.

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 I	
or	
THE 165 Costume and Fashion Industry	3
<b>Total Credits</b>	<b>14</b>

## Certificate

### Costume and Fashion

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 a stitcher, wardrobe assistant, costume shop assistant, tailor, makeup artist, window dresser, and other fashion and entertainment-related employment opportunities. This certificate also prepares you for pursuing an advanced degree in costume design and fashion. Consult with the Director of Theatre Arts and Dance early in your college career to explore all 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.

THE 105	Introduction to Theatre Arts	3
THE 104	Basic Costume and Apparel Construction	3
THE 109	Basics of Pattern Drafting	3
Choose one of the following		
THE 131, THE 132, THE 231, THE 232 - Theatre Production I, II, III, IV		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 260	Resume and Portfolio Development	1
THE 280	Employment Skills for Technical Theatre	1-3
<b>Total Credits</b>		<b>27-30</b>

## Certificate

### Stagehand Basics

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

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
<b>Total Credits</b>		<b>14</b>

## Certificate

### Stagecraft

This course of study is designed to train you for entry-level positions as a back-stage technician, member of a running crew, shop assistant, crew leader, properties assistant, and set-builder. Related professions are carpentry, cabinet-making, and careers requiring construction skills. Consult with the Director of Theatre Arts and Dance early in your college career to explore all your educational options. You must earn a C or better in all theatre courses to graduate.

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 or	
THE 109	Basics of Pattern Drafting	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
<b>Total Credits</b>		<b>30</b>

# Theatre Technology

## Degree Associate of Applied Science

This 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. Consult with the Director of Theatre Arts and Dance early in your college career to explore all 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 or	
THE 109 Basics of Pattern Drafting	3
THE 131, 132, 231, 232 - 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 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 or	
THE 237 History of Costumes and Fashion	3
THE 241 Stage Properties	3
THE 225 Sound Operation and Design	2
THE 260 Employment Skills for Technical Theatre	1
THE 280 Theatre Technology Internship - (Field Education) or	1-6
THE 118 Acting Skills: Trades/Business	
<b>General Education Requirements:</b> See page 34.	<b>15</b>
<b>Total Credits</b>	<b>60</b>

# 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 of all levels and areas of operations in the water and wastewater industry. You will be introduced to the many functions and career opportunities within the field. You can then establish an educational program that best fits your goals and interests.

If you are working in the industry, you 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 you all the instruction necessary to work in supervisory and management positions.  
**Information: 303.914.6325.**

# AAS Degree

## Water Quality Management

<b>Required Courses</b>		<b>Credits</b>
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
<b>General Education Requirements</b>		<b>15</b>
See page 34.		
<b>Faculty advisor-approved WQM electives</b>		<b>12</b>
<b>Required Electives</b>		
CIS 118	Introduction to PC Applications	3
GIS 101	Introduction To Geographic Information Systems	3
<b>Total Credits</b>		<b>67</b>

# Water Quality Certificates

If you successfully complete this program, you will possess the skills and knowledge for entry-level positions within the industry in your specific area of interest.

## Certificate

### Introduction to Water Treatment

<b>Required Courses</b>		<b>Credits</b>
WQM 100	Introduction to Water Quality Management	3
WQM 115	Water Sources and Supply	3
<b>Total Credits</b>		<b>6</b>

## Certificate

### Introduction to Wastewater Treatment

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

# Certificate

## Laboratory Analysis

<b>Required Courses</b>		<b>Credits</b>
WQM 119	Basic Water Analysis	4
WQM 216	Bacteriological / Biological Water Analysis	4
<b>Total Credits</b>		<b>8</b>

# Certificate

## Mathematics in Water Quality

<b>Required Courses</b>		<b>Credits</b>
WQM 105	Specific Calculations	4
WQM 200	Hydraulics	4
<b>Total Credits</b>		<b>8</b>

# Certificate

## Education and Experience

<b>Required Courses</b>		<b>Credits</b>
WQM 126	Safety in Water Quality Management	3
WQM 280	Internship	3-6
<b>Total Credits</b>		<b>6-9</b>

# Certificate

## Distribution and Collection Systems

<b>Required Courses</b>		<b>Credits</b>
WQM 109	Water Distribution	3
WQM 118	Wastewater Collection Systems	3
<b>Total Credits</b>		<b>6</b>



# Welding

(In cooperation with and taught at Warren Tech)  
 \* Pending approval

The welding program is offered at WarrenTech. Students attend classes 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 and may not enroll in individual courses. In order to begin the enrollment process, you 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.

This program is designed to develop the skills necessary for entry-level employment in the welding industry. Entry-level welder certification from the American Welding Society may be earned upon completion of the program.

## Degree Associate of Applied Science

### Welding

### Certificates:

- OFW and OFC Certificate**
- SMAW Certificate**
- GMAW Certificate**
- FCAW Certificate**
- GTAW Certificate**

### AAS Degree

Required Courses		Credits
WEL 100	Safety for Welders	1
WEL 101	Allied Cutting Process	4
WEL 102	Oxyacetylene Joining Processes	4
WEL 103	Basic Shielded Metal Arc Welding I	4
WEL 110	Advanced Shielded Metal Arc Welding I	4
WEL 124	Introduction to Gas Tungsten Arc Welding	4
WEL 201	Gas Metal Arc Welding I	4
WEL 202	Gas Metal Arc Welding II	4
WEL 203	Flux Cored Arc Welding I	4
WEL 204	Flux Cored Arc Welding II	4
WEL 224	Advanced Gas Tungsten Arc Welding	4
WEL 250	Layout and Fabrication	4
CAD 119	Intermediate CAD I	3
<b>General Education Requirements</b>		
ENG 131	Technical Writing	3
MAT 107	Career Math (or higher)	3
SPE 115	Public Speaking	3
PHY 105	Conceptual Physics	4

**Elective from any of the following areas:** **3**

- Arts and Humanities (ART, FRE, GER, HUM, LIT, MUS, PHI, SPE, SPA, THE)
- Science (AST, BIO, CHE, GEY, PHY)
- Social Science (ANT, ECO, HIS, POS, PSY, SOC)

**Total Credits** **64**

### Certificates:

For the following certificates, you must complete WEL 100 Safety for Welders as a prerequisite course.

### Ox-fuel Welding and Cutting (OFW and OFC) Certificate

Course		Credits
WEL 100	Safety for Welders	1
WEL 101	Allied Cutting Process	4
WEL 102	Oxyacetylene Joining Processes	4
<b>Total Credits</b>		<b>9</b>

### Shield Metal Arc Welding (SMAW) Certificate

Course		Credits
WEL 103	Basic Shielded Metal Arc Welding I	4
WEL 110	Advanced Shielded Metal Arc Welding I	4
<b>Total Credits</b>		<b>8</b>

### Gas Metal Arc Welding (GMAW) Certificate

Course		Credits
WEL 201	Gas Metal Arc Welding I	4
WEL 202	Gas Metal Arc Welding II	4
<b>Total Credits</b>		<b>8</b>

### Flux Core Arc Welding (FCAW) Certificate

Course		Credits
WEL 203	Flux Cored Arc Welding I	4
WEL 204	Flux Cored Arc Welding II	4
<b>Total Credits</b>		<b>8</b>

# Gas Tungsten Arc Welding (GTAW) Certificate

Course	Credits
WEL 124 Intro. to Gas Tungsten Arc Welding	4
WEL 224 Advanced Gas Tungsten Arc Welding	4
<b>Total Credits</b>	<b>8</b>

## **Woodworking**

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(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 you to select courses and transfer among state colleges.*

# AAA - Academic Achievement

## AAA 050 Semester Survival

### 3 credit

AAA 050 emphasizes basic study skills in order to bolster a student's chances of completing the current semester successfully.

# ACC - Accounting

[www.rrcc.edu/business](http://www.rrcc.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 116 Computerized Billing

### 3 credits

ACC 116 introduces the concepts and operations of a computerized billing system. Topics include searches, queries, entries and posting account charges and payments, corrections and audits of journals, and preparation and printing of reports.

## ACC 121 Accounting Principles I

### 4 credits

Prerequisites: Accuplacer scores of 80 or better for reading and 45 or better for elementary algebra or equivalent SAT scores ACT scores or course work.

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 123 Accounting Principles I Recitation

### 1 credit

Corequisite: ACC 121

ACC 123 offers an accompanying recitation for ACC 121, Accounting Principles I. The course exposes you to a broader accounting experience in the foundational studies of accounting. You will be introduced to additional problems, case studies, and applications of accounting in real-world business situations, using individual and team problem solving.

## ACC 124 Accounting Principles II Recitation

### 1 credit

Corequisite ACC 122

ACC 124 offers an accompanying recitation for ACC 122, Accounting Principles II. The course exposes you to a broader accounting experience in financial and managerial accounting. You will be introduced to additional problems, case studies, and applications of accounting in real-world business situations, using individual and team problem solving.

## 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

Corequisite: ACC 101, ACC 121 or equivalent knowledge

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

## ACC 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 211 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 you with a vehicle to pursue in depth exploration of special topics of interest.

## **ACC 280 Internship**

### **1-3 credits**

Prerequisite: Permission of Instructor  
ACC 280 provides you with the opportunity to supplement coursework with practical work experience related to their educational program. You will work under the immediate supervision of experienced personnel at the business location and with the direct guidance of the instructor.

## **ACC 285 Independent Study**

### **1-3 credits**

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

# **ACE- Architectural**

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## **ACE 221 Building Electrical/Mechanical Systems**

### **3 credits**

ACE 221 acquaints you with electrical and mechanical equipment and systems in buildings. Lectures cover the basic principles of electrical distribution, artificial lighting, fire protection, plumbing systems, and heating, ventilating, and air conditioning (HVAC) systems.

# **ACT - Automotive Collision Technology**

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## **ACT 101 Introduction to Automotive Collision Technology**

### **4 credits**

ACT 101 is designed as an orientation to the automotive collision repair industry. You will 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. The course focuses on general collision repair and refinishing shop safety procedures with an emphasis on personal and environmental safety issues. You will also learn the proper handling and disposal of hazardous materials.

## **ACT 110 Safety In Collision Repair**

### **2 credits**

ACT 110 introduces you to safety techniques and operation as it relates to shop safety and industry standards. You will be exposed to regulations and collision shop operations. In addition, you will become 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. You will familiarize themselves with damage analysis, extent of damage, and the sequence of repair. The 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, and 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 is covered including identification and analysis of damage. This course includes the techniques for basic hook ups 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. You will apply 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 is emphasized. The identification of tools and equipment, with use and maintenance is 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 you will learn 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. You will 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. This 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, you will practice 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 you 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 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**

### **0.5-9 credits**

ACT 175 assists you who are interested in individual topics within the normal curriculum. You will identify and select objectives that you need 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 specialized area.

ACT 180 is designed to meet the needs of the student in selected specialized area in a work-based environment. Individualized instruction at the job site is coordinated based on 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. You will 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

Corequisite: 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 you 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. You will 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. 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 is 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 used for the removal and replacement of modular glass using manufacturer's specifications and procedures.

## **ACT 241 Paint Defects**

### **3 credits**

Prerequisites: ACT 101, ACT 110, and all other lower level Refinishing courses or Faculty Consent

ACT 241 covers paint defects and emphasizes the causes of paint defects with methods to cure problems during and after refinishing procedures. You will 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 you will 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**

Prerequisites: 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**

Prerequisites: 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 Restraint Systems**

#### **1 credit**

You will learn to inspect, remove, and replace active restraint systems, passive restraint systems, and supplemental restraint systems. Procedures are demonstrated for disarming and diagnosing restraint systems using electronic equipment and trouble codes. Instruction for passive restraint replacement is also covered in this course.

## **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 107 Introduction to Archaeology**

#### **3 Credits**

ANT 107 introduces the science of recovering the human prehistoric and historic past through excavation, analysis and interpretation of material remains. The course includes a survey of the archaeology of different areas of the Old and New Worlds and also includes the works of selected archaeologists and discussions of major archaeological theories.

### **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.

## **ARM- Military Science (U.S. Army)**

### **ARM 111 Adventures in Leadership I**

#### **2 credits**

ARM 111 introduces you to fundamentals of leadership and the United States Army. It includes Army leadership doctrine, team-building concepts, time and stress management, an introduction to cartography and land navigation, marksmanship, briefing techniques, and basic military tactics. The course includes lecture and laboratory.

### **ARM 112 Adventures in Leadership II**

#### **2 credits**

ARM 112 investigates leadership in small organizations. The course covers basic troop leading procedures, military first aid and casualty evacuation concepts, creating ethical work climates, an introduction to Army organizations and installations, and basic military tactics. The course introduces you to effective military writing styles and includes lecture and laboratory.

### **ARM 211 Methods of Leadership and Management I**

#### **3 credits**

ARM 211 reviews leadership and management concepts including motivation, attitudes, communication skills, problem solving, human needs and behavior, and leadership self-development. You will refine written and oral communications skills and explore the basic branches of the Army, and officer and NCO duties. You will conduct practical exercises in small unit light infantry tactics and perform as midlevel leaders in the cadet organization. The course includes lecture and laboratory.

### **ARM 212 Methods of Leadership and Management II**

#### **3 credits**

ARM 212 focuses on leadership and management functions in military and corporate environments. You will study various components of Army leadership doctrine to include the four elements of leadership, leadership principles, risk management, and planning theory, the be-know-do framework, and the Army leadership evaluation program. The course continues to refine communication skills and includes lecture and laboratory.

## **ART- Art**

[www.rccc.edu/arts/art](http://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 Ancient to Medieval**

#### **3 credits**

ART 111 provides the knowledge base to understand the visual arts, especially as related to Western culture. The course surveys the visual arts from the Ancient through the Medieval periods.



### **ART 112 Art History Renaissance to Modern**

#### **3 credits**

ART 112 provides the knowledge base to understand the visual arts, especially as related to Western culture. The course surveys the visual arts from the Renaissance through the Modern periods.

### **ART 113 History of Photography**

#### **3 credits**

ART 113 surveys the history of photography from its beginning to the present. Course emphasis is on individual photographers who have made significant contributions in the field. You will attain an overview of technical, artistic, commercial, and social development of photography as a form of visual communication.

### **ART 121 Drawing I**

#### **3 credits**

ART 121 investigates the various approaches and media that you 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 2-D 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 138 Photography I**

#### **3 credits**

ART 138 introduces you to black and white photography as a fine art medium and develops skills necessary for basic camera and darkroom operations. You will learn to create sharp, properly exposed photographs using black and white film. You will also gain a working knowledge of a camera's controls, use of basic filters, and processing and printing black and white photographs. A 35mm SLR film camera is required for this class.

### **ART 139 Photography II**

#### **3 credits**

Prerequisite: ART 138 Photography I or permission of instructor

ART 139 expands on skills learned in Photography I in the areas of camera and lab operations and emphasizes individual creativity. Photography II includes the development of a comprehensive photographic portfolio. A 35mm SLR film camera is required for this class.

### **ART 140 Color Photography I**

#### **3 credits**

Prerequisites: ART 138 Photography I or permission of instructor

ART 140 introduces you to the fundamentals of color film photography. Topics such as color theory, light, history of color photography, composition, and film are covered in this course. You will use and develop 35mm color slide film. A 35mm SLR film camera is required for this class.

### **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 143 Digital Photography I : Adobe Photoshop Elements**

#### **3 credits**

ART 143 analyzes acquisition and manipulation of digital images. You will 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 are discussed. You will examine color correction, restoration, colorizing, and archiving digital images.

A digital SLR camera with manual settings is required for this class.

### **ART 146 Stained Glass I**

#### **3 credits**

ART 146 develops a basic understanding of and approach to stained glass. You will 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. You will advance to a clearer but still basic understanding and approach to stained glass. You will 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 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**

ART 207 provides you 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. The 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. The 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 240 Color Photography II**  
**3 credits**

Prerequisite: ART 140 Color Photography I or permission of instructor

ART 240 is designed for students who are developing a personal style and aesthetic in the medium of color film photography and is an extension of Color Photography I. Personal expression is stressed through individual critiques and projects. A 35mm SLR film camera is required for this class.

**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. You will 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 243 Digital Photography II: Adobe Photoshop Elements**  
**3 credits**

Prerequisite: ART 143 Digital Photography I or permission of instructor

ART 243 is a continuation of the beginning digital photography class. This class looks at digital photography in terms of design and communication factors including color, visual design, lighting, graphics, and aesthetics. A digital SLR camera with manual settings is required for this class.

**ART 246 Stained Glass III**  
**3 credits**

Prerequisite: ART 147

ART 246 provides continued instruction in which you advance to a clearer and more advanced understanding and approach to stained glass. You will 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. You will 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 material and tools and a wide variety of glass.

**ART 248 Digital Darkroom: Adobe Photoshop**  
**3 credits**

Recommended Prerequisites: ART 143 Digital Photography I

ART 248 is essentially, "Photoshop for Photographers." You will learn computer aided photography and darkroom techniques. The emphasis of this course is image-editing software, which is 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. A digital SLR camera with manual settings is required for this class.

**ART 251 Portrait Photography**  
**3 credits**

Recommended Prerequisites: ART 138 Photography I or ART 143 Digital Photography I

ART 251 teaches 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. Both film and/or digital SLR cameras with manual settings may be used for this class.

**ART 252 Landscape Photography**  
**3 credits**

Recommended Prerequisites: ART 138 Photography I or ART 143 Digital Photography I

ART 252 is designed for the advanced photography student interested in perfecting skills in shooting landscape or scenic photographs. Emphasis is placed on careful attention to detail and lighting conditions, use of medium and large format equipment in both color and black and white images. Both film and/or digital SLR cameras with manual settings may be used for this class.

**ART 253 Studio Photography**  
**3 credits**

Prerequisite: ART 138

ART 253 explores the creative uses of studio lighting from the perspective of fine art photography with an emphasis on portraiture, three dimensional object photography, and two dimensional collage photography.

**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 you 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 you 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. The 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 you 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 your occupational experience plan.

## **ASE- Automotive Service Technology**

### **ASE 101 Auto Shop Orientation**

**2 credits**

ASE 101 provides you 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**

**1 credits**

ASE 160 focuses on theory and laboratory experiences in the removal and installation procedures of the automotive engine as they relate to 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**

**1 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 used 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**

**4 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**

Prerequisites: 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**

Prerequisites: 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. You will 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**

**1 credit**

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**

**0.5-6 credits**

Prerequisites: 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**

**0.5-6 credit**

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)**

### **0.5-6 credits**

Prerequisite: Permission of instructor  
ASE 282 emphasizes practical on-the-job, work related experience that corresponds to the area of study. In this semester, the student takes all related sponsor requirements in (STS) Service Training Standards (General Motors) or ("F.A.S.T.") Fundamental Automotive Systems Training (Chrysler) or others as required by the program track.

## **ASE 285 Independent Study**

### **0.5-6 credits**

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

## **ASE 287 Cooperative Education**

### **0.5-6 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**

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[www.rccc.edu/languages](http://www.rccc.edu/languages)

## **ASL 121 American Sign Language I**

### **5 credits**

ASL 121 exposes you to American Sign Language. Readiness activities are conducted focusing on visual/receptive skills and basic communication. The course uses the direct experience method. You 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.

Corequisite: 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. You 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**

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## **AST 101 Astronomy I with Lab**

### **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 102 Astronomy II with Lab**

### **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.

# **BIO- Biology**

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[www.rccc.edu/science/biology](http://www.rccc.edu/science/biology)

## **BIO 105 Science of Biology with lab**

### **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 with Lab**

### **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 about metabolic processes of respiration, photosynthesis, cell reproduction, and basic concepts of heredity.

## **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.

## **BIO 201 Human Anatomy and Physiology I with Lab**

### **4 credits**

Prerequisite: BIO 111, equivalent, BIO 106 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, articulation, muscular, nervous, and endocrine systems.

## **BIO 202 Human Anatomy and Physiology II with Lab**

### **4 credits**

Prerequisite: BIO 201 or equivalent, or permission of department chair  
BIO 202 is a continuation of BIO 201. 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.

## **BIO 208 Microbiology with Lab**

### **5 credits**

Prerequisite: 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.

## **BIO 211 Cell Biology with Lab**

### **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.

## **BIO 212 Molecular Biology with Lab**

### **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.

## **BIO 220 General Zoology with Lab**

### **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.

## **BIO 221 Botany with Lab**

### **5 credits**

Prerequisite: 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.

## **BIO 228 Field Biology**

### **4 credits**

Prerequisite: 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, including extensive hiking.

# **BTE- Business Technology**

[www.rrcc.edu/cis](http://www.rrcc.edu/cis)

## **BTE 100 Computer Keyboarding**

### **1 Credit**

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 are 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 20 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  
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. 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 include manual and/or computer software.

### **BTE 166 Business Editing Skills** **3 Credits**

Co-requisite: BTE 102

BTE 166 provides proofreading techniques and reviews spelling, punctuation, grammar and formatting of various business documents and worksheets.

### **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**

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 280 Internship** **3 Credits**

Prerequisite: Permission of instructor

BTE 280 provides you with the opportunity to supplement coursework with practical work experience related to their educational program. You will work under the immediate supervision of experienced personnel at the business location and with the direct guidance of the instructor.

## **BUS-Business**

[www.rrocc.edu/business](http://www.rrocc.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. You will 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**

Prerequisite: A grade of C or higher in Reading 090 or appropriate SAT, ACT or Accuplacer score that indicates college reading ability, or permission of instructor.

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. You will 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: MAT 106 (Survey of Algebra) or equivalent

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 you 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 281 Internship**

### **1-3 credits**

Prerequisite: Permission of instructor  
BUS 281 provides continued instruction and the opportunity for you to supplement coursework with practical work experience related to their educational program. You will work under the immediate supervision of experienced personnel at the business location and with the direct guidance of the instructor.

## **BUS 285 Independent Study**

### **1-3 credits**

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

# **CAD- Computer-Aided Design**

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[www.rccc.edu/egt/](http://www.rccc.edu/egt/)  
(See EGT for more listings.)

## **CAD 101 Computer Aided Drafting I**

### **4 credits**

CAD 101 focuses on basic computer aided drafting skills using the latest release of CAD software. The course includes file management, Cartesian coordinate system, drawing set-ups, drawing aids, layer usage, drawing geometric shapes, editing objects, array, text applications, basic dimensioning, and Help access.

## **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. 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 202 Computer-Aided Drafting/3D**

### **3 credits**

Prerequisite: CAD 110 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 217 3D / VIZ**

Prerequisite: CAD 110 or equivalent

### **3 credits**

CAD 217 focuses on introductory level basic features of the software using the latest version of AutoDesk VIZ. The course 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 3D / VIZ / Advanced**

### **3 credits**

Prerequisite: CAD 217

CAD 218 builds on the basic 3D 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 219 3Ds / Max**

### **3 credits**

Prerequisite: CAD 101, 110 or equivalent

CAD 219 introduces 3D rendering and animation using AUTODESK 3D Studio software. The course emphasizes 3D geometry, texture mapping, lighting, camera placement, shading, photo-realistic rendering, animation techniques, and walk through animations.

## **CAD 224 Revit**

### **3 credits**

Prerequisite: CAD 101, 110 or equivalent

CAD 224 provides you with the software application training in AutoDesk Revit necessary to produce 3D Architectural models and 2D drawings utilizing AIA standards.

## **CAD 226 Architectural Desktop 6 credits**

Prerequisite: CAD 110 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**

Prerequisite: CAD 110 or equivalent

CAD 231 focuses on the basic command structure and applications of civil mapping concepts utilizing 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 233 Civil 3D (Software)**

### **3 credits**

Prerequisite: CAD 231

CAD 233 provides you with the basics to advanced software application necessary to produce 3D Civil models and 2D drawings using the latest release of the Civil 3D software. This course will cover topics including components and program interface, linework, geometry, 2D to 3D civil CAD applications.

### **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 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**

Prerequisite: CAD 256. CAD 257 teaches you to apply intermediate SolidWorks applications to produce parametric models of parts and assemblies.

### **CAD 258 SolidWorks Advanced**

#### **6 credits**

Prerequisite: CAD 257. CAD 258 demonstrates the advanced applications of SolidWorks software.

### **CAD 260 C.A.D. Project**

#### **2 credits**

Prerequisite: Permission of instructor. CAD 260 focuses on a final computer aided drafting project in the student's area of special interest.

### **CAD 280 Internship**

#### **1-6 credits**

Prerequisite: Permission of instructor. CAD 280 provides you with the opportunity to supplement coursework with practical work experience related to their educational program. You will work under the immediate supervision of experienced personnel at the business location and with the direct guidance of the instructor.

### **CAD 285 Independent Study**

#### **1-6 credits**

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

### **CAD 289 Capstone**

#### **1-6 credits**

Prerequisite: Permission of instructor. CAD 289 is a demonstrated culmination of learning within a given program of study.

## **CAR- Carpentry**

[www.rccc.edu/construction](http://www.rccc.edu/construction)

### **CAR 133 Construction Framing & Safety**

#### **4 Credits**

CAR 133 uses 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 you for a 10-hour safety card.

### **CAR 134 Exterior Finishes and Trim**

#### **4 Credits**

CAR 134 uses 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**

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. The course examines materials scheduling, estimation, and construction methods.

### **CAR 144 Interior Trim & Finish Methods**

#### **4 Credits**

CAR 144 uses hands-on techniques to illustrate basic interior finishing methods. This class guides you through the techniques used 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 you develop skills through tool utilization to pass competency and safety tests for each tool. You will 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 mill-workers.

### **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. You will 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**

Prerequisite: CAR 156 or permission of Instructor

CAR 275 provides you 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 you 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 you 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](http://www.rccc.edu/science/chemistry)

### **CHE 101 Introduction to Chemistry I with Lab**

#### **5 credits**

Prerequisite: MAT 106

CHE 101 includes the study of measurements, atomic theory, chemical bonding, nomenclature, stoichiometry, solutions, acid and base, gas laws, and condensed states. 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.

Corequisite: 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.

### **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.

### **CHE 208 Introduction to Organic and Biochemistry with Lab**

#### **5 credits**

Prerequisites: 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 are 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.

### **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. CHE 212 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.

# 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. *Credit does not apply toward a certificate or degree.*

## 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. *Credit does not apply toward a certificate or degree.*

## 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. *Credit does not apply toward a certificate or degree.*

## 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. *Credit does not apply toward a certificate or degree.*

## CIS 111 Intro to Microsoft OneNote

### 1 credit

CIS 111 provides introduction to using Microsoft OneNote software to take as well as organize notes. You will use OneNote to integrate notes with other applications and collaborate with others.

## 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 credits

CIS 128 introduces you 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 your 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. You will 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 gives you an introductory working knowledge of word processing. You will create, edit, format, save, and print documents as well as use spell check, grammar check, and thesaurus features. You will format text, paragraphs, and pages, change margins and use the find and replace feature as well as create envelopes and labels.

## CIS 132 Word Processing II: Word

### 1 credit

Prerequisite: CIS 131

CIS 132 increases your working knowledge of word processing. In this module, you will learn to use the merge function, create multiple page reports using headers, footers, footnotes, endnotes, and page numbers as well as create and format documents using columns and tables.

## CIS 133 Word Processing III: Word

### 1 credit

Prerequisite: CIS 132

CIS 133 increases your working knowledge of word processing. In this module, you will learn to use borders, drawing, word art, and graphics. You will create macros, charts, outlines, styles, and fill-in forms.

## 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 explore a complete array of word processing skills. The skills needed to create, edit, format, and print documents are covered. Other topics include character, paragraph, and page formats, the use of spelling checkers and thesaurus, hyphenation, tables, mail merge, document design, and graphics. This course is the equivalent of CIS 131, 132, and 133 taken separately.

## CIS 140 Microsoft Outlook

### 1 credit

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.

**CIS 142 PC Databases II: Access  
1 credit**

Prerequisite: CIS 141

CIS 142 continues to build on database application skills learned in CIS 141. You will 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 you to concepts and applications of an electronic spreadsheet. Topics include creating a worksheet, developing a professional looking worksheet and creating charts.

**CIS 152 PC Spreadsheets II: Excel  
1 credit**

Prerequisite: CIS 151

CIS 152 continues to build on spreadsheet skills learned in CIS 151. You will practice through hands-on exercises such as design and report writing. Database features of filters, sorts and special calculations are also covered. Other topics include working with lists, integrating with other Windows programs and working with multiple worksheets and workbooks.

**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 exposes you to a wide range of uses of the electronic spreadsheet with special emphasis on using it as a business tool. It includes fundamentals and terms, creating and saving workbooks, entering and using formulas, formatting, printing, multiple-page workbooks, creating charts, entering and using functions, managing lists, and simple 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 you to the concepts and techniques of desktop publishing. You will then work with more complex documents and publications to use 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 240

CIS 251 introduces you 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 252 Implement and Maintain SQL Server Database**

#### **3 credits**

Prerequisite: CIS 251 or equivalent knowledge

CIS 252 provides you with the skills necessary to install and configure SQL Server, implement database mirroring, manage database snapshots, work with XML and flat files, manage replication, back up and restore a database, monitor and troubleshoot, and create and implement database objects.

### **CIS 253 Programming with a MS SQL Server Database**

#### **3 credits**

Prerequisite: CIS 252 or equivalent knowledge and experience

CIS 253 provides you with the basics of programming custom database applications with Microsoft SQL Server. It includes integration with the Microsoft .NET Framework, SQL Server Management Studio, SQL Service Broker, Notification Services, Integration Services, Reporting Services, OLAP, and Data Mining.

### **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 you 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**

Prerequisite: Last semester of your certificate/ degree program

CIS 289 allows you 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 role they play on the project team.

## **CNG- Computer Networking**

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[www.rccc.edu/cis](http://www.rccc.edu/cis)

### **CNG 101 Intro to Networking**

#### **3 credits**

CNG 101 focuses on underlying concepts of data communications, telecommunications and networking. It emphasizes the terminology and technologies in current networking environments and provides a general overview of the field of networking as a basis for continued study in the field.

### **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 you 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 you for the CompTIAA+ OS Technologies Exam.

### **CNG 124 Networking I: Network+**

#### **3 credits**

Prerequisite: CNG 122 or comparable knowledge or experience

CNG 124 provides you 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 you for the Networking II: Network + course.

### **CNG 125 Networking II: Network+**

#### **3 credits**

Prerequisite: CNG 124

CNG 125 continues to provide you 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 you for the Network + certification.

### **CNG 211 Windows Configuration: Vista**

#### **3 credits**

CNG 211 provides you with the knowledge and skills necessary to address the implementation and desktop support needs of customers who are planning to deploy and support Microsoft Windows client operating system in a variety of network operating system environments.

### **CNG 212 Manage MS Windows Server Environment**

**4 credits**

CNG 212 provides you 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 you with the knowledge and skills to implement and manage a Microsoft Windows Server network infrastructure. You 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 you with the knowledge and skills necessary to plan and maintain a Windows Server network infrastructure. You 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 you 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 you 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 you 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 you the knowledge and skills necessary to install, configure, and administer Microsoft Exchange. You 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 you 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). You 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 (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, you will prepare for taking the CCNA exam.

## **COM - Communication**

### **COM 105**

#### **Career Communication**

### **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 you with interactive concerns in settings related to patient-client care. The course includes discussions of diverse cultures, client interaction and family/caregiver issues. You will also address the concerns of attitude, office politics, teamwork, self-initiative and conflict management as specifically experienced in the patient and client setting.

### **COM 275**

#### **Special Topics**

### **0.5-6 credits**

COM 275 provides you with a vehicle to pursue in-depth exploration of special topics of interest.

### **COM 285**

#### **Independent Study**

### **0.5-6 credits**

COM 285 meets the individual needs of students. You will engage in intensive study of research under the direction of a qualified instructor.

## **CMD - Communication Disorders**

### **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**

Prerequisite: 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**

#### **Anatomy and Physiology of the Speech and Hearing Mechanism**

### **3 credits**

Prerequisite: CMD 160

CMD 267 is designed to introduce you 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](http://www.rccc.edu/construction)

### **CON 105 Construction Technology**

### **4 credits**

CON 105 explores a variety of software applications available for the construction trade. The course introduces computer applications such as Word, Excel, PowerPoint, scheduling, estimating, and accounting programs.



### **CON 110 Introduction to Construction, Part I**

#### **4 credits**

CON 110 explores the expanding array of careers within the construction industry. You 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 140 Introduction to Building Codes and Enforcement**

#### **3 credits**

CON 140 introduces the basic concepts of code enforcement.

### **CON 142 International Residential Code**

#### **4 credits**

CON 142 primarily covers the first 11 chapters of the current code book, as well as briefly discussing the information located within the other chapters of the book. This course is designed as an introduction to the IRC for contractors, building officials, architects, and others within the building industry who desire to gain knowledge of the IRC.

### **CON 143 International Building Code**

#### **4 credits**

CON 143 primarily covers the first 11 chapters of the current code book, as well as briefly discussing the information located within the other chapters of the book. It will also introduce other documents which relate to the IBC, such as various I-codes, addendums, and specifications. This course is designed as an introduction to the IBC for contractors, building officials, architects, and others within the building industry who desire to gain knowledge of the IBC.

### **CON 228 Estimating**

#### **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 you to reading and interpreting blueprints for residential, commercial and industrial construction.

### **CON 240 Code Compliance II**

#### **3 credits**

CON 240 prepares you to successfully complete the building inspector exam. This 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. The course covers the procedure for reviewing residential plans and specifications based on the 2003 International Residential Code

### **CON 245 Project Management**

#### **4 credits**

CON 245 covers the principles of project planning, scheduling, estimating and management. It emphasizes the basic skills required to supervise personnel. and includes case studies.

### **CON 261 Leadership and Motivation for Construction Supervisors**

#### **2 credits**

CON 261 introduces basic management ideas, principles and skills that will enable you 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 Communications 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 you 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 will teach you to plan the sequence, duration and relationship of activities for a construction process and 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**

COS 266 will teach you 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**

COS 267 will teach you 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. This 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**

COS 268 will teach you to develop an understanding of the supervisor's role in the application of business management functions to a construction project. Topics include: preplanning, 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**

COS 269 will teach you to organizing 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)

# **COS - Cosmetology**

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## **COS 103**

### **Shampoo/Rinses/Conditioners I 1 credit**

COS 103 introduces various types of scalp treatments and shampoos. This course enables you to recognize and treat disorders of hair and scalp. It covers product knowledge and proper massage techniques to help control disorders and to cleanse the hair and scalp. The course includes terminology dealing with hair structure, scalp, and hair disorders and provides training in a lab or classroom setting.

## **COS 110 Introduction to Hair Coloring**

### **2 credits**

COS 110 provides theory pertaining to the law of color, theory of color, chemistry of color, product knowledge, and analysis of hair and scalp. The course covers basic techniques and procedures for the application of hair coloring.

## **COS 111 Intermediate I: Hair Coloring**

### **2 credits**

COS 111 focuses on theory and practical application of color products, formulations of color, level and shades of color. The course examines techniques in a specialized class or in a supervised salon setting.

## **COS 120 Introduction to Hair Cutting**

### **2 credits**

COS 120 is an introduction to the theory relevant to patron protection, angles, elevations, and the analysis of hair textures as related to hair cutting. It covers the proper use and care of hair cutting implements, focuses on basic hair cutting techniques using all cutting implements, disinfection, and sanitation procedures as they relate to haircutting.

## **COS 121 Intermediate I: Hair Cutting**

### **2 credits**

COS 121 focuses on the theory of related facial shapes and head and body forms to determine the client's appropriate haircut. The course incorporates practical applications of hair cutting techniques in specialized classes or in the supervised salon (clinical setting).

## **COS 130 Introduction to Hairstyling**

### **2 credits**

COS 130 combines theory with the practical application of roller placement, shaping, pincurls, finger waves, ariforming iron curling, soft pressing and hard pressing.

## **COS 131 Intermediate I: Hairstyling**

### **2 credits**

COS 131 focuses on the accepted methods of styling hair, air forming roller sets, finger waves, pin curls, braiding, and hair pressing.

## **COS 140 Intro to Chemical Texture**

### **1 credit**

COS 140 introduces a combination of theory and practice focusing on the analysis of hair and scalp, proper equipment and product knowledge. This course includes basic techniques in permanent waving and chemical relaxing. It provides training in a classroom or lab setting on mannequins or live models.

## **COS 141 Intermediate I: Chemical Texture**

### **1 credit**

COS 141 emphasizes theory and practical application of permanent waves and chemical relaxers in specialized classes or a supervised salon setting. This course enables you to practice different wrapping techniques required by trend styles.

**COS 150 Laws, Rules and Regulations****1 credit**

COS 150 provides instruction concerning the laws, rules, and regulations and how they govern the cosmetology and barber industry. The effects these have on you, licensed individual, salons, and school owners are covered.

**COS 160 Intro to Disinfection, Sanitation & Safety****2 credits**

COS 160 introduces the various methods of disinfection, sanitation, and safety as used in the cosmetology industry. This course includes classroom study of bacteriology and the terminology dealing with cosmetology.

**COS 161 Intermediate I: Disinfection, Sanitation & Safety****1 credit**

COS 161 focuses on the theory and daily practice of proper methods of disinfection, sanitation and safety procedures as related to all phases of cosmetology. It covers terminology and training of disinfection, sanitation, and safety procedures. This course also includes customer service training in a supervised salon (clinical) setting or specialized class.

**COS 203****Shampoo/Rinse/Conditioners II****1 credit**

COS 203 provides theory and practical training in shampoos, rinses and conditioners. This course examines advanced techniques to prepare you for employment. It includes preparation for the State Board Licensing Examination in shampoos, rinses, and conditioners.

**COS 210 Intermediate II: Hair Coloring****2 credits**

COS 210 provides continued instruction in the theory and practical application of color products, formulations of color, level and shades of color. It enables you to practice techniques in a specialized class or in a supervised salon setting.

**COS 211 Advanced Hair Coloring****2 credits**

COS 211 provides continued instruction on advanced theory and practical techniques in hair coloring. The course focuses on the recognition of color problems and color correction procedures. It covers advanced techniques and product knowledge to prepare you for employment and prepares you for the State Board Licensing Examination pertaining to hair coloring.

**COS 220 Intermediate II: Hair Cutting****2 credits**

COS 220 provides continued instruction in the theory related to facial shapes, head and body forms to determine the client's appropriate haircut. It incorporates practical applications of haircutting techniques.

**COS 221 Advanced Hair Cutting****2 credits**

COS 221 focuses on advanced cutting techniques using all the cutting tools. It emphasizes current fashion trends and includes student preparation for the State Licensure examination.

**COS 230 Intermediate II: Hair Styling****2 credits**

COS 230 provides continued instruction on accepted methods of styling hair, air forming, roll set, finger waves, and hair pressing. It examines techniques in specialized classes or in a supervised salon setting.

**COS 231 Advanced Hair Styling****1 credit**

COS 231 focuses on theory and advanced techniques in all phases of hairstyling to prepare you for employment. Training involves a combination of supervised salon (clinical) work and specialized classes. It includes student preparation for the State Board Licensing Examination relating to hairstyling.

**COS 240 Intermediate II: Chemical Texture****1 credit**

COS 240 provides continued instruction in the theory and practical application of permanent waves and chemical relaxers in specialized classes or a supervised salon setting. It enables you to practice different wrapping techniques required by trend styles.

**COS 241 Advanced Chemical Texture****1 credit**

COS 241 focuses on advanced techniques to prepare you for employment and the changes in current industry standards. Instruction is provided in specialized classes or supervised salon (clinical) setting. It includes student preparation for the State Board Licensing Examination pertaining to permanent waves and chemical relaxers.

**COS 250 Mgmt, Ethics, Interpersonal Skills & Sales****1 credit**

COS 250 emphasizes the importance of salon management and the knowledge and skills necessary to build a successful business. The course focuses on the importance of interpersonal skills and basic techniques in salesmanship and customer services. It integrates job readiness skills and professional ethics.

**COS 260 Intermediate II: Disinfection, Sanitation & Safety****2 credits**

COS 260 provides continued study of theory and practice of proper methods of sterilization, disinfection, sanitation and safety procedures as related to all phases of the industry. It covers terminology and training of disinfection, sanitation and safety procedures. The individual responsibility to provide a safe work environment is practiced.

## **COS 261 Advanced Disinfection, Sanitation & Safety**

1 credit

COS 261 provides advanced training on decontamination and safety practices in a supervised salon and/or classroom setting. It examines advanced techniques that prepare you for employment and includes student preparation for the State Board Licensing Examination in decontamination and safety for all aspects of the industry. Study of OSHA requirements for schools and salon are conducted in a theory or practical setting.

## **COS 262 Advanced II: Disinfection, Sanitation & Safety** **3 credits**

COS 262 is the extra hours/credits required for the hairstylist program, per State Board of Colorado Barber/Cosmetology Board.

The course provides advanced training on decontamination and safety practices in a supervised salon and/or classroom setting. It examines advanced techniques that prepare you for employment and includes student preparation for the State Board Licensing Examination in decontamination and safety for all aspects of the industry. Study of OSHA requirements for schools and salon are conducted in a theory or practical setting.

# **CRJ- Criminal Justice**

[www.rccc.edu/criminal](http://www.rccc.edu/criminal)

## **CRJ 101 Basic Police Academy I** **6 credits**

Prerequisite: Permission of academy director

CRJ 101 conforms to POST standards and state certification requirements as well as the basic skills and knowledge necessary to perform the entry level duties of a peace officer. Emphasis will be on simulating actual situations utilizing a lecture and laboratory mode of learning.

## **CRJ 102 Basic Police Academy II** **12 credits**

Prerequisite: Permission of academy director

CRJ 102 conforms to POST standards and state certification requirements as well as the basic skills and knowledge to perform the entry level duties of a peace officer. Emphasis will be on simulating actual situations utilizing 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** **8 credits**

Prerequisite: Permission of academy director.

CRJ 105 conforms to POST standards and state certification requirements as well as the basic skills and knowledge necessary to perform the entry level duties of a peace officer. Emphasis will be on United States Constitution, arrest, search and seizure, interrogation and confessions, rules of evidence, Colorado Criminal Code, Colorado Traffic Code, Colorado Children's Code, Liquor Code and controlled substances.

## **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. The course 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, and enables you 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. You will demonstrate skills by firing weapons on a firing range. You will demonstrate basic safety techniques and will explain the firearms role within the continuum of force.

## **CRJ 110 Introduction 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. It 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. It focuses on report writing skills, proper structuring of interviews and chronological documentation of events. The course 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. It 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**

Prerequisites: 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. The course 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. It 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 167 Fingerprinting** **3 credits**

CRJ 167 is an in-depth instruction of the interpretation, classifications, and presentation in court of the Henry System of classification of fingerprint patterns. Instruction includes the discussion of lifting and preserving fingerprints from crime scenes. The processing of a crime scene using basically powders and a magna brush. You will be proficient in the Henry System and use of all kits and allied equipment in high level at the completion of the course.

### **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. The course 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. It 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. It 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 231 Introduction to Forensic Science and Criminalistics****3 credits**

Prerequisite: CRJ 110

CRJ 231 focuses on the fundamentals of forensic science that are essential for gathering evidence at the crime scene and analyzing it in the crime laboratory.

**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. The course emphasizes the social and psychological factors influencing individual delinquent patterns.

**CRJ 239 Managing Emergency Worker Stress****3 credits**

Prerequisites: CRJ 110 and 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. It 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. It 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. The course 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**

Prerequisites: 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 you 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. You will 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**

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[www.rccc.edu/cis](http://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 your program designs.

## **CSC 126 Game Design and Development**

### **3 credits**

CSC 126 combines problem-solving techniques with computer game design and implementation to introduce you to basic gaming and computer science concepts. You will design, implement, and test computer games using software that allows for basic game creation through a wide variety of game creation tools; no prior programming experience is required.

## **CSC 154 Introduction to MS Visual Basic .NET (OOP)**

### **3 credits**

Prerequisite: CSC 119, equivalent experience or permission of instructor  
CSC 154 provides you 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 introduces you 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**

#### **Spring Only**

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. You will 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 you 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 200 3D Game Programming I**

### **3 credits**

Prerequisite: CSC 126, CSC 119 and CSC 154 or CSC 160, equivalent experience or permission of instructor.  
CSC 200 introduces the C++ student to game programming techniques and using a game library. Skills developed include programming input devices, 2Dgame theory and design, bit map handling, sprite programming and threads.

## **CSC 227 3D Game Programming**

### **3 credits**

Prerequisite: CSC 126 and CSC 200 or equivalent experience or permission of instructor  
CSC 227 is a continuation of CSC 200. You will be involved with creating Terrains, Structures and Environments. You will also learn about Game Missions, Clients and the basics of testing.

## **CSC 228 3D Game Scripting**

### **3 credits**

Prerequisites: CSC 126 and CSC 127 and CSC 227 or equivalent experience or permission of instructor  
CSC 228 allows you to engage in advanced game engine scripting. Topics include: problem solving, objects, string, Artificial Intelligence (AI) and group behaviors.

### **CSC 240 Java Programming** **3 credits**

Prerequisite: CSC 160, equivalent experience or permission of instructor  
CSC 240 is an introduction the Java programming language and will cover basic graphics, threads, events/procedures, user interface, and libraries. You 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**

**Spring Only except online**

Prerequisite: CSC 240, equivalent experience or permission of instructor  
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 251, CSC 261, or equivalent experience or permission of instructor  
CSC 250 teaches you 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, equivalent experience or permission of instructor  
CSC 251 provides you with the knowledge and skills needed to develop Microsoft .NET-based applications by using Visual Basic .NET. It 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 you 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**

**Spring Only except online**

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 261 Programming in C# .NET**

**3 credits**

Prerequisite: CSC 160, equivalent experience or permission of instructor  
CSC 261 provides you 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**

**Fall Only except online**

Prerequisites: 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**

**Spring Only**

Prerequisites: CSC 251, CSC 261 or equivalent experience  
CSC 263 provides you 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 you to build, deploy, locate, and consume Extensible Markup Language (XML) Web services.

### **CSC 264 Building COM+ Applications using MS .NET Enterprise Services**

**3 credits**

**Fall Only**

Prerequisites: CSC 251, CSC 261 or equivalent experience  
CSC 264 provides you with the knowledge and skills to effectively build scalable, distributed applications that use Microsoft .NET Enterprise Services and the Microsoft .NET Framework.

## **CUA- Culinary Arts**

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### **CUA 101 Food Safety and Sanitation**

**2 credits**

CUA 101 covers the basic rules of sanitation, food-borne illnesses, safe food temperatures, safe food handling techniques, the HACCP Program, pest control procedures, and local/state health rules and regulations for food service operations. At the completion of the course you take a nationally recognized test from the Education Foundation of the National Restaurant Association. If passed with a score of 75% or more, you receive a Certificate of Completion from the Education Foundation.



### **CUA 105 Food Service Concepts and Management Skills**

#### **3 credits**

CUA 105 demonstrates the use of management skills training in the food service industry by use of student interaction research, and also demonstrates the various styles of menu development. The course includes basic responsibility for food service personnel in all kitchen positions with emphasis on advertising vs. publicity, job analysis, description specifications and duty list as related to recruiting and hiring process. It covers application, interview techniques, training, and hiring processes and incorporates preparation of menus for different styles of food service establishments.

### **CUA 121 Introduction to Food Production Principles and Practices**

#### **1 credit**

CUA 121 provides you with the fundamental principles of commercial kitchen operations including safety and sanitation applications, use and care of equipment, tools, utensils and knives, recipe use and conversion, organization of work, and basic cooking methods.

### **CUA 122 Introduction to Stocks, Soups and Sauces**

#### **1 credit**

CUA 122 focuses on the fundamental principles of stocks, soups, sauces, gravies and thickening agents. It enables you to produce a variety of these products in the commercial kitchen incorporating practice in the use of tools, utensils, equipment, and application of safety and sanitation practices. You will apply pre-preparation skills and efficient organization of work techniques.

### **CUA 123 Introduction to Garde Manger**

#### **1 credit**

CUA 123 provides fundamental principles of cold food and non-alcoholic beverage preparation and production in a commercial kitchen. The course enables you to produce a variety of cold food and non-alcoholic beverage products incorporating practice in the use of tools, utensils, equipment, and application of safety and sanitation methods. It introduces basic cold food decorative work, such as fruit and vegetable garnishes and carvings, terrines, and hors d'oeuvres. This course also focuses on pre-preparation procedures and efficient organization of work techniques.

### **CUA 124 Vegetable Preparation and Breakfast Cookery**

#### **1 credit**

CUA 124 introduces you to vegetable preparation and breakfast cookery in a commercial kitchen. The course focuses on the significance of variety of breakfast items and the preparation of vegetable items using a variety of cooking methods. It emphasizes the effects of seasonings and cooking methods on vegetable products. You will prepare, plate, and garnish breakfast orders similar to those ordered in restaurants with egg cookery and dairy products emphasized.

### **CUA 127 Soups, Sauces, and Consommés**

#### **3 credits**

CUA 127 covers the preparation of the five mother sauces and small-derived sauces. The course enables you to prepare stocks, consommés, emulsified sauces, clear soups, pureed soups, chowders, national, and cream soups in a commercial kitchen. It introduces gravies and sauce garnishing.

### **CUA 131 Starches, Pastas, Casseroles and Grain Products**

#### **1 credit**

CUA 131 provides the basics of preparing and/or cooking potatoes, starches, legumes and pastas. The course enables you to prepare and cook a variety of casseroles and grain products using a commercial kitchen for their preparation area. It allows you to apply pre-preparation skills and efficient organization of work techniques.

### **CUA 133 Center of the Plate: Poultry, Fish & Seafood**

#### **1 credit**

CUA 133 provides the basics of handling poultry, fish, and seafood including principles used for selection and the basic forms these products have as well as the methods of cooking them. It focuses on preparation of poultry, fish, and seafood products in a commercial kitchen and incorporates practice in the use of these principles and methods. The course covers pre-preparation skills and efficient organization of work techniques.

### **CUA 135 Center of the Plate: Beef & Veal**

#### **1 credit**

CUA 135 provides you with the basic information required for proper selection, handling, and cooking of beef and veal products. The course focuses on a variety of beef and veal products commonly used in the professional kitchen.

### **CUA 139 Center of the Plate: Pork, Lamb, & Game**

#### **1 credit**

CUA 139 provides you with the basic information required for the proper selection, handling, and cooking of pork, lamb, and game. The course focuses on a variety of pork, lamb, and game products commonly used in the professional kitchen.

### **CUA 141 Baking: Principles and Ingredients**

#### **1 credit**

CUA 141 provides you with the fundamentals of baking terminology, principles of baking, and the characteristics and functions of the main ingredients used in bakery production. It orients you to commercial equipment, tools, and utensils used in baking.

### **CUA 142 Basic Yeast-Raised Products and Quick Breads**

#### **1 credit**

CUA 142 provides you with the fundamentals of basic yeast-raised production and quick breads. The course enables you to produce white bread, rolls, variety grain breads, specialty breads, sweet yeast-raised products, and quickbreads in a commercial kitchen.

### **CUA 143 Baking: Cakes, Pies, Pastries, and Cookies**

#### **1 credit**

CUA 143 provides you with the fundamentals of basic cake, pie, pastry, and cookie production. The course enables you to produce a variety of cakes, pies, pastries, cookies, and assorted dessert items in a commercial kitchen.

### **CUA 144 Baking Applications**

#### **1 credit**

CUA 144 serves as the practical vehicle for you to apply basic baking principles and practices to the production of yeast breads, quick breads, cakes, icings, pastries, pies, and cookies. It focuses on the preparation of a variety of baked goods in a commercial kitchen according to a baking production schedule. The course enables you to demonstrate comprehensive knowledge of products as well as speed and efficiency in the production of quality baked goods.

### **CUA 150 Baking: Decorating and Presentation**

#### **3 credits**

CUA 150 examines the preparation and production of cakes, pastries, different styles of decorating, commercial equipment, and types of products used for decoration. It covers the use of plate painting, national products, and designing show pieces.

### **CUA 151 Baking: Intermediate Bread Preparation**

#### **3 credits**

CUA 151 focuses on preparation of types of bread products including French, rye, wheat, brioche, and croissants. The course enables you to demonstrate different styles of presentation including rolling, braiding, cloverleaf, parker-house, single knot, butter-flake, comb, and wreath shape. It examines production steps, ingredients, and commercial equipment that apply to course training.

### **CUA 152 Individual Fancy Dessert Production**

#### **3 credits**

CUA 152 focuses on the preparation and decoration of individual dessert items in a commercial kitchen. It covers the preparation of cream horns, napoleons, éclairs, cream puffs, marzipan fruits, marzipan sculptures, tarts, flambéd desserts, international desserts, pastry shells, pulled sugar, spun sugar, and individual chocolate decorations. You will research and locate dessert menus/recipes to be used in lab production.

### **CUA 156 Nutrition for the Hospitality Professional**

#### **3 credits**

CUA 156 provides you with the fundamentals of human nutrition. It focuses on the nutritional needs of humans throughout their life cycle as well as those with special dietary needs. You will may take a nationally recognized test from the Educational Foundation of the National Restaurant Association.

### **CUA 157 Menu Planning**

#### **3 credits**

CUA 157 introduces you to planning menus and integrating them into foodservice operations. It equips you with a working knowledge of the function, mechanics, and results achieved by the menu, providing an overview of the existing and growing food service industry as seen through the menu.

### **CUA 180 Culinary Arts Internship I**

### **CUA 181 Culinary Arts Internship II**

### **CUA 182 Culinary Arts Internship III**

### **CUA 210 Advanced Cuisine and Garde Manger**

#### **4 credits**

CUA 210 focuses on the preparation of food display items for buffets and banquets such as fancy garnishes, fruit and vegetable carvings, canapés, and party trays. It includes patés, galantines, terrines, and choud froid items. It also incorporates creation of food artistry show pieces meeting competition guidelines developed by the American Culinary Federation and covers the preparation of a regional, ethnic, or cultural culinary presentation based upon personal research.

### **CUA 242 Intermediate Garde Manger**

#### **1 credit**

CUA 242 focuses on producing a variety of garde manger items in the kitchen. It incorporates practice in the use of tools, utensils, and equipment and the application of safety and sanitation practices. This course emphasizes preparation skills and efficient organization of work skills.

## **CUA 255 Supervision in the Hospitality Industry**

### **3 credits**

CUA 255 provides the current/future foodservice operator, manager, or supervisor with a solid foundation for developing communication skills, planning and decision-making skills, and skills for creating a goal-oriented environment utilizing management principles in the selection, training, evaluating, delegating, motivating, rewarding, and disciplining employees. It stresses skills for success through people development.

## **CUA 261 Cost Controls**

### **3 credits**

CUA 261 provides you with the opportunity to learn the types of costs usually found in the food service industry. You also will learn to apply control techniques to a variety of costs and sales. They will also learn to interpret a variety of financial reports which reflect the relationship between costs and income. You may take the national Cost Controls test from the National Restaurant Association Education Foundation. If they pass the test with 75% or higher, they will receive a national certificate for the course.

# **CWB- Computer Web**

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[www.rccc.edu/cis](http://www.rccc.edu/cis)

## **CWB 110 Complete Web**

### **Authoring: HTML**

### **3 credits**

Prerequisites: 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**

Prerequisites: 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, crossplatform calibration, graphics formats, data tables, and file downloading requirements.

## **CWB 130 Complete Web Editing Tools: Dreamweaver**

### **3 credits**

Prerequisites: 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 Intro to Image Editing: Photoshop**

### **3 credits**

Prerequisite: CIS 128 or a working knowledge of Windows  
CWB 162 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 you 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**

Prerequisites: CWB 110 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: PHP**

### **3 credits**

Prerequisite: CSC160 and CWB 110, or permission of instructor  
CWB 208 teaches you how to work in the server-side scripting environment. You will learn the basics of application development, and general principles that apply to most development environments. You will develop applications using two different server-side application development tools: PHP Hypertext Preprocessor (PHP), and Cold Fusion. You will also learn key application standards such as source and revision control, coding standards, code optimization and data integrity.

## **CWB 245 Complete Web Animation: Flash**

### **3 credits**

Prerequisites: CSC 119 or CSC 160; CWB 245 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

CWB 246 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

CWB 262 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**

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### **DAN 105 – Hip Hop I**

DAN 105 consists of basic traditional jazz and ballet movements. Warm-up exercises will include body toning and stretching. You will learn diagonal step combinations leading to hip-hop dance routines.

### **DAN 106 – Hip Hop II**

DAN 106 includes traditional jazz, ballet, and street dancing techniques as well as warm-up exercises, such as body toning and stretching. You will learn diagonal and center step combinations leading to hip-hop dance routines.

### **DAN 121 Jazz I**

**1 credit**

DAN 121 introduces the basic techniques and vocabulary of jazz dance and the basic elements of dance. The course focuses on movement oriented dance, comprised of warm-up exercises, center combinations, traveling combinations and cool down. The course may be repeated for a maximum of three credits.

### **DAN 122 – Jazz II**

DAN 122 continues Jazz I with an increased knowledge of jazz dance. The course enables you to work at an intermediate level with a basic understanding of body alignment, balance and musicality.

### **DAN 131 – Ballet I**

DAN 131 introduces the basic techniques of ballet, which are built upon knowledge of ballet terminology, fundamental exercises, and the basic elements of dance. It focuses on movement-oriented dance, comprised of stretching, barre warm-up exercises, simple terre à terre and jumping steps, and basic extended positions. The course may be repeated for a maximum of three credits.

### **DAN 132 – Ballet II**

DAN 132 continues Ballet I and emphasizes ballet terminology, fundamental exercises and the basic elements of dance. It focuses on an intermediate level within the basic structure of the ballet class. The course 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. The course emphasizes developing balance and enables you 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 you 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 you to dance within the context of musical theatre. The course enables you to practice non-verbal communication and expressive movement techniques.

### **DAN 275 Special Topics**

**1-6 credits**

DAN 275 provides you with a vehicle for in-depth exploration of special topics of interest.

## **DMS- Diagnostic Medical Sonography**

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[www.rccc.edu/dms](http://www.rccc.edu/dms)

You must be accepted into the DMS program to take any DMS courses. Individuals who are already certified by the ARDMS may enroll in any of the DMS courses without applying to the program. Contact the program director for more information: 303.914.6034

### **RTE 255 Multiplanar Sectional Imaging**

**(Program prerequisite)**

**2 credits**

RTE 255 is a multi-planar sectional anatomy course with co-relative MRI and CT images. This course is designed for both post-graduate imaging professionals and radiologic technology students who want to enhance knowledge and skills. You will be able to identify normal anatomy, anatomic variants, and selected pathologies in orthogonal trans-axial, sagittal, and coronal planes through the study of line drawings, plasticized cadavarous sections, and related MR and CT images. This course is

designed to develop, in you, a working knowledge of anatomy and pathologies encountered in sectional imaging modalities such as MRI and CT.

### **DMS 203 Cerebrovascular Sonography**

#### **2 Credits**

DMS 203 provides an in-depth study of cerebrovascular disease and the ultrasonic evaluation of it. You will learn how to perform a complete B-mode and Doppler ultrasonic examination using all current industry standards. Transcranial Doppler techniques will also be presented. Pathological development and pathophysiology will be described. This course will also review techniques for patient assessment, obtaining patient histories, evaluating and correlating patient symptoms with diagnostic findings. Surgical and non-surgical corrective techniques will be discussed. You will be introduced to correlating ultrasound test results with angiography, computed tomography, nuclear medicine, vascular procedures, and magnetic resonance imaging.

### **DMS 204 Venous Sonography**

#### **2 Credits**

DMS 204 provides you with an in-depth study of the evaluation of peripheral venous disease using duplex ultrasound and plethysmographic techniques. You will learn to evaluate for venous thrombosis and insufficiency. Superficial venous mapping will be demonstrated. You will review techniques for evaluating the presence of venous disease. You will learn pathological mechanism and risk factors for venous disease. Surgical and non-surgical corrective procedures will be discussed. Correlation with other vascular procedures will be demonstrated.

### **DMS 205 Small Parts Ultrasound**

#### **2 credits**

DMS 205 is designed to teach specific knowledge of anatomy of the breast, thyroid, scrotum, prostate, and the surrounding structures. The ability to identify pathology or to locate abnormalities is also an integral part of the class.

### **DMS 206 Vascular Ultrasound**

#### **2 credits**

DMS 206 will cover basic positioning and scanning protocol of the vascular system. Review of the anatomy, hemodynamics and terminology unique to the vascular system with emphasis on the external carotid system, the upper and lower venous and arterial systems and the abdominal vasculature will be included.

### **DMS 221 OB/GYN Ultrasound I**

#### **2 credits**

DMS 221 provides a systematic study of embryology to include development of the major organ systems with correlation to sonographic imaging at all stages of embryologic, fetal development and the surrounding environment. You will master the foundations of obstetric and gynecologic sonography.

### **DMS 222 OB/GYN Ultrasound II**

#### **2 credits**

DMS 222 covers a detailed study of the high-risk pregnancy and the use of ultrasound in detection of fetal abnormalities in organ systems to include: neural, musculoskeletal, gastrointestinal, heart, multiple pregnancy. Maternal factors such as infertility, disease, and teratogens are also covered.

### **DMS 231 Abdominal Ultrasound I**

#### **2 credits**

DMS 231 provides a systematic study of the abdomen to include the function and development of the major organ systems with correlation to sonographic imaging and the surrounding environment. You will master the foundations of cross-sectional anatomy and abdominal sonography.

### **DMS 232 Abdominal Ultrasound II**

#### **2 credits**

DMS 232 provides a systematic study of the gastrointestinal tract, pediatric abdomen, neonatal brain and transplanted organs. You will review the necessary sterile technique preceding invasive and intraoperative procedures and learn the applications of contrast agents in ultrasound. Other imaging techniques will be discussed as well as the principles guiding the field of sonography. A mock registry examination will prepare you for writing the national registry examination.

### **DMS 241 Ultrasound Physics I**

#### **2 credits**

DMS 241 provides theoretical and practical approaches to understanding ultrasound physics fundamentals. You will learn the ergonomics of proper scanning, cart, chair, and room setup to aid in the prevention of musculoskeletal injury seen in many sonographers with improper technique.

### **DMS 242 Ultrasound Physics II**

#### **2 credits**

DMS 242 covers a detailed study of ultrasound physics and the application within the clinical setting. Manipulation of technique controls, basic mathematical concepts, various Doppler modalities, equipment artifacts, QC/QA procedures, 3D fundamentals, and bioeffects are covered.

### **DMS 251 Vascular Anatomy and Physiology**

#### **2 credits**

DMS 251 equips you with an understanding of the anatomy and physiology of the circulatory system. You will learn the anatomy of the veins and arteries of the human body from the great vessels to the microscopic structures at the capillary level. You will study the physiology of the circulatory system, including the effects of disease processes.

### **DMS 252 Abdominal Vascular Sonography**

#### **2 Credits**

DMS 252 teaches you how to perform duplex exams of the renal, mesenteric, aorta and iliac arteries as well as the inferior vena cava, iliac, hepatic and portal veins. You will identify risk factors and describe pathogenic mechanisms of these vessels. Surgical and interventional techniques will be discussed. Post interventional ultrasonic evaluation of these procedures will also be discussed and demonstrated. Correlation with other diagnostic procedures will be demonstrated.

## **DMS 261 Introduction to Vascular Testing**

### **2 Credits**

DMS 261 introduces you to the field of vascular technology. You will receive an introduction to vascular terminology, patient assessment, and the role of imaging and non-imaging procedures in the diagnosis of vascular disease.

## **DMS 262 Arterial Sonography**

### **2 Credits**

DMS 262 provides an in-depth study of peripheral arterial disease and non-invasive evaluation of it. You will learn how to perform B-mode and Doppler evaluation of the upper and lower extremities. You will also learn how to perform pulsed volume recording, segmental blood pressures and plethysmography. Pathological and pathophysiologic states will be described. The course will review pertinent techniques for patient assessment, obtaining patient histories, evaluating and correlating patient symptoms with diagnostic findings. You will be introduced to correlating information with other diagnostic procedures. Surgical and non-surgical corrective techniques will be discussed. Techniques for evaluating post interventions or surgical techniques will also be explained.

## **DMS 281 Ultrasound Internship I** **10 credits**

DMS 281 provides clinical experience for the beginning ultrasound student. The principles of abdominal, OB/GYN, and physics ultrasound didactic lectures will be applied under the direct supervision of a registered sonographer. You will master the foundations of instrumentation, scanning techniques and image evaluation of sectional anatomy and abdominal/OB/GYN sonography. You will spend 30 hours per week at the clinical site to additionally provide sufficient time for training in appropriate patient care and work efficiency in the scanning lab.

## **DMS 282 Ultrasound Internship II** **10 credits**

DMS 282 continues the clinical experience for the ultrasound student. Application of the small parts didactic lectures will be applied and will include image evaluation and cross-sectional anatomy of the thyroid, breast and scrotum. The foundations of vascular anatomy, instrumentation, scanning techniques and image evaluation will be stressed. You will spend 30 hours per week at the clinical site under the direct supervision of a registered sonographer.

## **DMS 283 Ultrasound Internship III** **10 credits**

DMS 283 continues the clinical experience for the ultrasound student. Application of the topics covered in advanced didactic lectures will include an introduction to invasive procedures using ultrasound guidance. Sterile technique and standard precautions will be reviewed. You will spend 30 hours per week at the clinical site under the direct supervision of a registered sonographer.

# **ECE Early Childhood Education**

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## **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**

Co-requisite: ECE 188 Field Experience  
ECE 102 includes a classroom component and required placement in a child care setting (ECE 188). The supervised placement provides you with the opportunity to observe children, to practice appropriate interactions, and to develop effective guidance and management techniques. This class addresses ages birth through eight.

## **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 prosocial skills from birth through age eight.

## **ECE 111 Infant and Toddler Theory and Practice**

### **3 credits**

Co-requisite: ECE 112 or permission of instructor  
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 Introduction to Infant/Toddler Lab Techniques**

### **3 credits**

Co-requisite: ECE 111 or permission of instructor  
ECE 112 includes a classroom seminar and placement in an infant and/or toddler setting. The supervised placement provides you with the opportunity to observe, to practice appropriate interactions, and to develop effective guidance and nurturing techniques with infants and/or toddlers. The class includes topics from prenatal development through age two.

## **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 you to research and develop appropriate individual and group scientific and mathematical activities for young children.

## **ECE 126 Art and the Young Child**

### **2 credits**

ECE 126 prepares you to plan and implement a comprehensive and developmentally appropriate art program for young children. Additionally, you 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, you will work with the concepts of age and developmental appropriateness when designing fun activities in both subjects.

## **ECE 191 School Age Theory and Practice**

### **3 credits**

ECE 191 emphasizes processes for planning and implementing developmentally appropriate environments and experiences and selection of appropriate materials 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 eight.

## **ECE 220 Curriculum Development: Methods and Techniques**

### **3 credits**

Prerequisite: ECE or PSY 238 or permission of instructor  
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 or PSY 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. It is recommended that you have completed all director certification courses.  
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 242 Admin: Family Child Care Business and ECE Programs**

ECE 242 examines Colorado's minimal licensing requirements, as well as optimal standards pertaining to the operation of programs for young children. This course focuses on the business skills necessary for family child care providers, and acquaints you with skills necessary for administering a child care center.

## **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. You 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 or PSY 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**

Prerequisite: MAT 121 suggested

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.

### **ECO 202 Principles of Microeconomics**

#### **3 credits**

Prerequisite: MAT 121 suggested

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.

## **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 Paras**

#### **3 credits**

EDU 110 provides you 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 130 Test Prep for Paraeducator WorkKeys**

#### **1 credit**

EDU 130 reviews the format and content for the ACT Paraeducator Work Keys assessment. You will become familiar with the knowledge needed for the applied math, reading for information and writing assessments.



### **EDU 131 Introduction to Adult Education**

#### **3 credits**

EDU 131 introduces you to the basic concepts in the instruction of adults. Emphasis will be placed on understanding the adult learner and how individual backgrounds and experiences can affect the learning process. Additionally, the course will cover applicable federal and state legislation which affects adult learning programs and will provide information on the resources and associations in the field of Adult Education.

### **EDU 132 Planning, Organizing, and Delivering Adult Education Instruction**

#### **3 credits**

EDU 132 will cover the basics of planning an adult education program, organizing instruction within the various content areas and delivering the material in a variety of ways, both in groups and individualized instruction. A wide variety of learning principles and theories will be addressed showing their applicability to the adult learner and his/her education.

### **EDU 133 Adult Basic Education (ABE) and Adult Secondary Education (ASE/GED)**

#### **3 credits**

EDU 133 specifically addresses the different levels within an adult education program. Each level will be addressed in terms of appropriate assessment tools and instructional techniques. Emphasis will be placed on teaching ways that the adult education instructor can encourage the development of cognitive skills at each level, as a springboard to the next higher level.

### **EDU 134 Teaching English as a Second Language (ESL) to Adult Learners**

#### **3 credits**

EDU 134 introduces the development and implementation of a program to teach English to adults whose first language is not English. Topics will range widely from assessment and placement to the theories behind language acquisition. You will also cover a wide variety of methodologies, both group and individualized, that are aimed at teaching the non-English speaker the written and verbal skills necessary to successfully function in the U.S.

### **EDU 135 Family Literacy in Adult Education**

#### **3 credits**

EDU 135 introduces the philosophy and theory behind family literacy, as well as giving practical advice on the development and implementation of a family literacy program. The four-component model--adult education, early childhood education, parent and child together time (PACT), and parenting--will be covered, both in theory and practical application.

### **EDU 151 Literacy Intervention for Paraeducators**

#### **4 credits**

EDU 151 is an introduction to the five 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. Content focuses on numbers and operations.

### **EDU 153 ESL and Cultural Issues**

#### **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 identities are shaped and will explore the socio-political aspects of cultural identity and how they influence attitudes, approaches, and educational systems. Topics include second language acquisition, stages of English proficiency, strategies for the classroom, 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 students 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. A field-experience component will be required.

### **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 261 Teaching, Learning and Technology**

#### **3 credits**

EDU 261 prepares students to integrate technology into their teaching curriculum. It enables you to design educational and training materials incorporating instructional technology. The 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. **This class can also count toward teacher recertification.**

### **EDU 275 Special Topic: 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.

### **EDU 275 Special Topic: Field Based Experience**

**1 credit**

EDU 275 provides you with experiences in the "real world" of the classroom and gives them input for wise and early career choices.

## **EGT - Engineering Graphics Technology**

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(See CAD for more listings)

### **EGT 220 Introduction to Civil Graphics Technology**

**3 credits**

Prerequisite: Basic 3D knowledge or permission of instructor

EGT 220 introduces the fundamental concepts and drafting principles required of a civil engineering technician. Covers roles, required skills and responsibilities of a civil engineering technician, terminology, types of civil drafting and employment opportunities, classes of maps and map projections, typical drawing formats, current drafting and CAD practices, and mapping resources.

### **EGT 221 Land Surveying Concepts**

**3 credits**

Prerequisite: EGT 220 or permission of instructor

EGT 221 enables you to apply map symbols, calculate and measure map scales, describe land parcels, write and lay out legal descriptions, describe land using the Public Land Survey System. Teaches student to interpret and reduce field notes, lay out horizontal and vertical angles, bearings, azimuths, coordinates and traverses, mathematically close a boundary survey, interpret G.P.S. data and create a computer database. Includes lecture, computer drawing, and small project work.

### **EGT 222 Topographic Map Concepts and Earthwork**

**3 credits**

Prerequisite: EGT 220 or permission of instructor

EGT 222 shows you how to identify and interpret topographic symbols, interpret different types of survey data, construct topographic map models, interpolate contours, set up grading plans, grade calculations, research resources for topographic maps, and identify map scales.

### **EGT 230 Drafting and Design I**

**6 credits**

Prerequisite: CAD 110 or equivalent

EGT 230 develops a fundamental understanding of concept design using 2D drawings. Project management for a complete set of Construction Drawings is emphasized, as well as pertinent design data relative to the AAS degree emphasis. Use of Model Space / Paper Space, floating viewports manipulation, external references, and interface tools is emphasized. Material is relative to certificate or degree program.

### **EGT 231 Drafting and Design II**

**6 credits**

Prerequisite: CAD 110 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. 3D Applications are used from the basic understanding to the most complex design.

## **EIC- Electricity - Industrial/ Commercial/ Residential**

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[www.rccc.edu/constructiontech](http://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. The course emphasizes the National Electrical Code.

### **EIC 104 Basics of Indust. 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 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. The course emphasizes proper use of tools and safety.

### **EIC 120 Electrical Installation II** **4 credits**

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. The course 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 101)**

**1.5 credits**

EIC 134 addresses new and existing buildings with specific requirements that directly influence the safety of people and protection of property and equipment. The course is 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: 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**

Prerequisites: EIC 150 or permission of instructor.

EIC 155 emphasizes resistance, current, voltage and power in AC, 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. The course 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 150 or permission of instructor.

EIC 160 covers the proper techniques for using electrical instruments, including volt/ohm, amp, phase-rotation, oscilloscopes and recording meters. The course focuses on instrument transformers for journeymen and in-plant electricians.

### **EIC 165 Solid State Devices and Circuits**

**4 credits**

Prerequisites: EIC150, EIC155 or permission of instructor

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. The course 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 you 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. The course 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. It focuses on the implementation of a maintenance program or improvement of an existing program. The course 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. It 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**

Prerequisites: EIC 130, EIC 135 or permission of instructor

EIC 210 is an Advanced National Electrical Code course for the in-plant technician. The course emphasizes how to 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 is 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 150 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. You will design control systems to meet assigned conditions, use principles of relay logic to prepare correct ladder diagrams and wire up, and 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. It incorporates working at a troubleshooting station with circuits that are identical to motor control circuits in a plant. The course 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. The course includes theory and measurement, methods for temperature, pressure, level and flow. It incorporates hands-on training equipment to measure temperature and pressure and perform calibration of a pressure differential transmitter. The course 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. The course 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**

Prerequisites: EIC 150 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. The course 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. You will design, implement, and test control systems in the laboratory to meet specifically assigned control problems. The course emphasizes accuracy, safety, and National Electrical Code requirements.

**EIC 226 PLC Controllers Advanced****1.5 credits**

Prerequisite: EIC 224 or permission of instructor

EIC 226 studies the advanced uses and applications of programmable logic controllers toward automated equipment, machines and processes. The course 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. It 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, and 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. It 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. The course 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**

#### **1.5 credits**

EIC 234 incorporates the latest technological equipment to include demonstrations with participant interaction as well as hands-on lab exercises. This course 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. The course 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. The course focuses on advanced layout and principles involved in fire alarm system design and construction and allows you 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. The course serves as the non-vendor dependent certification course for levels 1, 2, and 3, and focuses on building real world fiber networks with extensive hands on certification and written exams that prepare you for the versatility of actual work environments.

### **EIC 251 Fiber Optics Advanced**

#### **1.5 credits**

EIC 251 covers 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. The course serves as a non-vendor dependent certification course for levels 1, 2, 3, and focuses on building real world fiber networks with extensive hands on certification and written exams that prepare you 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. The course serves as a non-vendor dependent certification course for levels 1, 2 and 3. It focuses on building real world fiber networks with extensive hands on certification and written exams that prepare you 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. The course focuses on understanding current networking alternatives and the impact on business decisions and opportunities.

### **EIC 255 Electrical Issues for Telecommunications**

#### **0.5 credits**

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. The course emphasizes home automation, complex office electrical systems and A/V contractors, and includes the use of network simulators.

### **EIC 258 Voice Data Cat Distribution**

#### **1 credit**

EIC 258 focuses on voice/data coaxial distribution certification for residential, multi-occupant, 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. The course 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 credits**

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. It examines the job layout, products used and execution of the project, and 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 you in the latest technology and techniques available for code and standards compliant grounding and bonding systems. It 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. The course serves as a non-vendor dependent certification course for levels 1, 2 and 3, and focuses on building real world fiber networks with extensive hands on certification and written exams that prepare you for the versatility of actual work environments.

### **EIC 275 Special Topics**

#### **0.5-12 credits**

Prerequisite: Permission of instructor  
EIC 275 provides you 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 you with the opportunity to supplement coursework with practical work experience related to their educational program. You will 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. You will 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](http://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 you 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 System**

**3 credits**

EMP 109 explores the dynamics of managing major emergency incidents and examines the National Incident Management System.

### **EMP 240 Leadership and Influence**

**3 credits**

EMP 240 examines the dynamics of leadership techniques as they apply to emergency and disaster situations.

### **EMP 241 Decision Making and Problem Solving**

**3 credits**

EMP 241 enables you 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 you an opportunity to practice and expand on public information skills in a crisis environment.

## **EMS- Emergency Medical Services**

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[www.rrcc.edu/ems](http://www.rrcc.edu/ems)

### **EMS 115 First Responder**

**3 credits**

EMS 115 provides you 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

Corequisite: EMS 170

EMS 125 enables you, 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 or less than 6 months expired EMT Basic certification; permission of instructor

EMS 126 provides required didactic and skills review for renewing EMT students.

### **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. It 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.

### **EMS 180 EMT-Clinical Internship**

**2 credits**

Prerequisite: Current Colorado State EMT Basic certification; permission of instructor.

EMS 180 provides the Emergency Medical Technician (EMT) with supervised clinical learning experience that goes beyond the initial EMT requirements for the State of Colorado Department of Health. The course enables you to work with an assigned preceptor for 90 hours of clinical experience to develop an understanding of the role and responsibilities of the EMT-Basic.

### **EMS 214 Basic Trauma Life Support**

**1 credit**

Prerequisite: EMT-Basic or higher certification

EMS 214 provides you 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](http://www.rccc.edu/english)

### **ENG 030 Basic Writing Skills**

#### **2 credits**

ENG 030 focuses on sentence and basic paragraph structure and development. 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 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 you 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 online, 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 Resumés and Cover Letters**

#### **1 credit**

ENG 119 provides an introduction to writing resumés and cover letters. You 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, ESL 053, 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. You will 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 writing a variety of technical documents. The course focuses on principles for organizing, drafting 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**

ENG 221 teaches techniques for creative writing. The course explores imaginative uses of language through creative genres (fiction, poetry, literary nonfiction) with emphasis on your own unique style, subject matter and needs.

### **ENG 226 Fiction Writing**

#### **3 credits**

Prerequisite: ENG 221 or permission of instructor

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**

Prerequisite: ENG 221 or permission of instructor

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 you 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 you 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.

## **ENT - Engineering Technology**

### **ENT 106 - Print Reading for Manufacturing**

#### **Credits: 3**

Prerequisites: None

ENT 106 focuses on blueprint reading techniques related to manufacturing operations. The course will cover basic drafting standards, sketching, machine shop math, symbol interpretation, tolerance, and dimensioning standards.

### **ENT 146 Construction Materials and Methods**

#### **3 credits**

ENT 146 focuses on basic knowledge of construction materials, how they are manufactured, and their application in light commercial and industrial structures.

# ENV - Environmental Science

## ENV 101 Introduction to Environmental Science with Lab 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.

# ENY - Energy Technology

## ENY 101 Introduction to Energy Technologies

### 3 credits

ENY 101 introduces the energy technologies in use today and those that are in the research stage as possible alternatives. The course presents technologies including active solar heating, passive solar heating, wind energy systems, biomass, photovoltaic, co-generation, low and high head hydro, hydrogen, geothermal, power towers and energy storage systems.

# ESL - English as a Second Language

[www.rccc.edu/international](http://www.rccc.edu/international)

## ESL 012 Intermediate Pronunciation

### 3 credits

Prerequisite: appropriate placement score

ESL 012 provides listening, speaking and reading activities that help you recognize and produce a variety of stress and intonation patterns in English. It helps you to produce problematic English sounds.

## ESL 033 Advanced Conversation 3 credits

Prerequisite: appropriate placement score

ESL 032 provides you with opportunities to increase the listening and speaking skills required in academic and work situations. It emphasizes vocabulary building, listening and note-taking strategies, as well as questioning, discussion, and presentation skills.

## ESL 043 Advanced Reading 3 credits

Prerequisites: completion of Intensive English Program or appropriate placement score.

ESL 043 prepares you for academic reading assignments. It assists you to read more accurately and critically through the development of vocabulary knowledge and reading skills. It introduces research skills.

## ESL 053: Advanced Composition 3 credits

Prerequisites: completion of Intensive English Program or appropriate ACCUPLACER score.

ESL 053 reviews paragraph organization and develops the skill of writing essays using selected rhetorical modes. It emphasizes accurate use of advanced grammatical structures. It includes summarizing, paraphrasing, and research writing.

## ESL 091 Basic Intensive English 8 credits

Prerequisite: appropriate assessment score

ESL 091 develops and strengthens oral and written communication in English for non-native speakers at the basic level by focusing on the four skills: grammar, reading, writing, and listening/speaking. It provides the first of six levels of intensive English as a second language.

## ESL 092 High Basic Intensive English

### 8 credits

Prerequisite: ESL 091 or appropriate assessment score

ESL 092 develops and strengthens oral and written communication in English for non-native speakers at the high basic level by focusing on the four skills: grammar, reading, writing, and listening/speaking. It provides the second of six levels of intensive English as a second language.

## ESL 093 Low Intermediate Intensive English

### 8 credits

Prerequisite: ESL 092 or appropriate assessment score

ESL 093 develops and strengthens oral and written communication in English for non-native speakers at the low intermediate level by focusing on the four skills: grammar, reading, writing, and listening/speaking. It provides the third of six levels of intensive English as a second language.

## ESL 094 Intermediate Intensive English

### 8 credits

Prerequisite: ESL 093 or appropriate assessment score

ESL 094 develops and strengthens oral and written communication in English for non-native speakers at the intermediate level by focusing on the four skills: grammar, reading, writing, and listening/speaking. It provides the fourth of six levels of intensive English as a second language.

## ESL 095 High Intermediate Intensive English

### 8 credits

Prerequisite: ESL 094 or appropriate assessment score

ESL 095 develops and strengthens oral and written communication in English for non-native speakers at the high intermediate level by focusing on the four skills: grammar, reading, writing, and listening/speaking. It provides the fifth of six levels of intensive English as a second language.

## **ESL 096 Low Advanced Intensive English**

**8 credits**

Prerequisite: ESL 095 or appropriate assessment score

ESL 096 develops and strengthens oral and written communication in English for non-native speakers at the low advanced level by focusing on the four skills: grammar, reading, writing, and listening/speaking. It provides the sixth of six levels of intensive English as a second language.

## **ESL 275 Special Topics: Semi-Intensive ESL**

**6 credits**

Prerequisites: appropriate assessment score

ESL 275 develops and strengthens oral and written communication in English for non-native speakers at the intermediate level by focusing on the four skills: grammar, reading, writing, and listening/speaking.

## **ESL 276 Special Topics: iBT TOEFL Preparation**

**4 credits**

Prerequisite: successful completion of Intensive English Program or appropriate assessment score

ESL 276 provides non-native speakers of English with training for the iBT TOEFL exam. TOEFL is required for non-native speakers who wish to continue their education in four-year college and university settings. The integrated speaking, listening, reading, and writing skills required for the new iBT TOEFL are emphasized in this course.

# **EST – Esthetician**

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## **EST 110 Introduction to Facials and Skin Care**

**3 credits**

EST 110 provides a basic understanding of massage manipulations when providing facials, the study of skin in both theory and practical applications, and the benefits derived from proper facial and skin care routines. Training is conducted in a classroom or lab setting using mannequins or models.

## **EST 111 Intermediate Facials & Skin Care**

**2 credits**

EST 111 covers theory and practical application pertaining to anatomy, skin disorders, skin types and facial shapes. You will help patrons to select the proper skin care treatment. Practical and theory application can be done in specialized classes or supervised salon (clinical) setting using models or customer service.

## **EST 210 Advanced Massage & Skin Care**

**2 credits**

EST 210 provides you with advanced techniques in massage, skin care, and lash/brow tinting. Theory and practical procedures ready you for employment. Instruction is provided in specialized classes or in a supervised salon (clinical) setting. Student preparation for State Board Licensing Examination is covered.

## **EST 211 Facial Makeup**

**1 credit**

EST 211 provides instruction on cosmetics and their functions. The importance of color theory, facial types, and skin tones as they relate to facial makeup is covered. Instruction from the basic makeup application to the corrective makeup procedure is taught. Disinfection and sanitation is taught as it pertains to all aspects of makeup.

## **EST 212 Hair Removal**

**3 credits**

EST 212 provides in-depth study and practice of hair removal and the practice of patron protection and safety. Training for general waxing and body waxing procedures are provided. Demonstration of disinfection and sanitation as it pertains to Colorado rules and regulations will be practiced.

# **FIW– Fine Woodworking**

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## **FIW 100 Fundamentals of Woodworking**

**4 credits**

FIW 100 introduces you 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. 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 you how to build a guitar from scratch. Beginning with raw materials, you are expected to build a classical based guitar. As the guitars are built, you will learn many of the skills which distinguish the art of Lutherie.

## **FIW 103 Steel String Guitar Construction**

**5 credits**

FIW 103 takes you through the actual process of creating a steel string guitar from scratch. Beginning with raw materials, you are 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 you 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 101, 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. The course enables you 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 108 Toolmaking and Jigs**

### **4 credits**

Prerequisite: FIW 100, FIW 101, 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. The course 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 you to the various components of cabinetmaking. The course will teach you 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 101, 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. The course 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 you 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 you how to create unique turning through the use of finish applications, burning, inlays, and texturing.

## **FIW 122 Wood Carving**

### **4 credits**

FIW 122 allows you to experiment with knife and gouge to discover the many possibilities of wood decoration through carving and the qualities of numerous materials. Ultimately you are expected to produce samples of chip and relief carvings to demonstrate what's been learned.

## **FIW 125 Finishing Wood**

### **4 credits**

FIW 125 allows you to research the wide variety of finishes available from the oldest formulations to the bewildering array of modern films and stains. You will 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**

Prerequisites: FIW 100, FIW 101, FIW 109 or permission of instructor  
FIW 128 involves the planning, design, selection and purchase of materials, construction, finishing and hanging of a door you have made. Assorted styles of door construction, joinery, glues and fabrication techniques are examined.

## **FIW 200 Veneering and Marquetry**

### **4 credits**

Prerequisites: FIW 100, FIW 101, 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 are covered.

## **FIW 201 Joinery**

### **4 credits**

Prerequisite: FIW 100, FIW 101, 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. You 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 uses chair construction to examine some of the alternatives of machine and hand-tool construction as illustrated by seat shaping through router surfacing vs. inshave use, for example. Spindle turnings, spokeshave use and compound angles may be encountered in constructing a chair. Chair style often dictates resolving construction dilemmas such as jointing compound curves and jig making for tapered legs with fluting or reeding.

### **FIW 208 Furniture Repair**

#### **4 credits**

Prerequisites: FIW 100 (or equivalent) and FIW 125

FIW 208 recognizes the need to repair and restore furniture and allows you to explore jigs, veneer repair, replacing broken pieces and reassembling reconditioned furniture. You are expected to provide furniture of sufficient complexity to challenge their abilities. Joinery, carving, stripping, and refinishing are topics covered in this course.

### **FIW 209 Cabinetmaking**

#### **4 credits**

Prerequisites: FIW 109, FIW 100, FIW 101 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**

Prerequisites: FIW 100, FIW 101, 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 pattermaking; 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**

Prerequisites: FIW 201 and FIW 206  
FIW 215 examines all types of joinery from decorative to the most complex of hand and machine cutting techniques. You will 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 209

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 you with various types/designs of cabinets used in residential/commercial construction. Construction of shop-built cabinets including a variety of door styles and the proper use of power tools for creating various designs is expected. The uses and application of plastic laminates are explored and you 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 you 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 or FIW 209

FIW 220 is designed to assist you in organizing their woodworking abilities. By the time you take this course, you should have a stable base of skills and abilities. Your completion of this project should demonstrate your understanding of advanced woodworking techniques, the ability to create and use 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 furnituremaking from the biblical era to contemporary times and building a reproduction piece. You will examine then and now techniques and materials while selecting the construction process for their individual piece. Period reproduction becomes musical instruments, boats or other items as you become involved in their research.

## **FIW 275 Special Topics**

**0 – 6 credits**

FIW 275 provides you 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 you 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 you with the opportunity to apply your skills in a real woodworking environment.

## **FRE- French**

[www.rccc.edu/languages](http://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**

Prerequisite: 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**

Prerequisite: 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**

Prerequisite: 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**

Prerequisite: 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

## **FST- Fire Science Technology**

[www.rccc.edu/fire](http://www.rccc.edu/fire)

### **FST 100 Firefighter I 9 credits**

Prerequisite or Corequisite: 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. The course emphasizes extinguishing methods and equipment, special extinguishing agents, and special hazard considerations. It 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**

Prerequisites: 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. The course 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 is 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 you with the knowledge and skills to handle low and high angle rescues using rescue rope and associated hardware. The course takes you 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. You 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. You will 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 151 Driver-Operator 4 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. The course includes fire line safety, emphasizing the wildland fire orders and watch out situations. You will receive training qualifying them as Certified Wildland Firefighters under the Incident Command System, recognized by the National Wildfire Coordinating Group. This course 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, including 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 you 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**

Prerequisites: 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**

Prerequisites: FST 105 and MAT 090  
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**

Prerequisites: FST 102, 104, 105, or permission of instructor  
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, and recognition and preservation of evidence. The course includes arson law, Constitutional law, interviewing, court procedures, and testimony.

### **FST 206 Fire Company Supervision and Leadership** **3 credits**

Prerequisites: 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. The course meets the 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 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, and command and control of hazardous materials incidents.

### **FST 255 Fire Service Management**

**3 credits**

Prerequisites: FST 202 and FST 206, or 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. It introduces you to current management practices and philosophies and real-world applications from the supervisor's point of view. The course 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. The course 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. The course also covers fireline safety, size-up, incident planning, ordering, tactics, strategies, and administrative duties.

### **FST 260 Intermediate Fire Behavior**

**S290**

**2 credits**

FST 260 analyzes the effects of fuels, weather, topography, and fire behavior on the wildland fire environment and 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. The course covers fire environment, fuels classification, topography and fire behavior, temperature-moisture relationship, fuel moisture, local and general winds, atmospheric stability and instability, keeping current with the weather, extreme fire behavior, fire behavior affecting fireline tactics, and fire behavior predictions.

### **FST 262 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 and 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. It enables you to develop skills and to work with a helicopter in performing tasks common to all helicopter operations.

### **FST 265 Ignition Operations S234**

#### **2 credits**

Prerequisite: 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. It 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 related safety concerns.

### **FST 266 Crew Boss S230**

#### **2 credits**

Prerequisite: 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. The course 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, and 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 you with a vehicle to pursue in-depth exploration of special topics of interest not previously offered. The course 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. You will engage in intensive study or research under the direction of a qualified instructor.

## **GEO- Geography**

[www.rccc.edu/humanities/geography](http://www.rccc.edu/humanities/geography)

### **GEO 105 – World Regional Geography**

#### **3 credits**

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. The course focuses on analysis of interrelationships between developed and developing regions and the interactions between human societies and natural environments.

### **GEO 106 – Human Geography**

#### **3 credits**

GEO 106 introduces geographic perspectives and methods with applications to the study of human activities. The course emphasizes the distribution of humans, adjustments to the natural environment, and land use practices.

## **GED – General Education**

### **GED 011 GED Preparation**

#### **1 credit**

GED 011, an open-entry, self-paced course, is designed for students who need to prepare to pass the five GED tests: science, social studies, reading, writing and mathematics. Diagnostic tests determine skill level. You will work at your own pace. Help is available in the five subject areas. A free pre-GED test is available.

### **GED 011 Preparación para el GED en Español**

#### **1 crédito**

GED 011 es una clase de salón es diseñada para los estudiantes que necesitan prepararse para aprobar los cinco exámenes del GED: ciencias, estudios sociales, lectura, escritura y matemáticas. Pruebas diagnósticas determinan el nivel de las destrezas. Se ofrece ayuda en las cinco materias. Un examen Pre-GED gratis está disponible.

## **GER- German**

[www.rccc.edu/languages](http://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

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[www.rccc.edu/science/geology](http://www.rccc.edu/science/geology)

**GEY 111 Physical Geology with Lab**

**4 credits**  
GEY 111 studies the materials of the earth, its structure, surface features, and the geologic processes involved in its development.

**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 121 Historical Geology with Lab**

**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.

**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.

**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.

## **GIS- Geographic Information Systems**

### **GIS 101 Introduction To Geographic Information Systems 3 credits**

GIS 101 surveys the development and operation of automated geographic information systems. The course focuses on the fundamentals of using computers to draw maps and incorporates the study of cartographic fundamentals such as map projections, map scales, selective display of data on maps, and various computer software applications in GIS.

### **GIS 110 Introduction To Cartography 3 credits**

GIS 110 examines a broad range of map types, emphasizing maps as a communication system with both symbology and specific organizational hierarchies. Discussion and demonstration focuses on essential cartographic principles and practices used for designing maps, with emphasis on cartographic protocol resulting in the effective communication of both qualitative and quantitative information.

## **HHP- Holistic Health Professional**

### **HHP 100 Complementary Healing Methods**

**1 credit**

HHP 100 explores some of the more widely used alternative/complimentary healing methods. It expands your health horizons and enables you to converse in a knowledgeable manner with patients and practitioners.

### **HHP 103 Intorduction to Circle of Healing**

**1 credit**

HHP 103 enables you 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 credits**

HHP 104 explores the scientific research surrounding mind-healing as well as enhancing mind-body communication skills.

### **HHP 105 Phytotherapy and Disease Prevention**

**1 credit**

HHP 105 offers herbal pharmacognosy with disease prevention. Plant chemicals are an important source not only for medicines but for compounds that prevent disease. You will develop a basic understanding of phytochemical classification and explore plant compounds chemically and how they act on the body.

### **HHP 110 Neurolinguistic Programing**

**0.5 credits**

HHP 110 explores practical skills that enhance and expand your 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. The course focuses on the habitat, harvesting, storage, and usage of a select group of herbs

### **HHP 125 Feldenkrais Awareness Through Movement**

**0.5 credits**

HHP 125 incorporates a series of lessons in how the body functions and how to use it more intelligently. Through gentle and exploratory movements, you will learn to retrain the central nervous system and free yourself from habitual patterns of moving, thinking, and feeling that contribute to stress and dis-ease. Through increased bodily awareness, you will examine ways to move more easily during activities from vigorous sports to breathing, standing, and walking.

### **HHP 130 Reiki Level One**

**1 credit**

HHP 130 explores the traditional Usui use of Reiki. The course covers the history and development of Reiki work, beginning in Japan, to Hawaii, to the U.S., and later Europe, and focuses on the fundamental beliefs and the dynamics of the Reiki process. It 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 builds on knowledge obtained in HHP 135; you will explore how personal boundaries and other inner resources are necessary before you can safely release and heal trauma.

### **HHP 145 Digestive Wellness**

#### **1 credit**

HHP 145 provides you with information on nutritional and herbal self-care treatments.

### **HHP 160 Learn to Meditate**

#### **0.5 credits**

HHP 160 focuses on techniques to meditate and explores the life-enhancing benefits of meditation.

### **HHP 164 Introduction to Hand Reflexology**

#### **1 credit**

HHP 164 teaches hand anatomy, basic stroke techniques, and hand reflex points. Reflexology is a gentle art that holistically facilitates opening the channels for healing energy to circulate to all parts of the body. The benefits of reflexology include stress reduction and deep relaxation, improved circulation, cleansing of body toxins and impurities, energy revitalization, and preventative health care.

### **HHP 166 Introduction To Reflexology**

#### **1 credit**

HHP 166 provides you with 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. The course explores enhancing awareness and interpretation of feelings.

### **HHP 168 Turaya Meditation**

#### **1 credit**

HHP 168 introduces you to the fundamentals of turaya meditation which uses higher consciousness energy symbols to accelerate your movement.

### **HHP 169 Introduction to Healing Hands and Feet**

#### **1 credit**

HHP 169 studies combining the gentle healing hand energy work and gentle foot massage of reflexology in order to bring harmony to the body, mind, spirit, and emotions. You will be provided with the knowledge of how to combine these healing modalities in their healing practice. Seven major energy charkas, how they affect one's own self-healing, and the four energy fields that surround people will be explored.

### **HHP 190 Crystal and Mineral Usage in Health Care**

#### **0.5 credits**

HHP 190 introduces you to crystal and mineral types, their properties and how to clear, clean, and use for personal use or with clients. The course incorporates hands-on experience to feel the different energies of crystals and minerals.

### **HHP 202 Aromatherapy**

#### **0.5 credits**

HHP 202 informs you of the use of essential oils in health maintenance and the healing of disease. (Tantalizing data from the ancient Egyptians exists and has been verified by modern scientific research.) The course explores the pharmacokinetics and neurophysiology of essential oils, looking into their origins, extraction, storage, and use. This course enables you to observe a large number of essential oil remedies and their applications.

### **HHP 203 Women's Holistic Health**

#### **0.5 credits**

HHP 203 explores women's health issues including contraception, hormone therapy, dysfunctional uterine bleeding, diagnostic testings, and other topics.

### **HHP 205 Herbology**

#### **1 credit**

HHP 205 explores the pharmacokinetics and composition of herbs and their effect on the body systems and focuses on the habitat, harvesting, storage, and use of a select group of herbs. The use of herbs in health maintenance and the healing of disease predates written history. Herbs have been found by archeologists in Paleolithic burials and throughout literature of the ancient Chinese and Egyptians verified by modern scientific research.

### **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 credits**

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 credits**

HHP 213 explores individual development through the life span. The course 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 leading 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. You will evaluate your lifestyle and develop an individual concept of wellness and optimal health by tapping into your 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 and includes both didactic information and experiential learning. This course enables you to learn how the role of art in healing has evolved over the years and how to explore different models, approaches, and focuses of healing through visual art. A secondary goal of the course is to help you discover, through art, things about yourself which can enhance your professional work.

## **HHP 221 High Level Wellness**

### **1 credit**

HHP 221 explores the positive dimensions of healthy lifestyles and covers the techniques required 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 non-invasive, performed with light touch on various acupuncture points on the body. This course enables you to learn to identify, access, open, and balance the energy of yourself 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 credits**

HHP 227 assists you in acquiring essential skills in communication, conflict resolution, negotiation, and team building.

## **HHP 228 Solution Focused Personal Coaching**

### **0.5 credits**

HHP 228 explores the practice of the effective, quick, Emotional Freedom Technique (EFT), allowing you and others to become more focused.

## **HHP 229 Wellness Counseling**

### **1 credit**

HHP 229 provides the tools to facilitate yourself and others in the movement towards wellness. It enables you to learn assessment and basic counseling skills to establish contacts and goals for change.

## **HHP 230 Jin Shin Level Two**

### **2 credits**

HHP 230 allows the student who has completed HHP 223 to gain advanced experience with this hands-on non-invasive Chinese technique. An expansion of Jin Shin Level One material includes how to read combination pulses and to do flows that balance the body at deeper levels. At the end of Jin Shin Level Two, you will be able to take pulses and administer a full session of Jin Shin to yourself and others. A certificate will be issued to passing students that will place them at Jin Shin Practitioner status within the High Touch Jin Shin Network.

## **HHP 231 Spiritual Renewal**

### **0.5 credits**

HHP 231 enables you to develop practical approaches for caregivers' 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. The course explores the dialog between eastern and western health care and the many choices which could enhance health and well-being.

## **HHP 236 Dance Therapy and Healing**

### **0.5 credits**

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 credits**

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 credits**

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**

Healing Touch is energy-based therapeutic approach to healing. The course enables you to develop and use touch as a means of assessing a client's/patient's 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, you are 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. You will gain the specific skills necessary to become an advanced practitioner. The course emphasizes experiential learning and focuses 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**

HHP 244 introduces holistic philosophy, theory and practice and how it integrates with nursing in the art and science of caring and healing. The course focuses on conscious application of self-responsibility, caring, human development, stress reduction, communication, problem-solving, teaching, learning, leadership, and change.

**HHP 245 Healing Touch Level III**  
**1 credit**

HHP 245 includes further development of Higher Sense Perception (HSP), sequencing of healing techniques, working with guidance, self-healing, self-development, learning about other healers, and advanced healing methods. Level III Healing Touch is for students who have completed Level I and Level II and desire more in-depth experience. (30 Continuing Education Contact Hours).

**HHP 246 Reiki Level II**  
**1 credit**

Prerequisite: HHP 130

HHP 246 builds upon the knowledge and skills obtained in HHP 130. You will learn the meaning of the three traditional Usui symbols. It incorporates in-depth discussion about application of the three symbols. You will 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 is available at completion.

**HHP 249 Journaling the Healing Journey**  
**1 credit**

HHP 249 incorporates using a journal as an effective tool for looking at personal growth process, as well as for helping clients in their healing process. The course teaches journaling skills and how to focus specifically on healing through various techniques.

**HHP 254 Holistic Health Level II**  
**2 credits**

Prerequisite: HHP 244

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**

Prerequisites: 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 of 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. The course focuses on connecting with the spiritual part of people and provides 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. It continues the basic reflexology class and allows you to work on hand positions while addressing specific techniques for specific issues.

**HHP 262 Psychoneuroimmunology**  
**0.5 credits**

HHP 262 studies the inter-relationship of the body-mind connection and explores the physiological and psychological interaction between the brain, the immune system, and the endocrine system.

**HHP 263 Creating a Holistic Practice**  
**0.5 credits**

**0.5 credits**

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 provides tools for increasing personal power.

**HHP 267 Living Without Limits**  
**0.5 credits**

HHP 267 focuses on the steps that can be taken to clarify goals, obtain support for challenges, and act effectively to accomplish your 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 yourself and others.

# HIS- History

[www.rcc.edu/humanities/history](http://www.rcc.edu/humanities/history)

## **HIS 101 Western Civilization I**

### **3 credits**

HIS 101 explores a number of events, people, groups, ideas, institutions, and trends that have shaped Western Civilization from the prehistoric era to 1650. The course 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, people, groups, ideas, institutions, and trends that have shaped Western Civilization from 1650 to the present. The course 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 111 World Civilization I**

### **3 credits**

HIS 111 enables you to view history up to 1500 CE in a broad global sense. This course focuses on the common denominators among all people. This approach goes beyond political borders to provide a better appreciation for different cultures.

## **HIS 112 World Civilization II**

### **3 credits**

HIS 112 enables you to view history post-1500 CE in a broad global sense. This course focuses on the common denominators among all people. This approach goes beyond political borders to provide a better appreciation for different cultures.

## **HIS 201 United States History I**

### **3 credits**

HIS 201 explores events, trends, people, 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, people, 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. The course 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 235 History of the American West**

### **3 credits**

HIS 235 traces the history of the American West from the Native American cultures and the frontier experiences of America's earliest, eastern settlers through the Trans-Mississippi West, across the great exploratory and wagon trails, and up to the present West, be it urban, ranching, reservation, resource management, or industrial. The course emphasis is the northern and central parts of the West.

## **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 247 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. The course emphasizes the interactions of global regions and nation-states.

## **HIS 275 Special Topics**

### **3 credits**

HIS 275 focuses on the exploration of current topics, issues, and activities related to one or more aspects of history.



# HPR- Health Professional

www.rrcc.edu/health

## HPR 102 CPR for Professionals 0.5 credits

HPR 102 meets the requirement for the American Red Cross Professional Rescuer CPR or American Heart Association Basic Life Support for those who work in emergency services, health care, 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 credits

Prerequisite: Current health care provider CPR card  
HPR 103 provides the opportunity for currently certified CPR providers to renew certificates.

## HPR 106 Law and Ethics for Health Professions 2 credits

HPR 106 advances your knowledge in the study and application of medico-legal concepts in medical careers and establishes a foundation for ethical behavior and decision-making.

## HPR 108 Dietary Nutrition 1 credit

HPR 108 studies the basic principles in clinical practice involved in the assistance of health care. The course will cover factors which influence the nutritional status of individuals, methods of nutritional assessment and support, and diet modification for specific disease states.

## HPR 112 Phlebotomy 4 credits

HPR 112 teaches the duties associated with the practice of venipuncture, capillary puncture, and special collection procedures. You will have experience with quality control, infection control and safety procedures as well as laboratory computer systems. Those students who successfully complete 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 credits

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 you 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 0.5 credits

HPR 126 provides maintenance of a uniform skill level and acts as a means of national recertification for Outdoor Emergency Care.

## HPR 130 Pediatric Advanced Life Support (PALS) 1 credit

HPR 130 provides the needed information and skills required by health care agencies for pediatric emergencies.

## HPR 131 Pediatric Advanced Life Support Renewal 0.5 credits

Prerequisite: Current PALS card  
HPR 131 provides updates and skill practice to complete renewal requirements for the 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 and is an integrated study of signs/symptoms, diagnostic tests, and treatment.

## HPR 150 Computing in Comfort 0.5 credits

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 credits

HPR 165 offers an in-depth discussion of 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** **2 credits**

HPR 178 introduces 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 health care setting.

### **HPR 180 Phlebotomy Internship** **3 credits**

Prerequisite: HPR 112

HPR 180 provides you with the opportunity to supplement course work with practical work experience related to your educational program. Documentation of immunizations and permission of instructor are required.

### **HPR 190 Basic EKG Interpretation** **2 credits**

HPR 190 provides instruction for interpretation of EKG strips, and 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: You must have an active Colorado RN license

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 215 Phlebotomy Refresher,** **1 credit,**

Permission of the instructor needed

Prerequisite: HPR 112

HPR 215 covers OSHA regulations, collection procedures, and requirements for various laboratory tests, phlebotomy technique, problem-solving, legal implications, and rights of the phlebotomist and patient.

### **HPR 218 Supervision and Delegation** **0.5 credits**

0.5 credits

HPR 218 covers the rules for delegation of nursing tasks, including documentation and supervision issues.

### **HPR 230 Trauma Assessment and Intervention** **1 credit**

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 credits**

0.5 credits

HPR 242 explores numerous areas in which nurses work and how to pursue jobs in those areas.

### **HPR 260 Bereavement Counseling** **0.5 credits**

0.5 credits

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**

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 credits**

0.5 credits

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/hhumanities](http://www.rccc.edu/hhumanities)

### **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 pre-eminent organizing principle, to the 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 Humanities: Early Civilizations** **3 credits**

3 credits

HUM 121 introduces you 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 Humanities: From Medieval to Modern** **3 credits**

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 Humanities: The Modern World** **3 credits**

3 credits

HUM 123 examines the cultures of the 17th through the 20th centuries by focusing on the inter-relationships of the arts, ideas, and history. The course considers the influences of industrialism, scientific development, and non-European people.

# HVA- Heating, Ventilation and Air Conditioning

[www.rccc.edu/construction](http://www.rccc.edu/construction)

## HVA 102 Basic Refrigeration

### 4 credits

Pre-requisite: HVA 100 or OSH 127 or 10-Hour OSHA card.

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

Pre-requisite: HVA 100 or OSH 127 or 10-Hour OSHA card.

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: OSH 127, HVA 105 or permission of the instructor

HVA 110 introduces you to the fundamentals of gas heating. You will 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

Co-requisite: OSH 127

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 you concerning the conditions required for proper operation with R-410a.

## HVA 113 Refrigerant Recovery Training

### 1 credit

Prerequisite: OSH 127, 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, you will be prepared to take the EPA certification test which is offered following the class. The test fee is not included in the course fee.

## HVA 114 Centrifugal Pumps

### 1.5 credits

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

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 credits

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. EPA certification testing plus HVAC Excellence Technician's Certificate testing are offered.

## HVA 132 Air Conditioning and Refrigeration Controls

### 4 credits

Prerequisites: 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 addresses the 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. You will 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 include: tools, safety, common materials, and installation standards and practices. The course will cover fabrication of transitions and common fittings.

## HVA 162 Heating Controls

### 4 credits

Prerequisites: 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 credits

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 your knowledge of basic hydraulics to become a better troubleshooter who understands lower maintenance costs. Training stations are used 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 components work leads to an understanding of how and why they fail.

**HVA 194 Fundamentals of Pneumatic Controls****1.5 credits**

HVA 194 introduces the subject of pneumatic comfort controls. It is device-oriented and provides a thorough treatment of those devices commonly used 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. You 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 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 226 Boiler Operator****1.5 credits**

Prerequisite: Documented boiler experience or permission of the instructor

HVA 226 gives you the 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**

Prerequisites: 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. You will work with controls from most of the major manufacturers.

**HVA 232 Advanced Air Conditioning and Refrigeration Controls****4 credits**

Prerequisites: 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**

Prerequisites: HVA 100 or OSH 127, HVA 102, 105, 113, 132  
HVA 233 builds on the skills acquired in refrigeration fundamentals. You will have an opportunity to study and to work on rooftop units, ice machines, and commercial reach-in and walk-in coolers.

**HVA 240 Servicing Forced Air Systems****4 credits**

Prerequisites: HVA 100 or OSH 127, HVA 110, 105, 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**

Prerequisites: HVA 105, HVA 110, HVA 111 or PLU 101, 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 convector sizing are also discussed.

**HVA 251 Building Automation I, Installer****4 credits**

Prerequisites: Basic understanding of PCs and Windows operating system, wiring skills, and HVAC experience  
HVA 251 provides you with an overview of building automation systems. This course helps you understand the installation of building automation devices with regard to HVAC equipment.

**HVA 252 Building Automation II, Service****4 credits**

Prerequisite: HVA 251.  
HVA 252 covers operating and modifying an installed building automation system. This is a highly interactive course in which 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. Instruction includes extensive hands-on workshops.

**HVA 257 Low-Pressure Steam Heating****4 credits**

Prerequisites: HVA 105, 110, 162, 206, 247, or permission of the instructor  
HVA 257 examines low pressure steam systems including boilers, piping, and heat convectors. Repair and maintenance of these systems is covered as well as the theory behind their operation. Boiler feed water and condensate systems are also discussed.

## **HVA 261 A/C Systems Service and Repair**

### **4 credits**

Prerequisites: HVA 100 or OSH 127, HAV 102, 105, or permission from instructor

HVA 261 emphasizes the service of HVAC systems. You will develop a preventive 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**

Prerequisites: HVA 100 or OSH 127, HVA 102, 105, 113, 132

HVA 263 introduces you to chillers and their operating parameters.

## **HVA 264 Evaporative Cooling Systems Water Treatment**

### **4 credits**

Prerequisites: HVA 100 or OSH 127, HVA 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 of these systems, water treatment, sizing, pumps, and piping.

## **HVA 267 Radiant Heating Systems**

### **4 credits**

Prerequisites: HVA 111 or PLU 101, HVA 110, 105, 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, you 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**

Prerequisites: HVA 110, 111 or PLU 101, HVA 162, 247, 267 or permission of the instructor

HVA 268 takes the operation of hydronic heating systems and allows you to apply the knowledge of advanced hydronic controls to them. You must have a solid field background or education in hydronic heating, electricity, and heating controls prior to enrollment.

## **HVA 269 Indoor Air Qualities 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 you 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 your course studies in a specific area.

## **HVA 285 Independent Study**

### **0.5-6 credits**

Prerequisite: Permission of 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](http://www.rccc.edu/health)

## **HWE 100 Human Nutrition**

### **3 credits**

HWE 100 introduces basic principles of nutrition with emphasis on personal nutrition. It satisfies the 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 you with those skills and emergency medical care techniques used by guides, trip leaders, and others providing primary care in backcountry setting. You will be able to respond correctly to those medical and trauma situations commonly encountered when entry into the EMS system is delayed or unlikely.

## **HWE 250 American Council on Exercise Personal Trainer Preparatory Course**

### **2 credits**

HWE 250 provides you with theoretical knowledge and practical skills in preparation for the American Council on Exercise (ACE) national certification exam in personal training. Topics include guidelines for instructing safe, effective, and purposeful exercise; essentials of the client-trainer relationship; conducting health and fitness assessments; and designing and implementing appropriate exercise programs.

# IMT- Industrial Maintenance Technology

www.rrcc.edu/isod

## IMT 100 Introduction to Industrial Maintenance

### 3 credits

IMT 100 provides you with an overall perspective and foundation for the industrial maintenance field. You will be taught the fundamentals of machine operations commonly used in the manufacturing industry. Topics such as general maintenance procedures, consumable supplies, fasteners, and machine operating specifications will be covered. In addition, high emphasis will be placed upon the understanding of machine blueprints which detail all the systems and which are part of a functioning machine. You also will be exposed to parts and specification manuals used in the repair of industrial machinery. Finally, you will begin to learn the logical process used in the diagnosis of broken, worn, and defective machinery.

## IMT 105 AC/DC Electrical Fundamentals

### 4 credits

IMT 105 provides you with an introduction to the fundamentals of AC/DC electricity, including resistance, current, voltage, and power as found in today's industrial environment. Electrical measurements, parallel and series circuit analysis, and basic trouble-shooting techniques will be included.

## IMT 110 Workplace Safety

### 3 credits

IMT 110 provides an introduction to the field of safety, health, and environmental concerns within the process industry. Within this course, you will be introduced to various types of plant hazards, safety and environmental systems and equipment, and the regulations under which processing plants are governed.

## IMT 120 Pumps, Compressors and Rotating Equipment

### 3 credits

Prerequisite: IMT 100 and IMT 110 or permission of instructor  
IMT120 provides an introduction to the principles of operation of centrifugal and positive displacement pumps and compressors. You will be able to identify and explain the function of various components within pumps and compressors, and trouble-shoot and disassemble and correctly reassemble pumps, compressors, and mechanical drives.

## IMT 125 Mechanical Drives and Bearings

### 3 credits

Prerequisites: IMT 100 and IMT 110 or permission of instructor  
IMT125 provides an introduction to the principles of the operation of mechanical drive systems and friction reduction devices. You will be able to identify and explain the function of the components of various mechanical drive systems found within industry, including chain and belt drives, sprocket selection and speed reduction calculations, bearing types and uses, installation and removal techniques, and introduction to machine alignment principles.

## IMT 140 Pipe and Piping Systems

### 2 credits

IMT140 will introduce the use of piping standards and specifications, the identification and use of various materials, and material take-offs. The installation and repair of industrial pipe systems commonly used in the conveying of gases and fluids will be covered. The course addresses manually and automatically operated valves, regulators, and other associated components. You will work with steel, copper, cast iron, and PVC pipe.

## IMT 150 Effective Problem Solving

### 2 credits

IMT 150 introduces you to individual and team problem-solving techniques and methodologies. Techniques for handling complex, multi-faceted system failures are presented. You must demonstrate use of the techniques at both the individual and team level.

## IMT 160 Basic Fluid Power

### 3 credits

Prerequisite: Basic Hydraulics  
IMT 160 course covers the fundamentals of fluid power, hydraulic transmission of force and energy, operation at the suction side of the pump, petroleum-based hydraulic fluids, fire-resistant hydraulic fluids, flow rates and velocity, properties of hydraulic fluids, and an introduction to control valves. This class will also cover hydraulic symbols and prints used in industry. (Lecture/Laboratory)

## IMT 200 Introduction to PDM Technologies

### 3 credits

Prerequisite: Permission of instructor  
IMT 170 introduces you to tools and techniques used in industrial machine condition assessment and condition monitoring, that is predictive maintenance. The successful student will understand the basic tools and methods used for vibration analysis, thermography, lubrication principles, and ultrasonic methods. You will be introduced to run-time analysis and machine MTBF and MTTR principles and machine operation economics.

### **IMT 210 Vibration Principles I** **3 credits**

Prerequisite: permission of instructor  
IMT 210 will introduce the principles and basic techniques of industrial machinery vibration analysis. Successful students will be able to calculate vibration frequency from time domain data; convert vibration units of measure and signal detection; read and interpret basic FFT spectra; recognize various vibration sensors, mounting methods, and instrumentation; and compare overall or single value vibration measurements against pre-established alert settings and perform basic FFT signature analysis.

### **IMT 211 Vibration Principles II** **3 credits**

Prerequisite: IMT 210 or permission of instructor  
IMT 211 is a continuation of IMT 210, and successful students will be able to select the appropriate machinery vibration measurement technique; maintain a database of results and trends; establish and implement general overall level alarms; set up instruments for the basic resolution of amplitude, frequency, and time; and perform basic vibration analysis of machinery and components, such as shafts, bearings, gears, fans, pumps, and motors using spectrum analysis. In addition you will be able to classify, interpret, and evaluate the test results in accordance with applicable specifications and standards; understand basic single plane balancing concepts; be aware of some causes and effects of bad measurement data; and perform basic bump tests to determine natural frequencies and recommend minor corrective actions

### **IMT 250 Industrial Lubrication Principles I** **3 credits**

Prerequisite: Permission of instructor  
IMT 250 will introduce the foundational principles and important considerations involved in properly lubricating industrial machines, including key components such as maintenance strategies; principles of surface protection; lubricant construction; lubricant selection for a variety of components, including rolling element bearings, plain bearings, gear drives, reciprocating engines, hydraulic systems, air compression systems, chains, cables and wire ropes; lubricant condition control; and lubricant storage and handling.

### **IMT 130 Industrial Instrumentation and Control I** **4 credits**

Prerequisites: EIC 105 and EIC 220 or permission of instructor  
IMT 130 introduces the basic concepts and terminology of process control systems. You will be presented the types of control systems, applicable component elements, basic control analysis, and documentation requirements for measuring instruments and signal conditioning. The fundamental scientific principles of process control including temperature, pressure, level, and flow measurements will be presented. Transducers, thermometers, and gauges are introduced, along with calibration.

### **IMT 230 Industrial Instrumentation and Controls II** **3 credits**

Prerequisite: IMT 230 or permission of instructor  
IMT 230 continues IMT 130 and covers common techniques for measuring the dynamic response of processes and tuning of control loops. Topics include transmitters and telemetering along with process control systems.

### **IMT 235 Networks and DCS** **4 credits**

Prerequisite: IMT 226 or permission of instructor  
IMT 235 presents computer automation including PLCs, SCADA, and PC-based systems to control processes. Topics such as PLC control and computer data acquisition are introduced. You will use existing systems or build systems and control these systems with PLCs and computer data acquisition systems. You will be assessed through test and project evaluations, and the course will be assessed by graduate feedback.

### **IMT 280 Internship** **4 credits**

Prerequisite: Permission of instructor  
PRO 280 provides you with the opportunity to supplement course work with practical work experience related to your educational program. You will work under the immediate supervision of experienced personnel at the business location and with the direct guidance of the instructor.

## **ITA- Italian**

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[www.rrcc.edu/languages](http://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 of 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.

# JOU- Journalism

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[www.rccc.edu/english](http://www.rccc.edu/english)

## **JOU 105 Introduction to Mass Media**

### **3 credits**

JOU 105 places the mass media in an historical and cultural perspective, considering the validity, integrity, and influence of the media in a democracy.

## **JOU 106 Fundamentals of Reporting**

### **3 credits**

JOU 106 introduces news writing, reporting, and interviewing with an emphasis on clarity, accuracy, completeness, timeliness, and fairness.

## **JOU 121 Photojournalism**

### **3 credits**

JOU 121 instructs you in photography for newspapers and magazines.

Traditional news photography, documentary photography, picture essay, and picture story formats are covered. Responsibility of the press, working conditions, and editorial photography are explored.

Both film and/or digital SLR cameras with manual settings may be used for this class.

## **JOU 206 Intermediate News Writing and Editing**

### **3 credits**

JOU 206 presents how to gather information as an investigative reporter through research of local, state, and federal government publications; how to cover police beat and city hall; how the courts and regulatory agencies function; and how to cover other challenges such as the environment, religion, science, medicine, public safety, and business.

# JPN - Japanese

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## **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**

Prerequisite: 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

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[www.rccc.edu/english](http://www.rccc.edu/english)

## **LIT 115 Introduction to Literature I**

### **3 credits**

LIT115 introduces you to fiction, poetry, and drama. The course emphasizes active and responsive reading.

## **LIT 127 Study of the Novel**

### **3 credits**

LIT127 focuses on careful reading and interpretation of selected novels representing types and periods of literature. You 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 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 205 Ethnic Literature**

### **3 credits**

LIT 205 focuses on significant texts by ethnic Americans, including African-American, Native American, Latino/a, and Asian Americans. The course emphasizes careful reading and understanding of the cultural and literary elements of the works.

## **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 seventeenth 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 eighteenth 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 course work 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.

## **MAC-Machining**

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### **MAC 101 Introduction to Machine Shop**

#### **3 credits**

MAC 101 covers safety procedures, use of bench tools, layout tools, power saws, drill presses, precision measurement tools, and various hand tools related to the machine shop. Also included are sharpening drill bits and general purpose turning tools for the lathe and determining speeds and feeds for both the lathe and the milling machine.

### **MAC 102 Blueprint Reading**

#### **3 credits**

MAC 102 teaches you to read blueprints and interpret symbols, notes, dimensions, and tolerances.

### **MAC 105 Introduction to Machining Technology**

#### **Credits: 4**

MAC 105 introduces you to the changing era of machining technology, emphasizing terminology, referencing, and applications related to manufacturing environments. The fundamental use of bench tools, layout procedures, materials, precision measuring tools, machining processes, drilling and cut-off machines, and other machining/manufacturing processes will be stressed. Skill competencies and standards will be identified. Use of the *Machinery Handbook* will be strictly required, and particular competencies may require performance evaluations.

### **MAC 110 Introduction to Engine Lathe**

#### **3 credits**

MAC 110 introduces basic lathe applications which consist of identifying lathe components and controls, understanding turning safety, calculating speeds and feeds, using various tools and tool holders, identifying basic tool geometry, and the use of common lathe spindle tooling. You will perform basic lathe operations, which will consist of facing, center-drilling, chuck turning, turning between centers, boring, grooving, tapers, knurling, and single point threading. You also will be required to produce specified parts to a tolerance of +/- .004 in. and perform competencies set by manufacturing standards.

### **MAC 111 Intermediate Engine Lathe**

#### **3 credits**

MAC 111 teaches you to prepare single point external and internal unified screw threads to a Class 3 fit, generate angles with the compound rest within one degree, ream holes concentric within .001 inches, determine cutting speeds, and perform facing and turning operations.

### **MAC 112 Advanced Engine Lathe**

#### **3 credits**

MAC 112 prepares you to form radius, single-point isometric threads, turn spherical radius, use a radius gauge, and work within .0005 inches tolerance externally.

### **MAC 120 Introduction to Milling Machine**

#### **3 credits**

MAC 120 teaches you to identify the major parts of the vertical mill; align a vise; use an indicator, edge finder, and boring head; determine speeds and feeds; perform simple indexing; mill flat, square surfaces and slots; drill, bore, and tap holes; and work within a plus or minus .002 inch tolerance.

### **MAC 121 Intermediate Milling Machine**

#### **3 credits**

MAC 121 prepares you to determine hole locations by coordinates and degrees, use a rotary table, use a jig bore to drill holes by the coordinate method, and work within plus or minus .001 inch tolerance.

### **MAC 122 Advanced Milling Machine Operations**

#### **3 credits**

MAC 122 prepares you to indicate the head of a vertical mill, bore holes, drill holes at an angle, and work with tolerances of .0008 inches location and diameter.

### **MAC 123 Horizontal Mill Set Up & Operations Description**

#### **3 credits**

MAC 123 prepares you to identify the major parts and accessories for the horizontal mill, select cutters, mill slots, slab mill, square a workpiece, and work within a tolerance of plus or minus .002 inches.

### **MAC 130 Conventional Lathe Operations**

#### **4 credits**

MAC 130 includes calculation of speeds and feeds on various materials, identification and application of various work-holding techniques, tool forming, advanced machining practices and applications, and spindle tooling. You will learn how to calculate and turn tapers using the compound slide or taper attachment, offset work on a four-jaw chuck, turning between centers, boring, grooving, finishing, single point threading, knurling, tool grinding, drilling operations, and reaming.

### **MAC 141 Advanced Machining Operations**

#### **4 credits**

MAC 141 teaches you the use of various conventional machine tools used in a machine shop environment. You will learn the use of engine lathes, horizontal and vertical milling machines, surface grinders, drill presses, pedestal grinders, power cut-off saws, and other machine tools commonly used to produce quality machined parts in today's manufacturing environments. Machining competencies will be stressed. You will be required to produce parts manufactured by local manufacturing companies with the consideration of ISO quality standards.

### **MAC 201 Introduction to CNC Turning Operations**

#### **3 credits**

MAC 201 covers computer numerical control (CNC) lathe operations, control functions, the letter address system, the program format, and machine setup. G & M codes, control functions, the letter address system, and math issues related to CNC are included.

This class is NOT offered on an open-entry, open-exit basis.

### **MAC 202 CNC Turning Operations II**

#### **3 credits**

MAC 202 prepares you to write basic computer numerical control (CNC) lathe part programs. G and M codes, math-related to CNC, setups, speeds and feeds, straight turning, spherical turning, threading, chamfering, tapering, drilling, tapping, boring, and grooving will be covered. Cutter compensations, sub-programming techniques, repetitive cycles, and both absolute and incremental will be incorporated into programs. You will proof and edit the programs to make them valid. This class is NOT offered on an open-entry, open-exit basis.

### **MAC 205 Introduction to CNC Milling Operations**

#### **3 credits**

MAC 205 provides transitional information between conventional machining applications and the typical applications found in computer numerical control machining. Topics may consist of numerical control systems, the Cartesian coordinate system, high efficiency tooling applications, objectives of numerical control, calculating speed and feed rates, defining and calculating tool motion, fixturing requirements, basic program structure, programming codes, and basic conversational programming. Operation of NC machines will be required.

### **MAC 206 CNC Milling Operations II**

#### **3 credits**

MAC 206 covers the principle operations of both vertical and horizontal CNC milling machines via lecture instruction methods, multi-media instruction methods, and manufacturing hands-on methods. You will be exposed to the basic CNC machining center, principle operations, manual controls, programming methods, tool-offsets, G54-G59 work offsets, cutter radius compensation, and tool selection methods. General operator skills and basic setup skills will be stressed.

### **MAC 221 Surface Grinder Setups and Operations**

#### **3 credits**

MAC 221 teaches you how to identify major parts and accessories of the surface grinder and grind flat, vertical, and angular surfaces to a tolerance of .0002 position and size.

### **MAC 223 Tool & Cutter Grinder**

#### **3 credits**

MAC 223 prepares you to identify the major parts and accessories of the tool and cutter to grind, sharpen two flute end mills, four flute end mills, slab mills and form cutters, and work with a plus or minus .001 tolerance.

**MAC 240 CAD/CAM 2D**  
**3 credits**

MAC 240 provides you with the essential concepts and techniques that are required to successfully create part geometry, generate tool path, verify tool path models, and post process the NC codes. You will be exposed to a 2-axis machining, 3-axis machining wire frame and surface modeling, lathe programming, and DNC systems. Programming projects and models will be demonstrated in the CNC manufacturing lab.

**MAC 245 CAD/CAM 3D**  
**3 credits**

MAC 245 covers both the production and surfacing of three-dimensional geometry in a self-paced setting. Topics will be covered related to the production of wire frames, solids, surfaces, the joining of surfaces, joining of solids, managing construction planes, sweeping, rotating, and controlling parameter settings. A familiarity with Mastercam, CNC programming techniques, and CNC operations is recommended.

**MAC 250 Advanced Inspection Techniques**  
**3 credits**

MAC 250 addresses the principles of dimensional metrology. You will learn how to use common measuring instruments relating to state-of-the-art manufacturing environments. You also will learn the importance of Quality Control, TQM, and SPC processes as they relate to manufacturing environments. Use of a coordinate measuring machine will be addressed.

**MAC 252 Practical Metallurgy**  
**3 credits**

MAC 252 offers a study of metallurgical terms and definitions in an effort to understand both the behavior of metals and their service to industry. Characteristics during heating, cooling, shaping, forming, and the stresses related to their mechanical properties are covered. The theory behind the alloys, heat treatment processes, and the impact they have on strength, toughness, hardness, elasticity, ductility, malleability, wear resistance, and fatigue resistances is investigated.

**MAC 258 Interpreting Engineering Drawings**  
**3 credits**

MAC 258 teaches you to interpret machine shop drawings starting with the simple and progressing to the more complex. All types of dimensioning, symbols, notes, and tolerances are interpreted.

## **MAN- Management**

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[www.rccc.edu/business](http://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 you with the conceptual knowledge and tools to make better use of your 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. Emphasis is placed 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. You will 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 surveys the principles of management. Emphasis is placed 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 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 instructor  
MAN 285 meets the individual needs of students who will engage in intensive study or research under the direction of a qualified instructor.

## **MAN 287 Cooperative Education/Internship**

### **1-3 credits**

Prerequisite: Permission of instructor  
MAN 287 provides you with the opportunity to supplement course work with practical work experience related to your educational program and occupational objectives. You will be placed at approved workstations which are related to your program of study. You will work under the immediate supervision of experienced personnel at the business location and with the direct guidance of the instructor/coordinator.

## **MAR- Marketing**

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[www.rccc.edu/business](http://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. You will 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 you 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 280 Internship**

#### **1-3 credits**

Prerequisite: Permission of instructor  
MAR 280 provides you with the opportunity to supplement course work with practical work experience related to their educational program. You will work under the immediate supervision of experienced personnel at the business location and with the direct guidance of the instructor.

### **MAR 285 Independent Study**

#### **1-3 credits**

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

## **MAT- Mathematics**

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[www.rccc.edu/math](http://www.rccc.edu/math)

### **MAT 030 Fundamentals of Mathematics**

#### **2 credits**

Prerequisite: 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**

Prerequisite: 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, an introduction to algebraic expressions, and the solution of basic first-degree equations.

### **MAT 090 Introductory Algebra**

#### **4 credits**

Prerequisite: MAT 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: MAT 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**

Prerequisite: 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 that 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.

### **MAT 120 Mathematics for the Liberal Arts**

#### **4 credits**

Prerequisite: 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 math assessment

MAT 121 includes a brief review of intermediate algebra, equations and inequalities, functions and their graphs, exponential and logarithmic functions, and linear systems. Additional topics can include nonlinear systems, conic sections, introduction to sequences and series, permutations and combinations, the binomial theorem, and theory of equations. A graphing calculator is required for this course. You cannot receive credit for both MAT 166 and MAT 121. Contact the Math Dept. chair with questions.

### **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. A graphing calculator is required for this course. You cannot receive credit for both MAT 166 & MAT 122. Contact the math department chair with questions about this.

### **MAT 123 Finite Mathematics**

#### **4 credits**

Prerequisite: 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. A graphing calculator is required for this course.

### **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. A graphing calculator is required for this course.

### **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. A graphing calculator is required for this course. You cannot receive credit for both MAT 135 and BUS 226.

### **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: MAT 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**

Prerequisite: 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. A graphing calculator is required for this course. You cannot receive credit for both MAT 166 and MAT 121/122. Contact the math department chair with questions about this.

### **MAT 175 Special Topics**

#### **1-4 credits**

Prerequisite: Permission of instructor. MAT 175 provides you with a vehicle to pursue in depth exploration of special topics of interest.

### **MAT 185 Independent Study**

#### **1-4 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**

Prerequisites: MAT 121 and MAT 122 (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. A graphing calculator is required for this course.

### **MAT 202 Calculus II**

#### **5 credits**

Prerequisite: MAT 201 (grade C or better)

MAT 202 is a continuation of single variable calculus, which will include techniques of integration, polar coordinates, analytic geometry, improper integrals, and infinite series. A graphing calculator is required for this course.

## **MAT 204 Calculus III with Engineering Applications**

**5 credits**

Prerequisite: MAT 202 (grade C or better)

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: MAT 204 (grade C or better)

MAT 255 includes vector spaces, matrices, linear transformations, matrix representation, eigenvalues, and eigenvectors. A graphing calculator is required for this course.

## **MAT 261 Differential Equations with Engineering Applications**

**4 credits**

Prerequisite: MAT 204 (grade C or better)

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

# **MET - Meteorology**

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## **MET 150 General Meteorology**

**4 credits**

MET 150 provides an introduction to general meteorology and atmospheric sciences. It includes the composition and structure of the atmosphere and characteristics that affect the atmosphere, such as temperature, pressure and moisture. Additionally, the development of weather systems, such as storm systems, hurricanes, weather fronts and cloud development will also be examined. Finally, concepts of climatology will be stressed.

# **MGD - Multimedia Graphic Design**

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[www.rrcc.edu/multimedia](http://www.rrcc.edu/multimedia)

## **MGD 101 Introduction to Computers for Graphics**

**3 credits**

MGD 101 introduces you to computer systems developed for graphics. You will learn hardware and software components used in multimedia production. You will explore basic computer operations, file management, scanning techniques, archiving capabilities, and utilization of the multimedia department server and internet connection.

## **MGD 102 Introduction to Multimedia**

**3 credits**

MGD 102 introduces the equipment and software used in multimedia production and the multimedia profession. You will focus on current technology and equipment such as scanners, printers, digital cameras and computers. You will gain hands-on skills using today's technology for input and output in multimedia and design projects. Overview of software for multimedia will be explored.

## **MGD 103 Production Design**

**3 credits**

Recommended Prerequisite: MGD 101 or MGD 102

MGD 103 explores the use of tools, computer graphic techniques and design principles to produce professional quality designs. Topics include printing basics, typography and digital color systems. You will use creative thinking to solve communication and design problems for the output process.

## **MGD 104 Videography**

**3 credits**

Recommended Prerequisite: MGD 101 or MGD 102

MGD 104 introduces you to the principles and techniques of videotape production, including camera operation, basic script writing, lighting, basic sound and basic digital editing. Examination of pre-production, production, and post-production processes, as well as aesthetics, are included.

## **MGD 111 Adobe Photoshop I**

**3 credits**

Recommended Prerequisite: MGD 101 or MGD 102

MGD 111 concentrates on the high-end capabilities of Adobe's industry standard photo-editing software as an illustration, design and photo retouching tool. You will explore a wide range of selection and manipulation techniques applied to photos, graphics and videos. Design concepts are explored in this class.

## **MGD 112 Adobe Illustrator I**

**3 credits**

Recommended Prerequisite: MGD 101 or MGD 102

MGD 112 acquaints students with the industry standard vector drawing program. You will learn to use vector based tools to create digital artwork used in web design, print media and digital screen design. Design concepts are explored in this class.

### **MGD 113 QuarkXPress**

#### **3 credits**

Recommended Prerequisites: MGD 111 and MGD 112

MGD 113 introduces you to QuarkXPress, a digital page layout tool. You will learn 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**

Recommended Prerequisites: MGD 111 and MGD 112

MGD 114 introduces you to InDesign, an industry standard page layout program which integrates seamlessly with other Adobe Creative Suite programs. InDesign delivers creative freedom and productivity to page layout and production. Class discussions and independent projects supplement hands-on classroom work.

### **MGD 118 Digital Color Theory**

#### **3 credits**

Recommended Prerequisites: MGD 111 and MGD 112

MGD 118 covers color theory as it relates to multimedia. The psychology of color is taught as well as effective design using color. You will learn to correct color photographs and create color separations. Color scanning technology is also covered.

### **MGD 119 Autodesk Maya I**

#### **3 credits**

Recommended Prerequisites: MGD 152 and MGD 153

MGD 119 introduces you to Autodesk Maya, a high-end 3D modeling and character animation tool. Emphasis is on constructing 3D models of various types. You will learn scene development and animation for render in movie format.

### **MGD 121 Corel Painter for Digital Media**

#### **3 credits**

Recommended Prerequisites: MGD 101 and MGD 111

MGD 121 introduces you to the digital illustration and paint software application Corel Painter. Color and relationships, repeat patterns, and fine art digitization are among the topics covered in the course as you explore the creation of visual fine art using computers. Assigned projects cover a wide range of visual approaches. Painter provides an extra competitive edge for you.

### **MGD 122 Sculpting for Digital Media**

#### **3 credits**

Recommended Prerequisites: MGD 152 and MGD 119

MGD 122 introduces you to conceptualization of surface coloration, painting and manipulation of 3D digitizer and environments. You will will construct sculptures using organic, inorganic, abstract, and realistic subject matter. Operating a 3D scanner, you will digitize a sculpture and bring the electronic file into a computer animation application for manipulation.

### **MGD 141 Web Design I: Adobe Dreamweaver**

#### **3 credits**

Recommended Prerequisites: MGD 111 and/or MGD 112

MGD 141 introduces the fundamentals of using a web editor to create a professional web page. Web-safe colors and the use of graphic editors will be explored. You will study web aesthetics and intuitive interface design. This course emphasizes file organization and layout including tables and frames. You will learn to create graphics for web sites using Photoshop and Illustrator, as well as developing the site in Adobe Dreamweaver. Design concepts specifically for web are explored in this class.

### **MGD 143 Motion Graphic Design I: Adobe Flash**

#### **3 credits**

Recommended Prerequisites: MGD 111 and MGD 112

MGD 143 uses the industry standard software for the creation of 2D animation and dynamic interactive media for Web and multimedia applications. You will create objects, symbols, and assemble motion and animation tweens.

### **MGD 152 Digital Animatics**

#### **3 credits**

Recommended Prerequisite: ART 121

MGD 152 introduces the workflow used by professional animators and game designers to produce media in a digital environment. You will learn the foundation skills of planning, organizing, storyboarding and pre-visualization techniques necessary to create animated stories. You will also study the history of animation and game design.

### **MGD 153 3D Animation I: Maxon Cinema 4D**

#### **3 credits**

Recommended Pre/Co-requisite: MGD 152

MGD 153 encompasses all major aspects of creating 3D characters using animation software. Using developed characters, you will learn to animate for personality.

### **MGD 161 Adobe Director I**

#### **3 credits**

Recommended Prerequisites: MGD 111, MGD 112 and MGD 141

MGD 161 examines the leading authoring tool for interactive multimedia from the art director's perspective. You will learn the basics of 2D animation for computer presentations, multimedia, gaming and the web. Interface design and scene development are emphasized. Hands-on projects include lingo scripting, behaviors, and the addition of sound and digital video to studentt projects.

### **MGD 163 Sound Design I: Apple Logic Pro**

#### **3 credits**

Recommended Prerequisite: MGD 101  
MGD 163 explores the use of sound in multimedia production and audio storytelling. You will examine principles of recording and how sound enhances interactive productions and improves computer presentations. You will learn to use the computer as a full audio editing studio. This software is only available for the Mac Platform

### **MGD 164 Digital Video Editing I: Apple Final Cut Studio Pro**

#### **3 credits**

Recommended Prerequisite: MGD 104  
MGD 164 introduces you to digital non-linear video editing. You 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. This software is only available for the Mac Platform.

### **MGD 165 Adobe After Effects I**

#### **3 credits**

Recommended Prerequisite: MGD 164 or MGD 104

MGD 165 provides fundamental techniques for creating digital motion graphics, 2D animation, animated logos, video graphics, etc. This class covers relevant tools and techniques as well as industry standards, delivery methods and output formats.

### **MGD 167 Game Design I**

#### **3 credits**

Recommended Prerequisite: MGD 143 or MGD 161

MGD 167 introduces you to game design beginning with conceptual development and functionality, through production of a virtual world prototype. You will examine character registration, in-betweens, inking and clean up used for creating real-time game environments. Storytelling and visual metaphor development are emphasized.

### **MGD 202 Point of Purchase & Packaging Design**

Recommended Prerequisites MGD 111 and MGD 112

MGD 202 introduces the theories and principles that apply to three-dimensional design graphics for packaging and display; various dimensional marketing solutions to create dynamic visual effects concepts will be developed.

Work layout stages and mock-ups will use various methods of cutting, folding, and assembly to explore the design concepts and their visual effects.

### **MGD 211 Adobe Photoshop II**

#### **3 credits**

Recommended Prerequisite: MGD 111 or permission of instructor

MGD 211 develops and reinforces image composition techniques learned in Adobe Photoshop I. Fundamentals are continuously reinforced as new design techniques are introduced.

### **MGD 212 Adobe Illustrator II**

#### **3 credits**

Recommended Prerequisite: MGD 112 or permission of instructor

MGD 212 enables you to continue development of digital drawing and design skills through practice and use of state-of-the-art illustration software acquired in MGD 112 Adobe Illustrator I.

### **MGD 213 Electronic Prepress**

#### **3 credits**

Recommended Prerequisites: MGD 111, MGD 112, MGD 114, and/or MGD 113 or permission of instructor

MGD 213 introduces you to best practice in preparing digital files for trapping, output considerations and proofing techniques used in commercial offset printing and for digital press. Creating effective electronic designs and efficient use of relevant software programs used in prepress production are covered.

### **MGD 219 Autodesk Maya II**

#### **3 credits**

Recommended Prerequisite: MGD 119  
MGD 219 explores Maya's animation techniques in depth. You are exposed to rigging characters for animation.

### **MGD 241 Web Design II: Adobe Dreamweaver**

#### **3 credits**

Recommended Prerequisites: MGD 111, MGD 112 and MGD 141

MGD 241 expands on previously learned fundamentals of web design including an introduction to cascading style sheets, advanced web page design and color usage. Interface design principles are emphasized in this course. You will examine Web sites employing more complex structures, optimal site architecture and navigation necessary for complex sites.

### **MGD 243 Motion Graphic Design II: Adobe Flash**

#### **3 credits**

Recommended Prerequisites: MGD 111, MGD 112 and MGD 143

MGD 243 stresses the complex creation of 2D animated motion graphics concentrating on prior skills learned in MGD 143 and the use of Action Scripting and behaviors. You will create motion graphics and apply motion graphics to web sites and other multimedia projects.

### **MGD 253 3D Animation II: Maxon Cinema 4D**

#### **3 credits**

Recommended Prerequisites: MGD 152 and MGD 153

MGD 253 addresses advanced aspects of creating computerized 3D characters. You will examine facial animation, lip synchronization, scene design and lighting set-ups.



## **MGD 259 Management and Production**

### **3 credits**

MGD is a capstone class that should be taken in the final semester prior to graduation.

MGD 259 examines development of multimedia from a production standpoint. The process of transforming conceptual designs into actual projects is explored. You will study the management function of those tasks associated with the business end of development. Teamwork is emphasized throughout the course.

## **MGD 261 Adobe Director II**

### **3 credits**

Recommended Prerequisites: MGD 161  
MGD 261 explores the interactive process within all areas of program design, courseware authoring, delivery techniques and instruction strategies. You will be introduced to advanced Lingo scripting to provide more interactive capabilities.

## **MGD 263 Sound Design II:**

### **Apple Logic Pro**

### **3 credits**

Recommended Prerequisites: 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. You will explore synchronization techniques of audio with moving pictures, graphics, and animation.

This software is only available for the Mac platform.

## **MGD 264 Digital Video Editing II:**

### **Apple Final Cut Studio Pro**

### **3 credits**

Recommended Prerequisites: MGD 164  
MGD 264 introduces complex and advanced techniques in digital video editing. Editing techniques such as masking, filtering, blue/green screening, track mattes, and image mattes are examined. You will produce a movie project in this class and discuss practical ways to distribute project to various audiences.

## **MGD 265 Adobe After Effects II**

### **3 credits**

Recommended Prerequisites: MGD 165  
MGD 265 focuses on advanced skills and techniques in creating digital motion graphics. Relevant tools and techniques, industry standards, specialized techniques, and additional tools and resources are covered in this class.

## **MGD 266 DVD Authoring:**

### **Apple DVD Studio Pro**

### **3 credits**

Recommended Prerequisites: MGD 104, MGD 164 or MGD 264  
MGD 266 introduces you to all aspects of DVD authoring; source acquisition, DVD production, interface design, organization, management and appropriate DVD output solutions.

## **MGD 267 Game Design II**

### **3 credits**

Recommended Prerequisites: MGD 167  
MGD 267 explores advanced features of game design. You will examine play-testing and quality assurance, design advanced character animation, game and backdrop lighting, texturing and design real time 3D terrain rendering..

## **MGD 280 Internships**

### **1-3 credits**

Prerequisite: Permission of MGD Department advisor

MGD 280 provides an opportunity for you to experience on-the-job shadowing and interacting with experts in your field of interest. You will intern at local professional businesses to prepare for the transition from student to professional.

## **MGD 285 Independent Study**

### **1-3 credits**

Prerequisite: Permission of Instructor  
MGD 285 provides you with the opportunity to independently learn new technology skills not offered in the classroom. Qualified instructors provide one-on-one outcome objectives, review and oversee student progress.

# **MOT- Medical Office Technology**

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## **MOT 110 Medical Office Administration**

### **4 credits**

Corequisite: MOT 120

MOT 110 introduces the administrative duties specifically used in medical offices.

## **MOT 120 Medical Office Financial Management**

### **3 credits**

Corequisite: 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**

Prerequisites: HPR 178

MOT 136 provides hands on experience with the basic clinical skills required for assisting with patient care. The course 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**

Prerequisites: BIO 106, HPR 178

Corequisite: MOT 136

MOT 138 introduces you to basic routine laboratory skills and techniques for collection, handling, and examination of laboratory specimens often encountered in the ambulatory care setting. The course emphasizes hands-on experience.

## **MOT 140 Medical Assisting Clinical Skills**

### **4 credits**

Prerequisites: BIO 106, HPR 178, MAT 060 or higher or NUR 101, MOT 136

Corequisite: MOT 138

MOT 140 provides hands on experience with the clinical skills required for assisting with patient care. The course delivers the theory behind each skill presented as well as proper technique for performing each skill.

## **MOT 150 Pharmacology for Medical Assistants**

### **3 credits**

Prerequisites: BIO 106, HPR 178, MAT 060 or higher or NUR 101

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. Internship must be started within four months of completing program requirements.

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. Internship must be started within four months of completing MOT 140 and all program requirements.

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. Internship must be started within four months of completing MOT 140 and all program requirements.

Same as MOT 181 and MOT 182 combined

MOT 183 provides supervised placement in contracted facility for guided experience in application of knowledge and skill acquired in the classroom. You will assist 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**

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[www.rccc.edu/arts/music](http://www.rccc.edu/arts/music)

## **MUS 100 Fundamentals of Music Theory**

### **3 credits**

MUS 100 is designed to help the beginning music student, or the student 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. Music History I considers music from the Middle Ages through the Classical period.

## **MUS 122 Music History II**

### **3 credits**

MUS 122 studies the various periods of music history with regard to the composers, aesthetics, forms, and genres of each period. Music History II considers music from the early Romantic period to the present.

## **MUS 123 – Survey of World Music**

### **3 credits**

MUS 123 provides an overview of non-Western music from around the world. This course provides basic listening skills and the historical/cultural context for a variety of world music styles to enable an understanding and appreciation of non-Western musical expression.

## **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 I**

### **2 credits**

Prerequisite: Permission (not audition) of the department. An additional fee is required.

MUS 141 offers private instruction consisting of a half-hour lesson and a one-hour performance seminar each week. Participation in a student 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 half-hour lesson and a one-hour performance seminar each 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 half-hour lesson and a one-hour performance seminar each 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 you with the opportunity to supplement course work with practical work experience related to your educational program. You will work under the immediate supervision of experienced personnel at the business location and with the direct guidance of the instructor.

## **MUS 241 Private Instruction I**

### **2 credits**

Prerequisite: MUS 142 or MUS 143 on same instrument. An additional fee is required.

MUS 241 offers private instruction consisting of a half-hour lesson and a one-hour performance seminar each 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 on same instrument. An additional fee is required.

MUS 242 offers private instruction consisting of a half-hour lesson and a one-hour performance seminar each 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 on same instrument. An additional fee is required.

MUS 243 offers private instruction consisting of a half-hour lesson and a one-hour performance seminar each 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 you with the opportunity to supplement course work with practical work experience related to your educational program. You will work under the immediate supervision of experienced personnel at the business location and with the direct guidance of the instructor.

## **NAT – Nail Technician**

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### **NAT 110 Introduction to Manicures and Pedicures**

**3 credits**

NAT 110 provides a basic introduction to the proper use of implements used in manicures and pedicures. Theory and practical application of proper set-up, safety, sanitation, nail shapes, anatomy, product knowledge, and terminology dealing with manicures and pedicures is covered. Training is done in a classroom or lab setting using models or other techniques.

### **NAT 111 Intermediate Manicures and Pedicures**

**2 credits**

NAT 111 presents theory and practical application dealing with different types of manicures, pedicures, nail art, and massage techniques. Theory and practical application of procedures, products, nail shapes, and maintenance of natural nails are covered. You will learn to recognize different nail disorders and their proper treatment. Training is done in a specialized class or in supervised salon (clinical) setting using models or customers. Proper sanitation and sterilization as it pertains to all aspects of manicures, pedicures, and nail art are taught.

### **NAT 210 Advanced Manicures and Pedicures**

**2 credits**

NAT 210 presents theory and practical application dealing with different types of manicures, pedicures, massage techniques, and nail art. Theory and practical application of procedures, products, nail shapes, and maintenance of the natural nails are covered. You will learn to recognize different nail disorders and their proper treatment. Training is done in a specialized class or in supervised salon (clinical) setting using models or customers.

### **NAT 211 Application of Artificial Nails**

**5 credits**

NAT 211 provides advanced theory and practical application of nail wraps, tip overlays, acrylics, and product knowledge to ready you for employment. Theory and practical application of removal techniques for artificial nails are covered. Instruction is provided in specialized classes or in a supervised salon (clinical) setting using models or customers. Student preparation for state board licensing examination pertaining to artificial nails is covered.

## **NUA- Nursing Assistant**

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[www.rccc.edu/health](http://www.rccc.edu/health)

### **NUA 101 Certified Nurse Aide Health Care Skills**

**4 credits**

Prerequisite: HPR 102

Corequisite: NUA 170 Nurse Aide Clinical 1 credit

NUA 101 prepares you 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. You 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

Corequisite: 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**

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[www.rccc.edu/health](http://www.rccc.edu/health)

### **NUR Nursing**

#### **I.V. Therapy for LPN NUR 201**

**5 credits**

NUR 201 Provides LPN's with an opportunity to expand their nursing roles by learning appropriate procedures for intravenous therapy and venous blood withdrawal. The course includes lecture, laboratory practice and clinical experience. The course prepares you for I.V. certification under State Board of Nursing Guidelines.

**R.N. Refresher Course**  
**NUR 290 Registered Nurse**  
**Refresher**  
**10 credits**

Prerequisite: HPR 102

Corequisite: 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

Corequisite: NUR 290

NUR 291 applies the knowledge gained from NUR 290 in a clinical setting.

**OSH-**  
**Occupational**  
**Safety**  
**Technician**

**OSH 127 10-HR Construction**  
**Industry Standards**  
**1 credit**

OSH 127 provides a 10-Hour OSHA certification course for the construction industry and participants will review the current OSHA standards contained in 29 CFR 1926. Participants that complete the course will receive a certificate of completion from the United States Department of Labor, Occupational Safety and Health Administration. The course is taught by instructors authorized by the Occupational Safety and Health Administration.

**PAP-**  
**Physician**  
**Assistant**  
**Program**

[www.rccc.edu/pa](http://www.rccc.edu/pa)

You 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. This course 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 and**  
**Diagnostic Studies**  
**1 credit**

PAP 207 provides clinical preventive services as part of primary care focusing on counseling interventions, screening tests, and immunizations 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. In addition, the later portion of PAP 207 focuses on the PA students' gaining expertise in interpreting electrocardiographs (ECGs) and radiographs, including x-rays, computerized tomography (CT scans), magnetic resonance imaging (MRIs), and sonography in preparation of the students entering their second-year of clinical rotations.

**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 212 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. The course 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 clinical correlations, indications for testing, 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 are 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, and enables the PA student to develop and/or enhance their communication skills and learn to use those skills to interact effectively in professional relationships with patients and medical colleagues. 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, and enables the PA student to develop and/or enhance their communication skills and learn to use those skills to interact effectively in professional relationships with patients and medical colleagues. 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 studied include the head, ear, nose, throat, cardiopulmonary, pulmonary, genitourinary, endocrine, hematology, oncology, immunologic, and infectious disease. The use of nuclear, chemical, and biological weapons of mass destruction in acts of terrorism is also discussed.

## **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. You will learn to identify the signs and symptoms of common disorders, to further evaluate those disorders through appropriate testing, and to prepare a treatment plan to preserve health or mitigate suffering.

## **PAP 223 Pediatrics**

### **2 credits**

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 are 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. You will learn to apply the principles of pharmacology to the prevention and treatment of specific human disorders. Special emphasis is placed on dosage and the safe and appropriate use of medications.

**PAP 235 Human Pathology**  
**4 credits**

PAP 235 allows learners to 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 parallel 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 are 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 which 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. You 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 which 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. You 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 which 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. You 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 which 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. You 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 which 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. You 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 which 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. You 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 which 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. You 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 which 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. You 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 which 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. You 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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[www.rccc.edu/outdoor](http://www.rccc.edu/outdoor)

### **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 you 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. You will 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. This course 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. You will 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 your 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 you 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. You will practice various weight training techniques in accordance with your 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. This is 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. You will practice yoga according to your 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: PED 147 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 you 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 highway, 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**

#### **1 credit**

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. You 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**

Prerequisites: 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**

Prerequisites: 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. You 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 you 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 you 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. You will 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 you 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**

PED 150 prepares you to become certified by the American Red Cross as a Water Safety Instructor (WSI). It enables you 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. The course focuses on teaching people with special needs and planning and conducting safe and effective swim lessons.

### **PER 151 Lifeguard Training 2 credits**

PED 151 provides the necessary minimum knowledge and skills training to qualify as a non-surf lifeguard. It 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 you 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 2 credits**

PER 168 acquaints you 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 you with a vehicle to pursue in depth exploration of special topics of interest.

### **PER 252 Principles of Outdoor Recreation 3 credits**

PER 252 includes lectures and practical outdoor experiences relating to problems and trends in outdoor recreation.

### **PER 253 Outdoor Leadership 2 credits**

PER 253 is an introduction to the development, acquisition, and application of outdoor leadership skills and knowledge. You will be 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. You will give lectures and conduct field trips.

### **PER 265 Officiating High School Football 1 credit**

PER 265 provides you 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.

### **PER 280 Internship 1-6 credits**

PER 280 course gives you a realistic work experience in the field. Work will be supervised by professionals currently employed in the recreation industry. These preceptors will ensure that you participate in relevant field work and that they perform to the standards expected of employees of the organizations in which the internship occurs.

## **PHI- Philosophy**

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### **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 contemporary personal and social issues.

## **PHI 113 Logic**

### **3 Credits**

PHI 113 studies effective thinking using language-oriented logic. The course provides tools and develops skills for creative and critical thinking and emphasizes the development of decision-making and problem-solving.

## **PHI 114 Comparative Religions**

### **3 Credits**

PHI 114 introduces you 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 you 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 ethics, Genetic ethics, issues of dental ethics, and other valid applications.

## **PHI 123 Native American Religion**

### **3 Credits**

PHI 123 is designed to introduce you 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 sundry ways in which religion and American culture interface.

## **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 comparison of the literature of ancient Israel to that of its neighbors.

## **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 writers of this time.

## **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 203 Introduction to Buddhism**

### **3 Credits**

PHI 203 introduces you to the history, philosophy and practices of Buddhist tradition. This course in no way intends to be comprehensive but rather surveys the many manifestations of Buddhism through an exploration of foundational aspects, the evolution and spread of Buddhist philosophical and spiritual ideals, and aspects of Buddhism as it exists in the modern world.

## **PHI 204 Introduction to Hinduism**

### **3 Credits**

PHI 204 provides you with a broad overview of the history, philosophy, and practices of Hindu tradition. Because of the vast complexity of the subject matter the course in no way intends to be comprehensive but rather to provide an introduction to the foundations of Indian cultural tradition, the evolution of Hindu philosophical and spiritual ideals, as well as, a cursory understanding of Hindu nationalism and modern Hindu religious practice.

### **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 you with a vehicle to pursue in depth exploration of special topics of interest.

## **PHO - Photography**

Photography classes reside under both the ART and PHO prefixes, and classes are held in the Multimedia Graphic Design Department. Professional Photographer Associate of Applied Science degrees and certificates can be found in Multimedia Graphic Design.

### **PHO 176 Close-up and Macro Photography**

#### **3 credits**

Recommended Prerequisite: ART 138 or ART 143 or permission of instructor  
PHO 176 explores the techniques, aesthetics and equipment necessary to produce close-up and macro photographs. You will photograph both inanimate and natural objects, indoors and outdoors using different approaches to these subjects. Both film and/or digital SLR cameras with manual settings may be used for this class.

### **PHO 176 Infrared Photography 3 credits**

Recommended Prerequisite: ART 138 or ART 143

PHO 176 is designed for the mid-level to advanced photography student. This course explores the use of black and white infrared film for dramatic special effects photography. You must use a 35mm SLR film camera with manual settings for this class.

### **PHO 204 Commercial Studio Lighting**

#### **3 credits**

Recommended Prerequisite: ART 138 or ART 143

PHO 204 explores 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 260 Event & Wedding Photography**

#### **3 credits**

Prerequisite: ART 138 or ART 143  
PHO 260 is designed for the intermediate/ advanced photo student interested in learning professional techniques associated with venue photography. Topics covered include weddings, Barmitzvah/Basmitzvah, music concerts, sporting events, graduations and similar occasions. You will gain hands-on knowledge and learn practical shooting skills. The course includes the business and planning aspects of ceremonial and event photography. Both film and/or digital SLR cameras with manual settings may be used for this class.

### **PHO 275 Finish and Display/Framing**

#### **1 credit**

In PHO 275 you will learn the proper execution and presentation of 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 276 Mastering Black and White Outdoor Photography**

#### **3 credits**

Prerequisites: ART 138 and ART 139 or ART 143 and ART 243 or permission of instructor

PHO 276 explores 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 are covered. Exposure methods include the Zone System, use of filters, and advanced techniques to achieve the best possible negative to maximize print quality.

You must use a 35mm SLR film camera with manual settings for this class.

### **PHO 276 Special Effects: Darkroom**

#### **3 credits**

Prerequisite: ART 138

PHO 276 is designed for intermediate to advanced level students. You will explore specialized photo techniques such 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 include special filters, motion techniques and "breaking all the rules". The primary emphasis is on personal creativity and the aesthetic value in using special effects in visual communication. A 35mm SLR film camera with manual settings is required for this class.

### **PHO 276 Outdoor Portrait Workshop**

#### **3 credits**

Recommended Prerequisite: ART 138 or ART 143

PHO 276 is designed to provide the serious photography student with hands-on tools and techniques to explore the art of outdoor portraits. You will learn to control natural lighting, use backdrops to enhance the subject and the use of format and lens selection to best fit the desired outcome. Both film and/or digital SLR cameras with manual settings may be used for this class.

**PHO 277**  
**Commercial/Architectural Photos**  
**3 credits**

Prerequisite: ART 138 or ART 143 or permission of instructor

PHO 277 covers the more advanced aspects of commercial and architectural photography. You 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.

Both film and/or digital SLR cameras with manual settings may be used for this class.

**PHO 278 The Business of Photography**

**3 credits**

PHO 278 examines the business of 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 aids you in developing a sound business plan and a useful strategy along with marketing, copyrights, cost analysis, releases and the web. You will learn how to remain profitable in the business of photography.

**PHO 279 Professional Digital Workflow: Adobe Lightroom**  
**3 credits**

Recommended Prerequisite: ART 143  
PHO 279 is intended for the student pursuing a photographic career in which digital photography plays 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. You will learn to select the most valuable enhancement tools, how to archive, edit present and finish a product. Emphasis is on the practical, and producing a finished, salable product with maximum speed and accuracy.

## **PHY- Physics**

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[www.rccc.edu/science/physics](http://www.rccc.edu/science/physics)

**PHY 105 Conceptual Physics with Lab**

**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**

Prerequisite: MAT 121

PHY 111 topics include: kinematics, force, circular motion, energy, momentum, torque, rotational dynamics, simple harmonic motion, temperature, heat and thermodynamics. This is a general physics course that is recommended for all of the health sciences and all other interested students. Those entering engineering or one of the advanced sciences should register for PHY 211.

**PHY 112 Physics: Algebra-Based II with Lab**

**5 credits**

Prerequisite: 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.

**PHY 211 Physics: Calculus-Based I with Lab**

**5 credits**

Prerequisite: MAT 201

PHY 211 topics include: kinematics, force, gravity, energy, momentum, torque, rotational dynamics, fluids and waves. 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**

Prerequisite: 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.

## **PLU- Plumbing**

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**PLU 100 Introduction to Plumbing**

**4 credits**

Co-requisite: OSH 127

PLU 100 introduces you 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. You will work with plastic, copper, steel and cast iron pipe. You 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 101 Piping Skills**

**4 credits**

Co-requisite: OSH 127

PLU 101 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 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. You will learn customer relations and communication skills.

**PLU 105 Basic Electricity****4 credits**

Co-requisite: OSH 127

PLU 105 is a combination lab/lecture course covers fundamentals of electricity, measuring instruments and electrical safety practices. You will learn Ohm's Law and its practical application. You will work with electric motors, basic electrical components and learn their application to the trade.

**PLU 108 Soldering and Brazing Skills****0.5 credits**

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 120 Residential Plumbing****4 credits**

Prerequisites: PLU 100, PLU 101, OSH 127 or permission of the instructor.

PLU 120 you will learn how to design and install residential plumbing systems. (Course does not cover DWV systems: see PLU 130.) You 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. You will also learn to install components, such as water heaters, tub/shower valves, a variety of shower enclosures and other fixtures.

**PLU 130 Basic Drain,Waste and Vent****4 credits**

Prerequisites: PLU 100, PLU 101, OSH 127 or permission of the instructor.

PLU 130 gives you 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, and practical application of code tables, traps and interceptors. You 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 you 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. You 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 you 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 you to take the back-flow, ASSE cross-connection test.

**PLU 206 Uniform Plumbing Code****4 credits**

PLU 206 will assist you in passing the plumbing licensing examinations for the State of Colorado. This course reviews and interprets the Uniform Plumbing Code and the Colorado State Plumbing code. The course also reviews the need for enforcement of the Uniform Plumbing Code.

**PLU 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 was 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. You will be 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: You 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 227 Medical Gas Certification**

#### **2 credits**

Prerequisites: PLU 101, 207, 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: OSH 127, PLU 100, 101, 120, 130.

PLU 240 reviews code requirements of plumbing systems typically found in commercial structures. You will design and install systems meet these requirements.

### **PLU 244 Commercial Plumbing Service**

#### **4 credits**

Prerequisites: PLU 100, 105, 104, 120, OSH 127.

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: OSH 127, PLU 101, PLU 105, HVA 110, HVA 162 or permission of the instructor.

PLU 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.

### **PLU 250 Plumbing Estimating and Costing**

#### **4 credits**

Prerequisites: PLU 207, CON 105 and CON 230, 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: OSH 127, PLU 101 or HVA 110, HVA 105 or PLU 105, HVA 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. You will be 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 you with a vehicle to pursue in depth exploration of special topics of interest

### **PLU 280 Technical Project**

#### **1-12 credits**

Prerequisite: Permission of instructor. PLU 280 enables you 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 are eligible for internship. The internship will give you an opportunity to apply your course studies.

### **PLU 285 Independent Study**

#### **0.5-12 credits**

Prerequisite: Permission of instructor. In PLU 285 you 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 225 Comparative Government** **3 credits**

POS 225 is a comparison of the basic features of selected developed and developing countries. Topics include ideologies, political parties, interest groups, and government institutions.

### **POS 280 Internship** **1-6 credits**

POS 280 provides you with the opportunity to supplement course work with practical work experience related to your educational program. You will work under the immediate supervision of experienced personnel at the business location and with the direct guidance of the instructor.

## **PRA-Park Ranger**

[www.rccc.edu/park](http://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 you 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. You 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

PRA 280 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.

## **PRO - Process Technology**

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[www.rccc.edu/isod](http://www.rccc.edu/isod)

### **PRO 100 Introduction to Process Technology**

**3 credits**

PRO 100 provides an overview or introduction into the field of Process Operations within the process industry. The course will introduce the roles and responsibilities of process technicians, the environment in which they work, and the equipment and systems in which they operate.

### **PRO 110 Safety, Health and Environment**

**3 credits**

PRO 110 provides an introduction to the field of safety, health, & environmental concerns within the process industry. Within this course, you will be introduced to various types of plant hazards, safety and environmental systems and equipment, and the regulations under which processing plants are governed.

### **PRO 120 Process Technology I: Equipment**

**4 credits**

Prerequisites: PRO 100 and PRO 110 or permission of instructor

PRO 120 provides an overview or introduction into the field of equipment within the process industry. This course will introduce many process industry-related equipment concepts including purpose, components, operation, and the Process Technician's role for operating and troubleshooting the equipment.

### **PRO 130 Instrumentation 3 credits**

Prerequisites: PRO 100 and PRO 110 or permission of instructor

PRO 130 provides an introduction to the field of Instrumentation and covers process variables and the various instruments used to sense, measure, transmit and control these variables. This course also introduces control loops and the elements that are found in different types of loops, such as controllers, regulators and final control elements. The course concludes with a study of instrumentation drawings and diagrams and a unit on troubleshooting instrumentation.

### **PRO 175 Special Topics**

**0.5 – 6 credits**

Prerequisite: Permission of instructor  
PRO 175 provides you with a vehicle to pursue in depth exploration of special topics of interest.

### **PRO 185 Independent Study**

**0.5 – 6 credits**

Prerequisite: Permission of instructor  
PRO 185 meets the individual needs of students. You will engage in intensive study or research under the direction of a qualified instructor.

### **PRO 210 Process Technology II: Systems**

**4 credits**

Prerequisites: PRO 120 and PRO 130 or permission of instructor  
PRO 210 studies the interrelationship of process equipment and process systems: arranging process equipment into basic systems; describing the purpose and function of specific process systems; explaining how factors affecting process systems are controlled under normal conditions; and recognizing abnormal process conditions. In addition, it introduces the concept of system and plant economics.

### **PRO 220 Process Technology III: Operations**

**4 credits**

Prerequisites: PRO 120 and PRO 130 or permission of instructor  
PRO 220 provides an introduction to the field of operations within the process industry. You will use existing knowledge of equipment, systems, and instrumentation to understand the operation of an entire unit. You will study concepts related to commissioning, normal startup, normal operations, normal shutdown, turnarounds, and abnormal situations, as well as the Process Technician's role in performing the tasks associated with these concepts within an operating unit.

### **PRO 230 Quality in Process Technology**

**3 credits**

Prerequisites: PRO 100 and PRO 110 or permission of instructor

PRO 230 provides an introduction to the field of Quality within the Process Industry. This course will introduce many process industry-related quality concepts including operating consistency, continuous improvement, plant economics, team skills and statistical process control (SPC).

### **PRO 240 Process Troubleshooting**

**4 credits**

Prerequisite: PRO 220 or permission of instructor

PRO 240 provides instruction in the different types of troubleshooting techniques, procedures, and methods used to solve process problems. Topics include application of data collection and analysis, cause-effect relationships, and reasoning.

### **PRO 250 Oil and Gas Production I**

**3 credits**

PRO 250 familiarizes you with the duties and responsibilities of the oil and gas production technician. Specifically, you will be able to discuss the history of the oil market, concepts surrounding exploration and geology, fundamentals of drilling and well completion, and describe the operation of the equipment and systems used by the oil and gas production technician today.

## **PRO 255 Oil and Gas Production II**

### **3 credits**

PRO 255 familiarizes you with the duties and responsibilities of the oil and gas production operations technician. Specifically, the course covers the following topics: the natural gas treatment, dehydration and compressions system and equipment; the produced water treatment and handling system and equipment; auxiliary systems and equipment; artificial lift and enhanced recovery techniques; pumping and transportation systems; safety, health and environmental considerations relative to the field of oil and gas production; and an introduction to petroleum refining and processing.

## **PRO 275 Special Topics**

### **0.5 – 6 credits**

Prerequisite: Permission of instructor  
PRO 275 provides you with a vehicle to pursue in depth exploration of special topics of interest.

## **PRO 280 Internship**

### **4 credits**

Prerequisite: Permission of instructor  
PRO 280 provides you with the opportunity to supplement course work with practical work experience related to your educational program. You will work under the immediate supervision of experienced personnel at the business location and with the direct guidance of the instructor.

## **PRO 285 Independent Study**

### **0.5 – 6 credits**

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

# **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 you in recognizing your career potential, and provides tools for making realistic decisions concerning educational and occupational objectives.

## **PSY 116 Stress Management**

### **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 117 Parenting**

### **1 credit**

PSY 117 focuses on effective techniques for parenting children, with emphasis on setting expectations, consideration of individual differences, satisfactory communication, and effective parent-child relationships.

## **PSY 175 Special Topics**

### **1-3 credits**

PSY 175 provides you with a vehicle to pursue in-depth exploration of special topics of interest.

## **PSY 180 Internship**

### **1-3 credits**

PSY 180 provides you with the opportunity to supplement course work with practical work experience related to your educational programs. You will work under the immediate supervision of experienced personnel at the business location and with the direct guidance of the instructor.

## **PSY 204 Relationships: Challenges and Choices**

### **1 credit**

PSY 204 enables you to preserve and enhance couple relationships by understanding the role of gender differences, conflict patterns, communication skills, problem solving, and the meaning of commitment, fun, and friendship.

## **PSY 205 Psychology of Gender**

### **3 credits**

PSY 205 examines the impact of gender in work, courtship, family life, and sexual behavior throughout the life span.

## **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 in achieving understanding of the self and identity, interpersonal communication, and close relationships.

## **PSY 217 Human Sexuality**

### **3 credits**

PSY 217 surveys the physiological, psychological, and psychosocial aspects of human sexuality. Some of the topics include anatomy, relationships, sexual identity, sexual health, and sex in the media.

## **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 an overview of human development from conception, childhood, adolescence, adulthood, through the end of life. Material emphasizes 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.

## **PSY 257 Psychological Aspects of Abuse in Relationships**

### **2 credits**

PSY 257 focuses on psychosocial factors contributing to both abusive and victimization behaviors in a variety of relationships.

## **PSY 265 Psychology of Personality**

### **3 credits**

PSY 265 examines the structure, function, and development of personality. It also investigates the major contemporary theories of personality and covers psychodynamic, behavioral, cognitive-social learning, humanistic, trait, and, optionally, neurobiological, existential, and/or Eastern perspectives. The underlying assumptions and research support for these theories are appraised. The course enables you to gain an appreciation of the value of alternative theoretical approaches to this study of psychology.

# **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 applies strategies for improving comprehension, developing vocabulary, and increasing rate for reading college textbooks.

# **REE - Real Estate**

## **REE 201 Real Estate Brokers I**

### **6 credits**

Corequisite: REE 202

Prerequisite: A grade of C or higher in Reading 090 or appropriate SAT, ACT or Accuplacer score that indicates college reading ability, or permission of instructor. REE 201 enables you, in conjunction with REE 202 - Real Estate Brokers II, to meet the educational requirements of the Colorado Real Estate Commission for a Colorado Real Estate Broker's license. This course includes Real Estate Law and Practice, Practical Applications, and Current Legal Issues.

## **REE 202 Real Estate Brokers II**

### **6 credits**

Corequisite: REE 201

Prerequisite: A grade of C or higher in Reading 090 or appropriate SAT, ACT or Accuplacer score that indicates college reading ability, or permission of instructor. REE 202 enables you, in conjunction with REE 201 - Real Estate Brokers I, to meet the educational requirements of the Colorado Real Estate Commission for a Colorado Real Estate Broker's license. This course includes Colorado Contracts and Regulations, Closings, and Recordkeeping and Trust Accounts.

## **REE 275 Special Topics**

### **1-3 credits**

REE 275 provides you with a vehicle to explore special topics of interest in depth.

## **REE 280 Internship**

### **1-3 credits**

Prerequisite: Permission of instructor. REE 280 provides you with the opportunity to supplement course work with practical work experience related to your educational program and occupational objectives. You will be placed at approved workstations related to your 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.

## **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.

# RTE- Radiologic Technology

www.rccc.edu/radiology

You must be accepted into the Radiology Program to take any RTE course other than RTE 101.

## RTE 101 Introduction to Radiography

### 2 credits

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

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

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. You will apply 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 Capstone Course

### 3 credits

RTE 289 prepares the radiology technology student to effectively search for a job in radiography and sit for the American Registry of Radiologic Technologists examination.

## **RUS- Russian**

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### **RUS 101 Conversational Russian I 3 Credits**

RUS 101 introduces beginning you to conversational Russian and focuses on understanding and speaking Russian. This course covers basic vocabulary, grammar, and expressions that are used in daily situations and in travel.

### **RUS 102 Conversational Russian II 3 Credits**

Prerequisite: RUS 101 or permission of instructor.

RUS 102 continues the sequence for students who wish to understand and speak Russian. This course covers basic conversational patterns, expressions, and grammar.

### **RUS 275 Special Topics 0.5-6 Credits**

RUS 275 provides you with a vehicle to pursue in depth exploration of special topics of interest.

## **SBM- Small Business Management**

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[www.rccc.edu/business](http://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. You will 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. You 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 you 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. You will engage in intensive study or research under the direction of a qualified instructor.

## **SCI - Science**

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### **SCI 155 Integrated Science I with Lab**

#### **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 with Lab**

#### **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. It critically explores issues of social change, demography, social movements, and conflicts and trends within political, economic, educational, religious, and familial structures.

## SOC105 Socio-History US Race/Ethnicity

### 3 credits

SOC 105 explores the Socio-Historical context by which the US developed its diverse racial and ethnic make-up. Theories of Integration and Segregation will be explored across the eras. Changing US immigration, naturalization, prejudice and discrimination across the centuries will be addressed.

## SOC 201 Introduction to Gerontology

### 3 credits

SOC 201 acquaints you with the major issues and concepts pertinent to the field of gerontology. The course introduces various theoretical perspectives on aging, the changing trends in life expectancy and other demographic considerations, and the interrelationship between elders and key social institutions. It provides an overview of physical, cognitive, and socioemotional factors associated with aging.

## SOC 203 Urban-Socio Anthropology

### 3 credits

SOC 203 examines how cities and city life are shaped by cultural, social, political, and economic forces operating at many different levels. Additionally, SOC 203 examines the history and theoretical roots of urban anthropology and sociology, ethnographic fieldwork in urban environment, and urban social organization in cross-cultural perspectives.

## 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 206 Men's Roles in Families and Society: An Introduction to Fatherhood (pending approval)

### 3 credits

SOC 206 examines men as fathers as well as their role in the wider culture. It seeks to enhance the personal, historical, professional, and behavioral awareness of fathers and the professionals who serve them.

## SOC 212 Research in Social Sciences

### 3 credits

SOC 212 introduces social research methods with an emphasis on the scientific method and the role of empirical inquiry into sociology. This course will include the study of methodologies of data collection and analysis, the logic of research, the role of theory, measurement, sampling and research designs. Field research and the professional norms and ethics of social research will also be covered.

## 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 216 Sociology of Gender

### 3 credits

SOC 216 gives you the theoretical and factual background necessary to understand the phenomenon of gender stratification in American and other cultures. You will be exposed to a history of gender stratification in human societies, theoretical explanations for this and insights into the consequences of gender differentiation in our world today.

## SOC 218 Sociology of Diversity

### 3 credits

SOC 218 explores the variety of intergroup 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 231 Sociology of Deviant Behavior

### 3 credits

SOC 231 examines the nature, identification, and explanation of deviant categories. Theories, and philosophies as well as methods of treatment related to deviancy will also be considered. The course will study society's attempts to control, change, and institutionalize those acts, individuals or groups that a population may deem unacceptable

## SOC 237 Death and Dying

### 3 credits

SOC 237 provides an opportunity to familiarize you 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.

**SOC 275 Special Topics in Sociology**  
**3 Credits**

SOC 275 provides you with a vehicle to pursue in depth exploration of special topics of interest.

**SOC 285 Independent Study**  
**3 credits**

SOC 285 meets the individual needs of students. You will engage in intensive study or research under the direction of a qualified instructor.

**SOC 289 Capstone**  
**3 credits**

SOC 289 studies and applies the theories and techniques of leadership and group processes. In addition, SOC 289 introduces leadership skills and experiences with applications in group and community settings.

## **SPA- Spanish**

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[www.rccc.edu/languages](http://www.rccc.edu/languages)

**SPA 101 Conversational Spanish I**  
**3 credits**

SPA 101 provides beginning students with 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 you with the skills necessary to understand and speak Spanish. The material continues to cover basic conversation patterns, expressions, and grammar.

**SPA 109 Spanish for Travelers**  
**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 and is 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 you 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 285 meets the individual needs of students. You will engage in intensive study or research under the direction of a qualified instructor.

# SPE- Speech

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[www.rccc.edu/speech](http://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 you to improve your 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 context, ethics, language, and nonverbal communication.

## **SPE 225 Organizational Communication**

### **3 credits**

SPE 225 studies human communication systems and patterns in business and organizational settings. Topics include exploration of leadership strategies; effective managerial communication skills with peers, superiors and subordinates; and organization communication environments, networks and goals.

## **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**

### **0.5-6 credits**

SPE 275 provides you with a vehicle to pursue in depth exploration of special topics of interest.

## **SPE 285 Independent Study**

### **0.5-6 credits**

SPE 285 meets the individual needs of students. You will engage in intensive study or research under the direction of a qualified instructor.

# TEC- Technical

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## **TEC 205 Geometric Dimensioning and Tolerancing**

### **3 credits**

TEC 205 enables you to interpret geometric dimensioning and tolerancing (GDT) in machining or drafting. The course covers math formulas, tolerancing systems, modifiers, symbols, datums, and tolerances of form, profile, orientation, runout and location. You will learn the generation of a working drawing is a team effort between design, drafting, manufacturing and quality control.

# THE- Theatre Arts

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[www.rccc.edu/theatre](http://www.rccc.edu/theatre)

## **THE 100 Technical Theatre Lab**

### **1-3 credits**

THE 100 provides you 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 you 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 you 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. You will also learn the proper procedures of using shop equipment and serving on stage crews.

### **THE 118 Acting Skills**

#### **Trades/Business**

#### **3 credits**

THE 118 incorporates acting skills that are useful for everyday interactions and public presentations. You can improve your personality habits through acting exercises to become more effective in your daily relationships and communication skills and also in presenting yourself in public. This class is especially for those who don't want to be actors but who would like to learn how to be more comfortable on the "stage" of life.

### **THE 120 Drafting for the Performing Arts**

#### **3 credits**

Prerequisite: THE 116 or permission of instructor

THE 120 teaches you 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 credits**

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 you 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 you 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 you to develop skills in nine dialects and accents.

### **THE 141 Improvisation I**

#### **1 credit**

THE 141 helps you 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 you 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. You will explore acting skills through advanced material, including avant garde and classical.

### **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 you with an overview of the Theatre Costume and Fashion industries. You will be introduced to many facets of both industries providing information that will assist in making career choices.

### **THE 175 Special Topics**

#### **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 210 Singing for Actors**

#### **3 credits**

THE 210 allows you to explore and perform Musical Theatre songs. You will use a pedagogical approach to evaluate your vocal structure and formulate a systematized series of vocal and whole body exercises to develop and enhance your self-confidence and vocal instrument through in-class 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 you 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: THE 111 or permission 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. You will construct 3-D models and a theatrical stage set.

### **THE 225 Sound Operation and Design**

#### **2 credits**

THE 225 is designed for you to understand and apply fundamental processes required to create a conceptual sound design for a stage play.

### **THE 230 Directing II**

#### **3 credits**

Prerequisite: THE 220 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 you to continue to put into practice the theories of theatre production. Participation in set construction, scenic artistry, costuming, lighting, sound, acting, stage-managing and administration are available.

### **THE 232 Theatre Production IV**

#### **3 credits**

Prerequisites: THE 111, THE 112 or permission of the instructor.

THE 232 allows you 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 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 you with individual tutorials, which define, design and apply specific vocal techniques to abate singing and speech difficulties. Master class performances provide the opportunity to conjure the energy, charisma and stage command necessary for presentations.

**THE 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. You will be introduced to pattern drafting.

**THE 260 Employment Skills for Technical Theatre  
1 credit**

In THE 260 you will 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 284 Internship  
1-6 credits**

THE 284 provides you with the opportunity to supplement course work with practical work experience related to your educational program. You will 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.rrcc.edu/wqm](http://www.rrcc.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 you 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 to 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, troubleshooting, 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. You will 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 you with the knowledge and skills to collect contaminant samples for laboratory analysis, to select and prepare appropriate sample containers; to keep accurate sampling records; access sampling sites and do composite sampling. This course also provides sampling safety skills and sampling quality 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 you 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 Wastewater Certification Review for Class C and D**

### **3 credits**

WQM 125 helps you prepare for the operators certification test in wastewater at the C or D level. Topics include wastewater principles, mathematics, hydraulics, conventional treatment of wastewater, wastewater sedimentation, Colorado Water Quality Control Act, biological treatment of wastewater, effluent 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 you 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 you 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 you 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**

Prerequisite: 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 biomonitoring.

### **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.

## **WEL- Welding**

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### **WEL 100 Safety for Welders**

**1 credit**

WEL 100 covers the hazards of welding on health and safety, locating essential safety information from a code or other standard, and identifying and applying shop safety procedures.

### **WEL 101 Allied Cutting Processes**

**4 credits**

WEL 101 covers setting up equipment and performing cutting and gouging operations utilizing the oxyacetylene, air carbon arc, and plasma arc cutting processes. This course will also provide an introduction to blueprint reading.

### **WEL 102 Oxyacetylene Joining Processes**

**4 credits**

WEL 102 introduces safety inspections, minor repairs, operating parameters, oxyacetylene welding equipment, and oxyacetylene welding, brazing, and soldering operations. Blueprint reading skills will be practiced in this course.

### **WEL 103 Basic Shielded Metal Arc I**

**4 credits**

WEL 103 covers performing safety inspections, making minor repairs, adjusting operating parameters, and operating SMAW equipment utilizing E-6010 and e-7018 electrodes. Layout procedures and practices will also be introduced.

### **WEL 110 Advanced Shielded Metal Arc I**

**4 credits**

WEL 104 covers safety inspections, minor repairs, operating parameters, operation of SMAW equipment, and SMAW operations on groove and fillet welds utilizing E-6010 and E-7018 electrodes. Layout procedures will be practiced during this course.

### **WEL 124 Introduction to Gas Tungsten Arc Welding**

**4 credits**

WEL 124 covers welding in all positions and on various joint configurations using the GTAW (tig) welding process on carbon steel, stainless steel and aluminum. Student should be familiar with basic metallurgy pertaining to the weldability of metals, structural joints, and safety in the welding industry.

### **WEL 130 Maintenance Welding**

**Credits: 2**

Prerequisite: Permission of instructor  
WEL 130 provides you a basic understanding of the Oxyacetylene cutting and Arc welding processes, and introduction to the skills and techniques used to develop fillet and groove welds. You will be introduced to oxyacetylene, shielded, gas metal arc welding equipment set up, and various welding techniques. Safety will be stressed during the course.

## **WEL 201 Gas Metal Arc Welding I**

### **4 credits**

WEL 201 covers safety inspections, minor repairs, operating parameters, operation of GMAW equipment on plain carbon steel utilizing short circuit and spray transfer, and fundamental metallurgy principles.

## **WEL 202 Gas Metal Arc Welding II**

### **4 credits**

WEL 202 covers safety inspections, minor repairs, operating parameters, operation of GMAW equipment utilizing a variety of electrodes and base metals, and fundamental principles of welding metallurgy to welding, fabrication, and inspection.

## **WEL 203 Flux Cored Arc Welding I**

### **4 credits**

WEL 203 covers safety inspections, minor repairs, operating parameters, operation of FCAW equipment utilizing self shielded wire, and principles of joint design, preparation, and material selection to welding operations.

## **WEL 204 Flux Cored Arc Welding II**

### **4 credits**

WEL 204 covers safety inspections, minor repairs, operating parameters, operating FCAW equipment utilizing gas shielded wire, and applying fundamentals of welding applications and cost estimating to welding, fabrication, and inspection.

## **WEL 224 Advanced Gas Tungsten Arc Welding**

### **4 credits**

WEL 224 covers welding in all positions on carbon steel, stainless steel and aluminum plate and carbon steel pipe with the GTAW process. Student should be familiar with basic metallurgy pertaining to the weldability of metals, structural joints, and safety in the welding industry.

## **WEL 250 Layout and Fabrication**

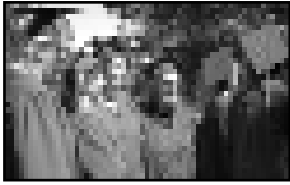
### **4 credits**

WEL 250 develops welding and associated skills in the use of drawings and blueprints in planning. Includes designing and layout projects.









# Directory

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Executive Director Planning,  
Research and Strategic  
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Administrative Services

Cher Haavind  
Executive Director  
Marketing &  
Communications

Rich Hawkins  
Executive Director Rocky  
Mountain Education Center

Kathy Curtin  
Budget Accountant

## **Faculty**

Lon Abbott  
Faculty, Geology  
Ph.D., University of  
California Santa Cruz, 1993;  
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1986

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Faculty Emeritus, Accounting  
M.B.Ed. University of  
Colorado, 1972;  
B.B.A., Ohio University, 1968

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Associate Professor, Math  
M.S., University of Colorado  
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D.M.A., University of  
Colorado, 1990; M.M.,  
Peabody Conservatory,  
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Michigan, 1972;  
B.A., University of Michigan,  
1970

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Ph.D., University of  
Colorado, 1980;  
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Reserve University, 1972

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J.D., Wayne State University,  
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M.A., New York University,  
1993; B.A., Empire State  
College, 1990

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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

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Faculty, Fire Science  
B.A., Regis University, 2004

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Faculty, Emergency and  
Medical Services  
A.A.S., Red Rocks  
Community College, 2003

Peggy Burrus  
Faculty, Business  
Technology  
B.S., Oklahoma State  
University, 1975

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Faculty, Computer  
Information Systems/  
Computer Science  
Microsoft Certified Systems  
Engineer; Microsoft Certified  
Trainer

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M.S., Northern Arizona  
University, 1996; B.A.,  
University of Alaska, 1991;  
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M.A., George Mason  
University, 1980;  
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Ph.D., University of  
Wyoming, 1994; B.A.,  
Chadron State College, 1989

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M.A., University of Colorado,  
1995; B.A., Vassar College,  
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Ph.D., University of Denver,  
2002; M.A. University of  
Denver, 1964; B.A.,  
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M.A., University of Kansas,  
2002; B.A., University of  
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Faculty, Math  
M.A.T., Northern Arizona  
University, 2001; B.A., Fort  
Lewis College, 1998

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Professor, Philosophy  
Ph.D., Iliff School of  
Theology/University of  
Denver, 1989; M.A., Wycliffe  
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Theology/ University of  
Toronto, 1981; B.A., Roberts  
Wesleyan College, 1977

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Faculty, English  
M.F.A., Univeristy of Iowa,  
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B.A., Smith College, 1998

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Carolina Wilmington, 1998  
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Carolina Wilmington, 1994

Candace Garrod  
Professor, Computer  
Information System/  
Computer Science  
M.Ed., Colorado State  
University, 1992; B.Ed.,  
Colorado State University,  
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Faculty, Fire Science  
A.A.S., Red Rocks  
Community College, 2004

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M.A., University of Colorado,  
1997; B.A., University of  
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Associate Professor, Physical  
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M.A., University of Northern  
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University, 1970

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Ph.D., University of  
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Licensed Master Plumber

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M.A., University of Phoenix,  
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Professor, Speech  
M.F.A., University of  
Wisconsin, 1981; B.A.,  
Montana State University,  
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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,  
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Hawaii, 1981

Liz Kleinfeld  
Faculty, English  
Ph.D., Illinois University,  
2006; M.S., Illinois University,  
1994; B.S., Bradley  
University, 1992

David Kriznar  
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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

Terri Lukavitch  
Professor, Criminal Justice  
M.A., University of Northern  
Colorado, 1986; B.A.,  
University of Northern  
Colorado, 1978

Jonas Mabey  
Faculty, Philosophy/Religion  
M.A., St Johns College,  
2000; M.A., St Johns  
College, 1998; B.A. Bemidji  
State University, 1996

Barbra Maher  
Assistant Professor, Physics  
M.S., University of Arizona,  
1994; B.S., Austin Peay State  
University, 1992; A.S., San  
Jacinto College, 1989

Jequita Potts McDaniel  
Faculty, Psychology  
M.A., Regis University, 2000;  
B.A., Metropolitan State  
College, 1984

David Nelson  
Faculty Emeritus, History  
Ph.D., University of Denver,  
1969; M.A., University of  
Denver, 1964; B.A.,  
University of Denver, 1963

Walter Nelson  
Faculty Emeritus, Literature  
M.A., University of Missouri,  
1971; B.A., California State  
College, Hayward, 1969

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

Fawn Oates  
Faculty, Psychology  
M.A., University of Denver,  
1999; B.A., Sonoma State  
University, 1997; A.A.,  
Modesto Junior College,  
1995

Delia Ochoa  
Faculty, Engineering  
Graphics  
B.A., Arte AC University,  
1987

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

Christine Shock  
Faculty, Multimedia  
B.S.S.W., University of  
Alabama Birmingham, 1992

Walt Schreiban  
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

Larry Snyder  
Associate Professor, 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

Ellen Speare  
Faculty, Health Careers  
B.A., San Jose State  
University, 1976; A.A., Foothill  
College, 1973

John Sperling  
Professor Emeritus,  
Carpentry B.S., University of  
Colorado, 1970;

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

Douglas Yates  
Faculty, English  
M.A., University of  
Nottingham, 1999; B.A.,  
Lehigh University, 1997

Laura A Zeeman  
Assistant Professor,  
Geography/Anthropology/  
History  
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

Judy Bowers  
Director  
Recruitment and Advising  
B.S., University of  
Colorado, 1986

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

Linda Crook  
Director of Financial Aid  
M.A., University of New  
Mexico, 1998; B.A., Texas  
Tech University, 1973

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  
RRCC Foundation  
M.A., American University,  
1991; B.A. University of  
Wyoming, 1987

Jody Glennon  
Director,  
Facility Services

Cher Haavind  
Executive 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

Colleen Jorgensen  
Vice President Instruction &  
Student Achievement  
Instructional Services  
M.S., University of Colorado  
at Denver, 1987;  
B.A., University of  
Northern Colorado, 1974

Kathryn Kaoudis  
Controller  
Business Services  
B.S.B., Old Dominion  
University, 1985

Carolyn Mattern  
Director Student Life  
Student Life  
B.S., University of Wisconsin,  
Milwaukee, 1977

Peggy Morgan  
Vice President Administrative  
Services  
B.S., Mesa State College,  
1996

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

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

Rick Reeves  
Dean of Instruction  
Instructional Services  
M.S., University of Colorado  
at Denver, 1992; B.A.,  
University of Colorado at  
Denver, 1990

Cliff Richardson  
President  
President's Office  
M.P.A., University of  
Colorado, 1987; B.S.,  
Metropolitan State College,  
1978

Joan Smith  
Executive Director, Planning  
Research & Strategic  
Initiatives  
M.P.A., University of  
Colorado at Denver, 2003;  
B.S., Colorado Christian  
University, 2000

Marilyn Smith  
Dean of Instruction  
Instructional Services  
M.A., University of  
Washington, 1977;  
B.A., University of Colorado,  
1975;  
A.A., El Paso Community  
College, 1973

Jen Squire  
Director, Personnel  
Personnel  
M.A., Webster University,  
1999; B.S., Metropolitan  
State College of Denver,  
1998

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  
Director Library & Alternative  
Delivery  
Instructional Services  
M.A., University of  
Colorado-Denver, 2000;  
B.F.A., University of  
Denver, 1985

## Technical Professional

Rosalie Akerson  
M.A., Webster University,  
1998; B.A., Northeast  
Missouri State University,  
1994; Certificate, Diagnostic  
Medical Sonography, Red  
Rocks Community College,  
2006

Jodi Allen  
Office Specialist  
Rocky Mountain Education  
Center

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Coordinator Purchasing  
Business Services

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

Mark Bana  
Coordinator, Construction  
Contract Services  
Facilities

Susan Barnett  
Director, Children's Center  
A.A. Red Rocks Community  
College, 1997

Brian Bayer  
Community Learning Center  
Coordinator  
Instructional Services  
A.A., Red Rocks Community  
College, 2004

Chuck Beck  
Program Coordinator  
Process Technology  
B.S., Colorado School of  
Mines, 1971

Dr Robert Beshore  
Medical Director  
Physician Assistant Program  
M.D., University of Nebraska,  
1959; B.S., University of  
Nebraska, 1955

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Academic Advisor/Recruiter  
Advising and Recruitment  
Ph.D., International College,  
1982; M.A., Azusa Pacific  
University, 1979; M.A.,  
California State University,  
1972; B.A., Wayne State  
University, 1967

Pat Bolton  
Director Family Resources  
B.S.N. Memphis State  
University, 1973

Karen Buck  
Coordinator Foundation  
Activities  
RRCC Foundation  
M.N.M., Regis University,  
2002; B.A., University of  
Colorado, Boulder; 1994

Diane Burke  
Community Learning Center  
Coordinator  
Instructional Services  
B.S., Bowling Green State  
University

Valerie Butler  
Kitchen Supervisor  
RRCC Café

Cindy Carlson  
Site Manager I  
School-Age Child Care

Cathy Chase  
Cashier  
Red Rocks Café

Nikki Coto  
Site Manager I  
School-Age Child Care

Kathy Curtin  
Budget Accountant  
President's Office  
A.A.S., Red Rocks  
Community College, 2003

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

Jason Dabit  
Testing and Evaluation  
Specialist  
Assessment Center  
B.S., Ort-Singalovesky, 1983;  
A.A.S., Red Rocks  
Community College, 2003  
A.A.S., Front Range  
Community College, 1991

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

Valerie Dobbs  
Assessment Center  
Coordinator  
Assessment Center  
M.A., Virginia Tech, 1995  
B.A., Ohio State University,  
1974

Daniel Doke  
Assistant Site Manager  
School-Age Child Care  
A.A.S., Art Institute of  
Colorado, 2000

Lauren Downs  
Site Manager I  
School-Age Child Care

Andrea Emery  
Toddler/Preschool Teacher  
Children's Center

Sarah Espinosa  
Site Manager II  
School Age Child Care

Jami Filippone  
Program Manager  
School Age Child Care

Demerick Fradl M.D.  
Academic Coordinator  
Physician Assistant Program  
M.D., University of Colorado,  
1977  
B.S., Central Michigan  
University, 1967

Frederick Fuentes  
Financial Aid Advisor  
Financial Aid  
B.A., Texas A&M University,  
1997

Sean Gillespie  
Academic Advisor/Recruiter  
Advising and Recruitment  
B.F.A., University of Akron,  
1994

Amy Glickson  
Graphics Specialist  
Marketing and  
Communications Dept  
B.A., University of South  
Carolina, 1991

Jamie Hahn  
Toddler/Preschool Teacher  
Children's Center

Nathan Harrison  
Site Manager I  
School Age Child Care

Jeffrey Holstein  
Library Assistant  
Library

Eric Howell  
Production and Design  
Coordinator  
Marketing and  
Communications  
M.B.A., Keller School of  
Graduate Management,  
2006; B.F.A., University of  
Wyoming, 1994; A.A.,  
Central Wyoming College,  
1992

Terry Hutchinson  
Publications Office/Project  
Center Assistant  
Student Life  
A.S., Parks Junior College,  
1990

Rosario Ibarra  
Cook  
Red Rocks Café

Lizz Jackson  
Program Manager  
School-Age Child Care

Karen Jaramillo  
Community Learning Center  
Coordinator  
Instructional Services  
B.A., Metropolitan State  
College, 2005

Kelli Jordan  
Site Manager I  
School Age Child Care

Gina Jimenez  
Coordinator and Community  
Liaison  
Arvada Campus  
B.A., Metropolitan State  
College of Denver, 1998

Tabitha Karr  
Assistant Site Manager  
School Age Child Care

Jim Keller  
Director Physician Assistant  
Program  
M.A., George Washington  
University, 1989; B.A., Park  
College, 1979; A.S., Baylor  
University, 1976

Marilyn Kenfield  
Office Specialist  
Office of Special Services  
A.A., Red Rocks Community  
College, 2004

Dana Kobold  
Coordinator Pathway  
Programs  
B.S.Ed., Northeast Missouri  
State University, 1987

Jeannine Kreller  
Business and Industry  
Program Coordinator  
Rocky Mountain Education  
Center

Cindy Krut  
Toddler/Preschool Teacher  
Children's Center

Catherine Lachman  
Educational/Career Advisor  
Pathways

Randy Landis-Eigsti  
Tutor  
Office of Special Services  
B.A., Goshen College, 1981;  
A.A., Hesston College, 1977

Susan Lebron  
Clinical Coordinator,  
Radiology  
B.S., Midwestern State  
University, 2004; A.S.,  
Horrey-Georgetown Technical  
College, 1995

Carrie Lehnerz  
Site Manager I  
School-Age Child Care

Terry Liggins  
Quality Improvement  
Coordinator  
Family Resources

Patricia Lopez  
Office Specialist  
Rocky Mountain Education  
Center

Barbara Luthye  
Site Manager II  
School-Age Child Care

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

Carolyn Mattern  
Director Student Life  
Student Life  
B.S., University of  
Wisconsin, Milwaukee,  
1977

Kate Martinez  
Assistant Site Manager  
School Age Child Care

Kelly McDermott  
Food Service Director  
RRCC Café  
B.S., Johnson & Wales  
University, 1992; A.S.,  
Johnson & Wales University,  
1990

Sandra McKinley  
Financial Aid Advisor  
Financial Aid  
B.A., University of California,  
1978

Molly McNally-Dunn  
Director  
School-Age Child Care  
B.A., St. Joseph College,  
1971

Randi Mendez  
Toddler/Preschool Teacher  
Children's Center

Marilyn Mercer  
Librarian  
Library  
M.A., Carnegie-Mellon  
University, 1975; M.L.S.,  
University of Pittsburgh,  
1972; B.A., Bryn Mawr  
College, 1970

Judy Meza  
International Education  
Assistant  
International Education  
M.A., University of Illinois  
Chicago, 1988; B.A.,  
University of Illinois Chicago,  
1988

Deborah Nelson  
Outreach Specialist  
Family Resources  
B.S., Colorado Christian  
University, 1993

Cathy O'Connell  
Benefit Specialist  
Personnel

John O'Neill  
Telecommunications  
Technician  
Audio Visual  
B.S., University of  
Wisconsin, 1982

Shannon Osborne  
Assistant Site Manager  
School Age Child Care

Elizabeth Ownsby  
Intern  
Department of Emergency  
Management  
A.S., Casper College, 2003;

Elizabeth Parks  
Theatre Lab Assistant  
Instructional Services  
M.A., Bowling Green State  
University, 2003  
B.A., Franciscan University of  
Steubenville, 2000

Lauren Peterson  
Assistant Teacher  
Children's Center  
B.A., Baylor University, 2003

Pat Phillips  
Academic Advisor/Recruiter  
Advising and Recruitment  
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

Donna Remley  
Special Services  
Director  
B.S., Metropolitan State  
College of Denver, 1996;  
A.A., Red Rocks  
Community College, 1994

Kris Robledo  
Assistant Director  
Family Resources  
B.A., University of  
Northern Colorado, 1981

Cathy Rock  
Technical Education  
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

Elizabeth Rogers  
Site Manager I  
School Age Child Care

Alice Rumph  
Coors Learning Center  
Manager  
Rocky Mountain Education  
Center  
B.S., Ohio State University,  
1965

Yukiko Saito  
Teacher's Assistant  
Children's Center  
A.A. Oberlin College, 1975

Joseph Sanchez  
Director  
Library Services and  
Learning Resources  
B.A., California State  
University, 1999; A.A.,  
Palomar Community College,  
1993

Micheala Sanders  
Referral Data Specialist  
Family Resources

Ron Schuetz  
Technical Equipment  
Coordinator  
Rocky Mountain Education  
Center  
A.A.S., Front Range  
Community College, 1993

Amy Seelbach  
Site Manager I  
School Age Child Care

Patrick Shannon  
Lab & Shop Manager  
Construction Technology

Phyllis Simonton  
Provider Liaison  
Family Resources

Anita Snyder  
Toddler Preschool Teacher  
Children's Center

Shawn Spencer  
Assistant Site Manager  
School Age Child Care

Mark Squire  
Coordinator Student Life  
Activities  
Student Life  
B.S., University of Northern  
Colorado, 1992;  
A.A.S., Red Rocks  
Community College, 1998

Andrew Stevens  
Fiscal & Student Data  
Analyst  
Planning, Research &  
Strategic Initiatives  
B.A., Colorado State  
University, 2005

Suzanne Sullivan  
Internship & Job  
Development Coordinator  
Student Employment  
M.A., University Northern  
Colorado, 1980; B.A., St.  
Joseph College, 1969

Deb Sylvester  
Assistant Controller  
Accounting Services  
B.S., Regis University, 2006  
A.A., Red Rocks Community  
College, 2003

Sarah Thomas Jernigan  
Toddler/Preschool Teacher  
Children's Center

Jennifer Thurston  
Academic Advisor/Recruiter  
Advising and Recruitment  
B.S., Georgia Institute of  
Technology, 1991; A.A.,  
Charles County Community  
College, 1988

Maryann Touitou  
Community Learning Center  
Coordinator  
Instructional Services  
M.A., University of  
Oklahoma, 1996; B.A.,  
College of St Mary's, 1970

John Trombly  
Director, Medical Imaging  
Medical Imaging Education  
B.S., Midwestern State  
University, 1989

Cindy Vadeboncoeur  
Financial Aid Advisor  
Financial Aid  
B.A., University of  
Minnesota-Duluth, 1978

Dania Walker  
Coffee Kiosk Manager  
RRCC Café

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

Beverly Wise  
Site Manager I  
School Age Child Care

Michelle Woods  
Testing and Evaluation  
Specialist  
Assessment  
A.A.S., Community College  
of Denver, 2004

Linda Yazdani  
ESL Program Coordinator  
International Education  
B.S.C., University of Victoria,  
1985

Tamara Yeager  
Referral Data Specialist  
Family Resources  
A.A.S., Community College  
of Denver, 1995

Michelle Zappe  
Site Manager I  
School Age Child Care

## Classified

John Anderson  
Media Specialist IV  
Media Resources

Robert Asher  
Grounds & Nursery  
Arvada Campus  
A.S., Front Range  
Community College, 2005

Claudia Aspinall  
Administrative Assistant II  
Facility Services

Jane Banzhaf  
Program Assistant I  
Instructional Services  
A.A.S., Red Rocks  
Community College, 1997

Nicholas Battaglia  
Lab Coordinator I  
Instructional Services  
B.S., University of Colorado,  
2005

Lynn Beltran  
Administrative Assistant III  
Emergency and Public  
Service/Health Careers  
A.B., Horry Georgetown  
Technical College, 1999

Rose Bernal  
Administrative Assistant II  
Campus Police  
B.A., Pennsylvania State  
University, 2001

Greg Berry  
LTC Operations I  
Facility Services



Judith Brna Accounting Technician II School Age Child Care	Julie Dike Administrative Assistant III RRCC Foundation A.A., Red Rocks Community College, 2005	Ruth Fry Administrative Assistant III Arvada Campus A.A.S., Mile Hi College, Inc., 1986	Diane Hughes Administrative Assistant III Enrollment Services
Fredrick Brown Custodian II Facility Services	Diane Drobnick Program Assistant I Instruction A.A., Pueblo Community College, 1972	Rose Galan Custodian I Facilities	Jon Jacobs Electrical Trades II Facilities
Aminta Burr Accounting Tech II Payroll A.A.S., Red Rocks Community College, 2005	Pat Dunn Library Technician II Library M.L.S., San Jose State University, 1987; B.A., University of California, Irvine, 1980; A.A., Monterey Peninsula College, 1976;	Tony Garcia Structural Trades I Facility Services	Kim Kleiman Administrative Assistant II Enrollment Services
David Burns Mechanical Trades II Facility Services	Arlene Duran Technician IV Physician Assistant Program	Anne Gonzales Administrative Assistant II Enrollment Services	Nancy Kooken Custodian I Facility Services
Bishop Burroughs Custodian II Facility Services B.S., Texas Southern University, 1971	Janis Eagan Administrative Assistant III Enrollment Services A.A., Red Rocks Community College, 1991	Gil Gonzales Accountant I Cashier's Office	Susan Kumpf General Professional II Records B.A., Baldwin Wallace College, 1963
Debbie Carson Accounting Technician II Cashier's Office	Jennifer Eaves Custodian I Facility Services	Janet Gonzales Program Assistant I Instructional Services	Sal Lafebre Custodian I Facility Services A.S., Denver Automotive Diesel College, 1996
Cindy Cespedes Administrative Assistant III Enrollment Services	Bruce Elliott Custodian I Facility Services	Tom Gurule Custodian II Facility Services	Celedon Lefebre Custodian II Facility Services
Rose Chavez Custodian I Facilities	Carolyn Fabrizio Accounting Technician II Cashier's Office A.A.S., Red Rocks Community College, 1994 A.A., Red Rocks Community College, 1995	Scott Haugen Structural Trades I Facilities Services	Don Lewis Accounting Tech III Payroll A.A., College of the Red Woods, 1994
Jeremy Cherrington Custodian I Facility Services	Beth Foster General Professional II Student Life A.A., Red Rocks Community College, 1994	Jack Henderson Structural Trades I Facility Services	Laura Licari Administrative Assistant III Planning Research & Strategic Initiatives
Joe Cisneros Custodian I Facility Services	Drake Franklin Custodian I Facilities/Housekeeping	Paul Henry Information Technology Technician II Computer Services	Bob Lyon Security I Facilities Services
Lisa Comba Administrative Assistant III School Age Child Care B.A., University of Nebraska, 1984	Linda Frechette Program Assistant I Facility Services	Kristine Herrera Accounting Tech I School Age Child Care	Clara Macy Lab Coordinator I Instructional Services
Deborah Dahlstrom Administrative Assistant III Marketing & Communications		Janet Hill Dining Services III Children's Center	Darlene Marshall Administrative Assistant III Student Employment B.S., West Virginia State College, 1968
Kenneth Dear Custodian I Facility Services		Tara Hoffman Accounting Tech III Cashiers Office	Eric Martin Custodian I Facility Services
		Alvarado Holguin Materials Handler I Facility Services	

Kathleen Martinez  
Administrative Assistant III  
Construction Technology  
A.A.S., Red Rocks Community  
College, 2003

Richard Martinez  
Information Technology  
Technician I  
Computer Services  
B.S., Metropolitan State  
College of Denver, 2003

Debbie Maya  
Accounting Technician III  
Payroll

Rico Medina  
Structural Trades II  
Facility Services

Donna Merriman  
Administrative Assistant III  
Records  
A.A.S., Red Rocks Community  
College, 1989

Mel Moll  
Administrative Assistant III  
Records  
A.A.S., Red Rocks Community  
College, 1991;  
A.A.S., Red Rocks Community  
College, 1990

Valerie Montoya  
Administrative Assistant II  
Arvada Campus

Kathy Moore  
Administrative Assistant II  
Records  
B.S., Metropolitan State  
College of Denver, 1976

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Administrative Assistant III  
International Education  
B.A., Colorado Christian  
University, 1995

Shaun Ortega  
Groundskeeper II  
Facility Services

Patricia Pacheco  
Library Technician III  
Library  
B.S., Metro State College,  
1995

Jerry Powers  
HVAC Mechanic  
Facility Services  
A.S., New England Tech, 1995

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  
A.A., Red Rocks Community  
College, 2000

Joan Rome  
Program Assistant I  
Student Services

Mark Royce  
Security I  
Campus Police

Donna Salinas  
Program Assistant I  
Marketing and  
Communications  
A.S., South Suburban College,  
1994

Isaiah Sanchez  
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Facility Services

Matthew Sanchez  
Groundskeeper II  
Facility Services

Sheryl Scharnikow  
Administrative Assistant III  
Learning and Resource  
Center

Sonja Starkweather  
Material Handler II  
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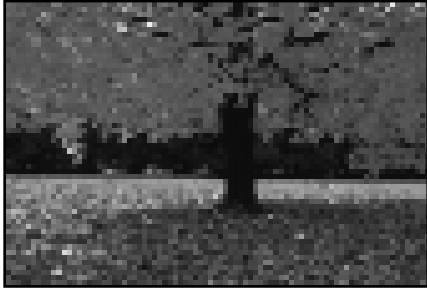
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# Glossary of Catalog Terms

## Terms You Need to Know from the RRCC Catalog

This list of words and phrases with their definitions is intended to help you familiarize yourself with terms that you will encounter not only in the RRCC Catalog but also throughout your college career. Understanding these terms and applying them correctly is vital to your success as a college student. (Also consult the index on pp. 246-248 which lists additional terms with specific page numbers.)

**Admission:** People ages 16 and above who want to attend RRCC can apply for entry to the college using the procedure described on p. 6. The Office of Admissions is located directly across from the college's main entrance.

**Advisors:** RRCC's academic (also referred to as general) advisors help new and continuing students at all stages of their college careers since advisors know which classes students need to take to reach their goals. Students seeking certificates, degrees, and/or eventual transfers to four-year colleges or universities need to work with advisors. These advisors can be found in the Advising Area next to the Admissions Office. (Refer to p. 7.)

- Faculty advisors also are available to assist students. Many times academic general advisors will refer students to faculty advisors for specific information concerning courses and programs. Students who are pursuing a certificate or associate of applied science degree should work with a program area faculty advisor.

**Assessment:** To assess means to appraise. In a community college setting, that means appraising your reading, writing, and mathematics skills so that you begin your college career with the best chance of succeeding. RRCC administers the Accuplacer test: it is NOT an entrance exam but it does give students, advisors, and teachers the information needed to determine which classes students are ready to take. (Refer to pp. 7, 11 for additional information.)

Once you are enrolled in classes, you will find that your teachers will assess all students' progress regularly using a variety of methods. Yes, exams are one way, but other methods include writing essays, reports, and research papers; giving oral reports; completing exercises and homework assignments; discussing topics in class—the list is long and varied. It is important that YOU assess your own progress so that you can ask questions and seek help when necessary. (Refer to pp. 11-12.)

**Audit (AU):** If you want to take a class without earning credit or receiving a final grade, you can choose to do so at the time you register for the class. If you choose this option, please understand that you cannot change your mind after registering and declare that you want to earn credit and a grade for the class. Also note that you must pay full tuition and fees, and you will not receive the COF stipend. (Refer to p. 19 in the catalog for additional information.)

**Catalog:** The RRCC Catalog lists and describes essential information for all students, advisors, teachers, staff, and administrators. Use the catalog in tandem with each semester's schedule of classes. The catalog is a vital resource that you need to read and review regularly. You will graduate under the requirements in effect for the semester that you first enrolled unless you have a one-year break in attendance. You also may choose to use the catalog in effect during the semester you graduate. For more information and/or clarification, meet with your advisor. (Refer to p. 22.)

**Certificates:** In addition to two-year degrees, you can earn certificates in a variety of specialties. A certificate can require as few as five credits and in some cases can count toward a degree. (Refer to pp. 36-37.)

**Co-requisite:** A co-requisite is a course that is required with another course. For example, a student enrolled in REE 201 (Real Estate Brokers I) must also be enrolled in REE 202 (Real Estate Brokers II). In this particular case, both classes must be taken together; they meet at the same time with the same instructor. (If a co-requisite is required, you will see an explanatory note in the current semester's schedule and oftentimes in the "Course Descriptions" section of the catalog.) Meet with an academic or faculty advisor before enrolling in classes to learn more about specific co-requisites.

**College Opportunity Fund (COF):** Colorado residents attending RRCC (or any other state-supported or participating private colleges and universities) must enroll in COF so that the state will pay its portion of each Colorado resident's tuition. Enroll online by going to [www.rrcc.edu](http://www.rrcc.edu) and clicking on the link to COF. (Refer to p. 9 for additional information.)

**Credit(s):** A credit, in the academic sense, refers to a unit of study. In both the RRCC Catalog and the current semester's schedule, you will see that most courses offered at RRCC are worth a certain number of credits. The number of credits assigned to each course can be found in the "Course Descriptions" section of the catalog as well as in the listing of courses in the current semester's schedule. If you have questions concerning credits, the best source of information is an academic or a faculty advisor.

Note: Full-time students are those who take 12 or more credits in a semester; part-time students are those who take fewer than 12 credits in a semester.

**Degrees:** RRCC offers a variety of two-year associate degrees: Associate of Arts, Associate of Science, Associate of General Studies—Specialist, Associate of General Studies—Generalist, and Associate of Applied Science. Meet with a faculty or an academic advisor and refer to pp. 24-35 to learn about each degree's requirements.

**Financial Aid:** Tuition assistance is available in four types: scholarships, grants, loans, and work-study agreements. To receive information concerning financial aid and the application process, consult [www.rrcc.edu/finaid](http://www.rrcc.edu/finaid), call to schedule an appointment with a financial aid representative at 303-914-6256, and/or talk with an academic advisor. (Refer to p. 9.)

**General Education Courses:** These are courses not directly related to a student's formal preparation for a career but are courses that need to be part of every college student's body of knowledge in order for him or her to function as an educated adult. These courses are numbered 100 and above.

**General Education Development (GED):** RRCC offers a free practice test for the GED as well as a GED preparation course. (Refer to p. 11 for details.)

**Grade Point Average (GPA):** GPA refers to your average grade and is determined by dividing the grade points earned by the number of credits attempted. (Refer to p. 20 for a thorough explanation and an example of calculation.)

**Graduation:** Meet with a faculty or an academic advisor BEFORE beginning any program of study. Advisors know the requirements and can help you stay with your plan. Upon successful completion of degree or certificate requirements, you can receive recognition for your efforts during commencement exercises, but only if you have completed and submitted the graduation application. (Refer to p. 22.)

**Graduation Audit and Graduation Application:** When you have successfully completed 42 credits, you are usually only 18 credits away from graduating with one of the associate degrees that RRCC offers. At this point it is important for you to initiate a graduation audit and to meet with your faculty advisor to find out what additional courses you need to take to fulfill the graduation requirements.

1. The graduation audit request form is available from the Admissions Office, or you can find it online at the following: <https://adminps.rrcc.edu/audit/requests/form.htm>  
It is important to meet with a faculty or academic advisor so that he/she can assist you as you plan to complete the required courses for the degree you are seeking.
2. Near the beginning of the semester in which you want to graduate, you must submit a graduation application form by the date listed in the current semester's schedule. The application form is available from the Admissions Office, or you can find it online at the following: [www.rrcc.edu/admis/gradap.html](http://www.rrcc.edu/admis/gradap.html)  
Meet with an academic or faculty advisor so that he/she can assist you with the graduation application process.

**International Students:** These are students admitted to the U.S. on an F1 non-immigrant student visa. (Read p. 15.)

**Learning and Resources Center (LARC):** The LARC is located next to RRCC's main entrance and includes the library and quiet study rooms (upstairs) and study and tutoring areas on the main floor. As an RRCC student, you can take advantage of all the help available in the LARC which includes free, walk-in tutoring in math, writing, reading, the sciences, accounting, Microsoft applications, and other subjects. Several computers for your use also are available. (Refer to p. 11 and/or call 303-914-6705 for additional information.)

**Office of Special Services (OSS):** This office coordinates services to provide equal opportunities for RRCC students with documented disabilities so that they can pursue their educational goals. Call 303-914-6733 or 303-914-6737 (TTY). (Refer to p. 12.)

**Open-Entry Community College:** Anyone who can benefit from RRCC's instructional programs and courses, including high school graduates, non-graduates, and students 16 years or older who are currently enrolled in high school, are welcome to apply by following the admission procedures on p. 6.

**Phi Theta Kappa:** RRCC sponsors a chapter of Phi Theta Kappa, the national student honors organization for two-year colleges. (Refer to p. 21.)

**Plagiarism:** The word is taken from the Greek and means the kidnapping of other people's words and/or ideas, a serious academic offense listed in the RRCC Catalog as academic dishonesty: "Those committing academic dishonesty will be subject to disciplinary action, and/or including failing the assignment or course, and/or expulsion from the college" (19). Work closely with your instructors and tutors to avoid plagiarism.

**Prerequisite:** This is a course that is required before taking another course. For example, before you can enroll in ENG 122 (English Composition II), you must have taken ENG 121 and passed with an A, B, or C.

Prerequisites are listed with course descriptions on pp. 123-232 in the catalog.

Meet with an academic or faculty advisor before enrolling in classes to learn more about specific prerequisites.

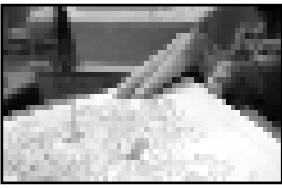
**State-Guaranteed General Education Courses:** These are general education courses mandated by the State of Colorado which associate of arts (AA) and associate of science (AS) degree-seeking students must take; courses are listed on pp. 25 and 27 of the catalog. A variety of courses are available in the areas of communication, mathematics, arts and humanities, social and behavioral sciences, and physical and life sciences.

Meet with an academic or faculty advisor who can help you select the courses that fulfill the AA and/or AS degree requirements.

**Tuition:** The fee charged for instruction by a formal institution of learning is called tuition. Paying tuition and fees allows you the opportunity to learn and to earn your grades in the classes you take. (Refer to p. 9 in the catalog.)

Do not assume you have been dropped from a class if you miss tuition and fee payment deadlines or fail to attend a class.

Once you have registered for a class, you are responsible for paying full tuition and fees unless YOU drop the class on or before the drop/refund date listed in the current semester's schedule. RRCC does not automatically drop students for non-payment and/or non-attendance.



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